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<sup>(1)</sup> Text with EEA relevance.

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Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

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## II

*(Non-legislative acts)*

## DECISIONS

## COMMISSION DECISION (EU) 2017/2111

of 5 July 2016

**on the setting-up and capitalisation of Airport Handling SpA SA.21420 (2014/C) (ex 2014/NN)  
implemented by Italy***(notified under document C(2016) 4103)***(Only the Italian text is authentic)****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular the first subparagraph of Article 108(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments pursuant to the provision(s) cited above <sup>(1)</sup> and having regard to their comments,

Whereas:

**1. PROCEDURE**

- (1) On 23 June 2010, following a complaint, the Commission notified the Italian authorities of its decision to initiate the formal investigation procedure pursuant to Article 108(2) of the Treaty on the Functioning of the European Union ('the Treaty'), in connection with the capital injections carried out between 2002 and 2010 by SEA SpA (hereinafter 'SEA'), the state-owned operator of the Milan Malpensa and Milan Linate airports, in its subsidiary SEA Handling SpA (hereinafter 'SEAH'), ground handling provider at those airports.
- (2) During that period, SEA had been almost entirely owned by public bodies, namely the Municipality of Milan (84,56 %) and the Province of Milan (14,56 %), alongside with smaller shareholders (0,88 %). In December 2011, 29,75 % of SEA's capital was sold to the private fund F2i (*Fondi italiani per le infrastrutture*). End 2012, F2i increased its shareholding in SEA to 44,31 %. At the closure of the formal investigation procedure by this Decision, SEA is owned 54,81 % by the Municipality of Milan, 44,31 % by F2i and 0,88 % by other shareholders.
- (3) On 19 December 2012 the Commission adopted decision C(2012) 9448, corrected by decision C(2013)1668 of 22 March 2013 (hereafter 'the recovery decision') concerning aid granted by SEA to its subsidiary SEAH during the years 2002-2010. The Commission concluded that the entirety of the injections carried out by SEA into its subsidiary's capital constituted unlawful State aid. The Commission also concluded that, although SEAH could be classified as an undertaking in difficulty, those capital injections could not be declared compatible with the internal market under the EU guidelines on State aid for rescuing and restructuring firms in difficulty <sup>(2)</sup>.

<sup>(1)</sup> OJ C 44, 6.2.2015, p. 30.

<sup>(2)</sup> OJ C 249, 31.7.2014, p. 1.

- (4) Consequently, Italy was ordered to take all necessary steps, in accordance with the applicable national laws, to recover from SEAH the incompatible State aid of approximately EUR 359,644 million plus recovery interest.
- (5) On 4 March 2013, 15 March 2013 and 18 March 2013 respectively, Italy, SEAH and the Municipality of Milan lodged actions for annulment against the recovery decision before the General Court (Cases T-125/13, T-152/13 and T-167/13). Cases T-125/13, T-152/13 and T-167/13 are pending.
- (6) On 18 March 2013 and 21 March 2013, SEAH and the Municipality of Milan introduced applications to suspend the operation of the recovery decision (Cases T-152/13 R and T-167/13 R). On 21 May 2013, the Administrative Court of Lombardy ('TAR Lombardia') ordered the suspension of the implementation of the recovery decision. On 25 September 2013, the Council of State ('CdS') annulled the order of TAR Lombardia. The application for suspension brought before the General Court was withdrawn in June 2013<sup>(3)</sup>.
- (7) On 27 November 2013, by way of an informal pre-notification process, Italy consulted the Commission on the following projects: First, on SEA's plan to liquidate SEAH; second on SEA's intention to establish a new subsidiary providing ground handling services at Milan airports, named 'Airport Handling SpA' (hereinafter 'Airport Handling') and to inject initial equity into it. In that pre-notification process, Italy asked the Commission to confirm that:
- (a) the sale of SEAH's assets in the liquidation procedure does not involve elements of economic continuity with Airport Handling, and thus does not transfer the former's liabilities to the latter, and in particular the requirement to recover the unlawful and incompatible State aid granted to SEAH;
- (b) SEA's equity injection into Airport Handling's capital does not qualify as State aid.
- (8) By letter dated 9 July 2014, the Commission informed Italy that it had decided to initiate the procedure laid down in Article 108(2) of the Treaty in respect of the setting-up by SEA of Airport Handling ('the 2014 opening decision'). With that procedure, the Commission invited Italy to provide all such information as may help to assess the question of the transfer of the recovery obligation from SEAH to Airport Handling as well as the possible aid inherent in SEA's capital injection in Airport Handling, within 1 month of the date of receipt of this letter.
- (9) On 19 September 2014, Italy, SEA and Airport Handling lodged actions for annulment against the 2014 opening decision before the General Court (Cases T-673/14, T-674/14 and T-688/14). The General Court (Fourth Chamber) rejected the action in Case T-673/14 by Order of 8 December 2015; the actions in Cases T-674/14 and T-688/14 were withdrawn on 14 and 15 July 2015 respectively.
- (10) On 23 September 2014 and 25 September 2014, SEA and Airport Handling introduced applications for *interim* measures to suspend the operation of the Commission's 2014 opening decision (Cases T-674/14 R and T-688/14 R). On 29 September 2014, the President of the General Court ordered the suspension of the publication of the 2014 opening decision in the *Official Journal of the European Union*. On 28 November 2014, the President of the General Court rejected SEA's and Airport Handling's requests for *interim* measures and revoked the preliminary *interim* measure whereby it ordered the Commission not to publish the 2014 opening decision<sup>(4)</sup>.
- (11) On 6 February 2015, the 2014 opening decision was published in the *Official Journal of the European Union*<sup>(5)</sup> and the Commission thereby invited interested parties to submit their comments on the measures under investigation.
- (12) Italy submitted its comments on the 2014 opening decision by letter dated 9 September 2014.

<sup>(3)</sup> See Order of 20 June 2013, case T-152/13 R, ECLI:EU:T:2013:337, and Order of 1 July 2013, case T-167/13 R, ECLI:EU:T:2013:331.

<sup>(4)</sup> See Order of 28 November 2014, case T-688/14 R, ECLI:EU:T:2014:1010. The President of the General Court dismissed the application in case T-674/14 R by Order of 27 November 2014, ECLI:EU:T:2014:1009.

<sup>(5)</sup> OJ C 44, 6.2.2015, p. 30.



- (13) The Commission received comments from four interested parties. It forwarded those comments to Italy and gave it the opportunity to react. Italy informed the Commission of its observations on said comments by letter of 26 May 2015.
- (14) The Commission asked Italy to provide additional information by letter of 20 May 2015. Italy replied by letters of 19 and 22 June 2015 and 2 July 2015.
- (15) Meetings between the Commission's services and the representatives of the Italian authorities and the Milan Airport Handling Trust took place on 30 January 2015, 7 May 2015, and 15 September 2015. Those meetings were followed by several submissions to the Commission by the Trust on 6 February 2015, 8 June 2015, 13 August 2015 and 23 September 2015, essentially aiming to inform the Commission on the state of the procedure for the sale of a minority shareholding in Airport Handling. The nature and task of the Trust will be explained in Section 2.3 below.
- (16) By letter dated 23 October 2015, the Commission asked Italy to provide supplementary information. Italy responded by letter dated 10 November 2015.
- (17) On 25 November 2015, a meeting was held between the Commission services and the Italian authorities, the Milan Airport Handling Trust and the company D'Nata that was preparing to acquire a participation in Airport Handling's share capital.
- (18) By letter of 16 December 2015, Italy informed the Commission on plans to partially alter the scope of Airport Handling's economic activities.
- (19) Italy presented a summary of the main elements it had supplied in the course of the proceedings, by letter of 18 December 2015. The Commission responded by letter of 19 January 2016.
- (20) By letters dated 29 January and 15 February 2016, Italy updated the Commission on the process of the privatisation of Airport Handling.

## 2. DESCRIPTION OF THE MEASURE

- (21) There are two measures under investigation: First, the creation of Airport Handling combined with the liquidation of SEAH. The Commission assessed whether this measure gave rise to economic continuity between the two companies, leading to a transfer of the recovery obligation from SEAH to Airport Handling. Second, the provision of equity capital to Airport Handling, by its public mother company SEA. The Commission assessed whether this measure was implemented on market terms. In the following, a description of the circumstances surrounding these transactions is given.

### 2.1. Agreements with the trade unions and new work contracts

- (22) In the period during which the measures under investigation were implemented, SEA Group (SEA and SEAH), SEAH and Airport Handling respectively concluded agreements with the trade unions that represented the employees of SEAH, against the backdrop of SEAH's voluntary liquidation, initiated by SEA. The overall objective of these agreements was to safeguard the jobs of all SEAH personnel and to ensure continued and sustainable handling operations in the SEA-Group. The following agreements were concluded:
- (23) After SEA had decided that SEAH should be wound up in order to comply with the recovery decision, SEA Group concluded an agreement with trade union organisations, on 4 November 2013, to solve the issue of SEAH workers becoming redundant. The agreement provided for a voluntary termination incentive plan for all SEAH employees, to be implemented through collective dismissals and the incorporation of a new whollyowned subsidiary of SEA which would hire part of SEAH's workforce.
- (24) That agreement specified a 'draft settlement' and stipulated that an 'Implementing Agreement' was necessary to set out rules for new contractual conditions and a new working structure for Airport Handling employees, because the requirement for discontinuity stated by the Commission would dictate the creation *ex novo* of employment relationships. Further according to the agreement, conclusion of such Implementing Agreement would only be possible following the completion of 'commercial negotiations between Airport Handling and the carriers operating at Linate and Malpensa Airports, in a context of free competition' <sup>(6)</sup>. In summary, the Implementing Agreement had to be based on the following principles:

— continuation of the objective to safeguard the jobs of all SEAH personnel,

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<sup>(6)</sup> Point 5 of the agreement of 4 November 2013.

- identification of clear criteria for the possible relocation of personnel within the SEA group,
  - economic viability of the handling business,
  - definition of an appropriate, inclusive system of industrial relations,
  - continued application of the SEA Group company welfare system.
- (25) On 22 April 2014, SEAH initiated the laid-off workers' mobility scheme (*Collocamento in mobilità*), a social security scheme put in place by the Italian State mainly aiming to support employees of companies in difficulties during unemployment periods <sup>(7)</sup>. At that time, SEAH had 2 214 employees, being the equivalent of 1 980 full time employees.
- (26) On 31 May 2015, Airport Handling had [...] (\*) employees ([...] (\*) full-time equivalents, hereinafter 'FTE'), of which [...] (\*) employees ([...] (\*) FTE) were previous SEAH-employees.
- (27) On 4 June 2014, SEAH and the trade unions signed the Implementing Agreement aiming to implement the provisions of the draft settlement described under recital 24 above.
- (28) The agreement laid down that SEA had consented, firstly, that Airport Handling employs SEAH personnel, to the extent and subject to the job profiles required by Airport Handling and secondly, that negotiations with the trade union organisations commence with regard to staff selection criteria. The agreement also points out that any new employment contract with Airport Handling would be necessarily characterised by a break with the formal and substantive content of the employment contract with SEAH.
- (29) According to that agreement, SEAH showed its availability to provide for a financial incentive scheme for workers who by 30 June 2014 agree not to oppose the layoff measures.
- (30) Also on 4 June 2014, Airport Handling concluded an agreement with the trade union organisations. That agreement specifies the number of employees with contracts of an indefinite duration required by Airport Handling on 1 July 2014. It further specified that Airport Handling agreed to re-employ with priority former employees of SEAH.
- (31) That agreement indicates Airport Handling's presumed labour demand expressed in FTE. In that context, the agreement emphasises that those indications may be subject to change in terms of the total number and/or variables stated in the agreement. The staff estimates were as follows: [...] (\*) FTE permanent staff for operations; [...] (\*) FTE administrative staff; [...] (\*) FTE fixed-term personnel for seasonal activities. The agreement stipulates that, in order to satisfy that demand, Airport Handling's priority strategy will be to approach individuals currently employed by SEAH. The agreement also provides for the recruitment procedure, the legal and financial content of employment contracts, welfare policy and work organisation. The agreement's provisions imply that former SEAH staff will be hired under new contracts with materially different economic conditions.
- (32) Working arrangements set out in that agreement differ from those which SEAH applied to its employees. In particular:
- under the national collective labour agreement for aviation staff, Airport Handling would apply the Handlers section, while the Airport operators section applied to labour contracts of workers previously employed by SEAH. According to Italy, the Handlers section provides for different conditions concerning leave (20 instead of 22 days per year), duration of work (7h30 minutes a day instead of 7h15 minutes a day) and remuneration and allowances (elimination of 6 days' remuneration),
  - different organisation of salary rights, e.g. the non-application by Airport Handling of certain headings of the corporate contract supplementing the national collective labour agreement, which SEAH used to apply to its employees,
  - different organisation of employees (e.g. [...] (\*)).

<sup>(7)</sup> Law No 223 of 23 July 1991 on the rules relating to the lay-off fund, laid-off workers' mobility, unemployment benefits, the implementation of EU directives, job placement and other provisions relating to the labour market (GURI No 175 of 27 July 1991).

(\*) Business secret.

(33) According to Italy, as a result:

- Airport Handling's total labour cost decreased by 30 % compared to SEAH's total labour cost,
- the weight of the costs of Airport Handling's supplementary corporate contract decreased by [...] (\*) % when compared to SEAH's, with average salary cuts on an annual basis being [...] (\*) times the monthly salary.

(34) On 9 June 2014 SEAH's Extraordinary Shareholders Assembly approved the winding up of the company and its placement into voluntary liquidation, establishing the effective winding-up date as being 1 July 2014 <sup>(8)</sup>.

(35) A liquidator was appointed and tasked to sell the company's assets, pay off creditors and prepare the final liquidation balance sheet and report.

(36) The trade union organisations had conditioned the entry into force of the agreements of 4 June 2014 on the positive result of a referendum amongst SEAH employees. That referendum was held between 11 and 13 June 2014. In that referendum, the agreement of 4 June 2014 was rejected.

(37) Therefore, on 1 July 2014, SEAH's Shareholders Assembly decided the prolongation to 31 August 2014 of the deadline for SEAH's cessation of activities, empowering the liquidator (who had assumed his role on 1 July 2014) to provisionally manage the company until that date, and, on expiry of that term, to proceed to the disposal of SEAH's assets and the cessation of its activity.

(38) In order to overcome the negative vote of the referendum of 14 June 2014, the trade union organisations on 4 July 2014 proposed certain clarifications on points stipulated under the June 4, 2014 agreement, such as that additional days of work had to be spread evenly throughout the year, that reference to the 'effectiveness of the working hours' meant that at least 7,5 hours per day, per 5-day working weeks, had to be worked, and that workers had the possibility to select, between two options, how to work during certain festivities which were no longer paid under the new agreement. On 7 July 2014 Airport Handling endorsed those proposals. On 15 July 2014, Airport Handling signed a supplementary agreement which confirmed the validity of the agreement of 4 June 2014 and included the clarifications requested by the trade union organisations. That new agreement however did not introduce any material alterations as compared to the previously rejected agreement of 4 June 2014.

(39) In August 2014, SEAH proceeded to the dismissal of its entire workforce. At the same time, Airport Handling started to recruit, amongst former workers of SEAH, those workers which it considered essential to its activities. Airport Handling also contacted Adecco, a service provider in the field of temporary work, for the procurement of temporary workers.

(40) SEAH ceased operations as of 1 September 2014. On that day, Airport Handling started operations at Milan airports. As of 1 September 2014, Airport Handling had [...] (\*) employees ([...] (\*) FTE), thus employing [...] (\*) % of the workers employed by SEAH as of 22 April 2014, date on which SEAH initiated official proceedings for the collective dismissal of its employees. In addition, Airport Handling used [...] (\*) interim-workers ([...] (\*) FTE) [...] (\*).

## 2.2. Contract with the air carriers

(41) By letter of 22 April 2014, SEAH informed air carriers, suppliers and other interested parties, that it would cease operations as of 1 July 2014 and that therefore, on that date, it would cease providing ground handling services at Milan Airports.

(\*) Business secret.

(<sup>8</sup>) Voluntary liquidation is essentially similar to winding up by the Court, save for the fact that it falls to the shareholders in general meeting, and not to the Court, to take the decision to wind up the company, appoint the liquidators and determine their powers. Only where a majority of the shareholders cannot be assembled must the company apply to the court for a declaration putting it into liquidation. The Court then designates the liquidators in accordance with the company's articles of association or pursuant to the decision of the shareholders in general meeting, unless it is clear that disagreement between the shareholders will prevent them from taking a decision in a general meeting, in which case the court itself appoints a liquidator.

- (42) Following the above communication, ten airlines decided to entrust ground handling services at Milan airports to providers other than SEAH and Airport Handling.
- (43) At the same time, Airport Handling was selected as ground handler service provider by 19 airlines operating at Milan airports based on open tenders. Other airlines selected Airport Handling based on competitive dialogue procedures. According to Italy, the selection of the service provider is normally based on the assessment of certain factors such as price, financial soundness of the provider, availability of efficient equipment, existence of a network, track record, experience and competences of the operator.

**2.3. Creation of Airport Handling and transfer of SEA's participation to the Milan Airport Handling Trust; capitalisation of Airport Handling**

- (44) Airport Handling was incorporated on 9 September 2013 as a limited liability company with a share capital of EUR 10 000.
- (45) On 10 March 2014, SEA's Board of Directors decided to increase the capital of Airport Handling by up to EUR 2,5 million, in order for Airport Handling to meet the requirements for certification as ground handler by the National Civil Aviation Authority (ENAC). Pursuant to the national rules in force, ENAC grants licences to ground handling services providers that meet the following requirements<sup>(9)</sup>:
- capital of at least one fourth of the likely turnover,
  - operating resources and organisational capacity adequate to carry out the services,
  - certificate proving that all obligations arising from labour and safety laws are complied with.
- (46) On 30 June 2014, SEA's Board of Directors decided the setting-up of the Milan Airport Handling Trust ('the Trust') and the increase in Airport Handling's capital by up to EUR 25 million.
- (47) The Trust was incorporated on 30 June 2014 and the Trust Deed was signed on the same day. According to its deed of incorporation, the Trust: (i) acts as sole shareholder of Airport Handling pending the sale of a minority shareholding in the company; and (ii) ensures that Airport Handling operates in economic discontinuity with SEA Handling.
- (48) According to the Trust Deed, the Trust was set up for the specific purposes to:
- confirm and verify the absence of economic continuity of Airport Handling with SEA and SEAH, ensured notably by managing Airport Handling independently of SEA,
  - allow the entry of independent third-party investors in the share capital of Airport Handling for a percentage shareholding of not less than 30 %.
- (49) The Trust Deed states that in order to implement this mission, the Trust exercises its power to:
- appoint directors, statutory auditors and other corporate bodies, choosing among eligible candidates that have no operational responsibility or employment relationship with SEA or SEAH,
  - ask for a report from the directors on the events of economic discontinuity which occurred prior to the incorporation of the Trust, and
  - ensure that appropriate procedures are in place to avoid that the commercial information of SEA unduly benefits Airport Handling in acquiring or maintaining contracts with airlines, compared to competitors, with the observance of the limitations contained in Annex A of the Trust Deed.

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<sup>(9)</sup> Airport Handling filed the request for the licence for the provision of ground handling services at Linate and Malpensa on 21 January 2014. ENAC awarded the licence to Airport Handling on 17 April 2014.

- (50) In particular, according to the Trust Deed, the trustee shall verify that, since the incorporation of Airport Handling, no legal acts have been put in place which result in the transfer by SEAH to Airport Handling of any assets, moveable and immoveable property, contracts with airlines and/or with handling services suppliers, intellectual property rights or unilateral undertakings with economic effects (i.e. real or personal guarantees) other than those provided under the Trust Deed.
- (51) In this sense, the Trust Deed excludes from the scope of the controlling power of the trustee:
- the fact that Airport Handling was incorporated and capitalised by SEA,
  - the fact that Airport Handling had taken over personnel from SEAH,
  - the fact that Airport Handling leases its assets and handling equipment from SEAH under a lease contract due to expire on 28 February 2015.
- (52) In addition, the Trust Deed also provides that the trustee is required to verify that:
- with the exception of the powers granted to SEA under the Trust Deed, Airport Handling's operational management is separate from SEA's management, under the control and oversight of the Board of Directors, whose members are appointed autonomously by the trustee,
  - before or after the creation of the Trust, SEA and Airport Handling do not put in place legal deeds resulting in the transfer by SEA of assets, moveable or immoveable property, contracts, unilateral undertakings with economic effect (i.e. real or personal guarantees) or intellectual property rights, other than those provided in the Trust Deed or requested by SEA in its capacity as concession holder of the Milan airports, and
  - Airport Handling puts in place procedures and controls to avoid that it can benefit from SEA's proprietary commercial information which could unduly benefit Airport Handling in acquiring or maintaining contracts with airlines, such as information on the contracts entered into in the past by SEAH or requirements of the airlines communicated to SEA in its capacity as airport operator.
- (53) According to the Trust Deed, it is however not the task of the trustee to verify or assess the circumstances that:
- representatives of SEA participated to the negotiations with the employees to be assumed by Airport Handling,
  - Airport Handling benefits from outsourced SEA-employees, including its general manager, which was to be maintained for the duration of the Trust,
  - certain centralised services would continue to be provided by SEA,
  - SEA may verify quality service levels in order to comply with its duties as airport operator of the Milan airports infrastructure,
  - decisions on the future funding of Airport Handling are entirely left to SEA, without prejudice to the rights of the Board of Directors of Airport Handling to take decisions in order to implement the business plan.
- (54) As far as the entry of a third party investor in Airport Handling is concerned, the Trust Deed provides that the initial phase of the procedure for the opening of Airport Handling's capital to 'eligible shareholders' (namely physical or legal persons or entities which, if resident in Italy, do not qualify as public entities or companies controlled by the Italian state, with the exception of listed companies) was to be managed by SEA and was supposed to be completed by 28 February 2015.
- (55) The Trust Deed stipulates that if by 1 March 2015 SEA is still a shareholder of Airport Handling for more than [...] (\*) %, the trustee shall start searching for investors which must comply with conditions previously communicated to it by SEA through a deed which must be notified to the lawyer acting as Trust Guardian, and subject to revision by SEA in due time. In any other case, the trustee may not alienate the shareholding in Airport Handling without SEA's consent.

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(\*) Business secret.

- (56) The Trust Deed further stipulates that after the sale of [...] (\*) % of SEA's shareholding in Airport Handling, SEA shall search for private investors willing to take on further participations in Airport Handling's capital, taking into account social considerations and the obligation on SEA to continue ensuring the provision of ground handling services at Milan airports.
- (57) On 26 August 2014 Airport Handling's Board of Directors approved an Addendum to the Trust Deed. The Addendum laid down that Airport Handling would issue 20 000 participating equity instruments — SFPs (*strumenti finanziari partecipativi*) pursuant to Article 2346 paragraph 6 of the Italian Civil Code <sup>(10)</sup>, with a nominal value of EUR 1 000 each, to be proposed to SEA. The Addendum was signed on the following day.
- (58) On 27 August 2014, Airport Handling's Shareholders Assembly <sup>(11)</sup> decided to increase Airport Handling's capital from EUR 1,3 million to EUR 5 million, subscribed and paid-in by SEA.
- (59) On the same day SEA transferred the entire holding of Airport Handling to the Trust and appointed a trustee, namely Crowe Horwath Trustee Services ('the Trustee') to manage Airport Handling.
- (60) On 27 August 2014 the Trustee appointed a new Board of Directors of Airport Handling. SEA [...] (\*) senior managers [...] (\*), out of five, [...] (\*). According to Italy, both perform their activities in the exclusive interest of Airport Handling on the basis of a secondment contract from parent company SEA.
- (61) Still on 27 August 2014, after the conferral of SEA's participation in the Trust, Airport Handling's Shareholders Assembly <sup>(12)</sup> decided the conversion of Airport Handling from a limited liability company (SRL) to a joint stock company (SpA) and the issuance of the 20 000 SFPs, offered for subscription to SEA at a price of EUR 1 000 each. The SFPs were subscribed and paid in by SEA the following day, thereby increasing Airport Handling's capital to EUR 25 million in total (EUR 5 million share capital and EUR 20 million in the form of SFPs).

#### 2.4. The attempted sale of SEAH's assets; the lease contract with Airport Handling

- (62) On 12 November 2014, the liquidator issued a call for expression of interest in the purchase of SEAH's assets; the call was published in the Supplement to the *Official Journal of the European Union*:

'Italy — Milan: Sale of equipment comprising, for information only: Cargo loaders, transporters, lifting platforms, pallet jack, mobile/mobile/conveyor belts, towed/BAE towed stairs, electric/diesel/hybrid tractors, barrels, generators, air conditioner units, compressors, baggage/goods trolleys 2014/5 218-385934 — Call for expression of interest' <sup>(13)</sup>. For the purposes of the call for expression of interest, the assets were grouped in nine lots.

- (63) SEAH commissioned *Istituto del Marchio di Qualità SpA* ('IMQ') to establish a comprehensive valuation of SEAH's assets and on that base to set the fee for the lease of SEAH's ground handling equipment as well as the price for the sale of the assets. IMQ delivered two reports: On 25 June 2014 as regards the lease fee; on 16 October 2014 as regards the division of assets in lots for sale. According to IMQ, the estimated value of the assets shall be understood as the likely market value that assets of similar technical characteristics, performance, state of repair and storage, use and age would have in monetary terms.
- (64) The closing date for the submission of bids for the nine lots for sale was set for 26 January 2015.
- (65) IMQ proposed as a fee for the lease of SEAH's ground handling equipment EUR [...] (\*) per semester (EUR [...] (\*) per year).

(\*) Business secret.

<sup>(10)</sup> The SFPs are equity-based instruments, therefore they are not subject to a repayment obligation of the amount contributed by SEA. They do not carry administrative rights but are similar to shares in terms of equity rights. In particular, these instruments provide profit-sharing and reserve rights and rights to other equity items, including in case of winding up of the company.

<sup>(11)</sup> On that date SEA was still the sole shareholder of Airport Handling.

<sup>(12)</sup> On that date the Trust was the sole shareholder of Airport Handling.

<sup>(13)</sup> Contract notice No 2014/S218-385934 of 12.11.2014 in the 'tenders electronic daily' (TED) supplement to the OJ: <http://ted.europa.eu/udl?uri=TED:NOTICE:385934-2014:TEXT:EN:HTML&src=0>



- (66) On 1 September 2014, SEAH and Airport Handling entered into a lease contract by which Airport Handling would lease SEAH's ground handling equipment at a lease fee of EUR [...] (\*), i.e. the amount proposed by IMQ. The lease contract was to expire on 31 August 2015.
- (67) In order to confirm the correctness of the valuation process carried out by IMQ, Airport Handling and SEAH on 1 September 2014 contracted a second independent expert, *Ernst & Young* financial-business Advisors SpA ('E&Y'), to revalue the level of the lease fee. In this context, SEAH and Airport Handling had contractually agreed that, should the second valuation conclude that the market value deviated by at least [...] (\*) % from the level set by IMQ, the contractual fee would be adjusted accordingly with retroactive effect.
- (68) On 15 October 2014, E&Y delivered its report and set the market rate for the lease of SEAH's assets at EUR [...] (\*) per year. On 25 October 2014, Airport Handling and SEAH agreed to broaden the analysis carried out by E&Y and entrusted the latter with the task of analysing the actual operating conditions and physical state of the assets (E&Y had initially based its assessment on a physical check of the assets on a sample basis). This analysis revealed that a number of machinery and equipment were not suitable for use taking into account the short duration of the lease and the high costs of necessary repairs in view of the obsolete nature of many pieces of equipment. According to the Trust, at the date when it submitted its comments on the 2014 opening decision, SEAH and Airport Handling were contemplating a solution to avoid litigation. Consequently, the lease fee was retroactively adjusted to EUR [...] (\*) per annum.
- (69) On November 26, 2014, Airport Handling's Board of Directors decided to start the public tender for the purchase of new equipment on the market. On 11 February 2015, as a result of that tender procedure, Airport Handling replaced roughly [...] (\*) % of its equipment by assets bought on the market, costing approximately EUR [...] (\*). According to the Italian authorities, Airport Handling financed that purchase exclusively through its own resources.
- (70) On 9 February 2015, the tender for the sale of SEAH's assets was declared unsuccessful, as no bidder had expressed interest in the purchase of any of the lots.
- (71) On 26 February 2015, SEAH received a first notice from Airport Handling, whereby the latter expressed its interest in the purchase of 6 of the 9 tender lots. On 3 June 2015, Airport Handling renewed its notice of interest. On 18 September, 2015, [...] (\*) were sold to Airport Handling at the price indicated in the initial tender procedure, being EUR [...] (\*).

## 2.5. The sale of a minority shareholding in Airport Handling

- (72) As laid down by the Trust Deed, the Trustee initiated the procedure for the sale of a minority share of Airport Handling's capital.
- (73) For that purpose, the Trustee on 27 January 2015 appointed the Italian branch of *BNP Paribas* as financial advisor in relation to the sale of 'at least 30 %' of the share capital of Airport Handling to third party investors. The Italian authorities pointed out that BNP Paribas in its capacity of financial advisor organised the sale process in complete independence. BNP Paribas scheduled the following sale phases: 1. Preliminary screening; 2. Organisation of the transaction; 3. Closing of the transaction.
- (74) Five interested investors submitted non-binding offers for the purchase of a [...] (\*)-[...] (\*) % stake in Airport Handling: [...] (\*), [...] (\*), [...] (\*), [...] (\*), and [...] (\*).
- (75) According to the draft sale contract provided by Italy, in order to allow the investor to have operational control of Airport Handling, the Trustee undertakes, for the entire period until the expiry of the standstill period<sup>(14)</sup>, to grant the investor the right to appoint the majority, i.e. three out of five members, of the Board of Directors, among which the CEO of the company, whilst the Chairman of the Board of the Directors shall be appointed by the shareholder's meeting.

(\*) Business secret.

<sup>(14)</sup> 'Long-stop date' 18 calendar months from the execution and exchange of all documents and the performance and consummation of all obligations, arising from the sale contract.

- (76) On 21 September 2015, the Trustee signed a binding Framework Investment agreement with D'Nata, for the sale of [...] (\*) % of Airport Handling shares. Pursuant to that agreement, the following arrangements apply:
- (77) Initial investment: After merger control authorities have cleared the acquisition, D'Nata acquires [...] (\*) % of Airport Handling's shares with the right to appoint the majority of the board of directors and the CEO. The objective of that arrangement was that D'Nata, despite being a minority shareholder, would effectively be in the position of a controlling shareholder.
- (78) Additional investment: Under a call-option arrangement, D'Nata is entitled to acquire a further [...] (\*) % stake in Airport Handling. A specific 'State Aid Put-Option' stipulates that D'Nata will have the right to sell back its [...] (\*) % stake for the adjusted initial acquisition price, if either the Commission adopts a negative decision, or if 18 months after completion of the initial investment, the State aid procedure is still pending.
- (79) On 8 February 2016, the Italian Competition Authority, *Autorità Garante della Concorrenza e del Mercato*, cleared the acquisition of the sole control of Airport Handling by D'Nata under Italian merger control law. The Trustee informed the Commission that subsequent to that clearance, it would proceed with D'Nata to closing of the investment on 8 March 2016.

## 2.6. The business plan 2014-2017

### 2.6.1. The business plan of 14 November 2013

- (80) During the preliminary investigation phase, Italy had provided the business plan of Airport Handling for the period 2014-2017, dated 14 November 2013 ('the business plan of November 2013'), to evidence that SEA's investment in the capital of Airport Handling complied with the market economy investor principle. The main elements of that plan are summarised below:
- (81) The business plan focuses on ramp <sup>(15)</sup> and passenger <sup>(16)</sup> services, which represent the main part of Airport Handling's business. The company's overall market share at both Malpensa and Linate airports was expected to be [50-70] (\*) % and [50-70] (\*) % respectively in the second semester of 2014 and to increase to [60-80] (\*) % and [60-80] (\*) % respectively by 2017.
- (82) The projections developed in the plan depict increasing operating revenues on account of a forecasted increasing market share. Total revenue was assumed to increase from EUR [...] (\*) for the second half of 2014 to EUR [...] (\*) in 2017, based on an assumption of an [...] (\*)- [...] (\*) % p.a. increase in passenger traffic for the period 2014-2017.
- (83) Average staff numbers were projected to increase from [...] (\*) FTE in 2014 to [...] (\*) FTE in 2017 due to an increase in the number of contracts with fixed duration. Labour costs were estimated to be around [...] (\*) % of total operating costs. SEA would increase productivity by 12 % in the reference period, using three main drivers:
- efficiency gains in the start-up of Airport Handling (adjusting the share of fixed duration and part time contracts; better definition of the work programme <sup>2</sup>; adjusting the organisational structure to use resources effectively by restricting use of seasonal workers; maximising capacity of existing workforce),
  - economies of scale resulting from the increase in traffic,
  - structural adjustments in the business processes (better work planning and organisation; investments in technical solutions to enable partial or total automation of certain activities; linking workforce expenditure against business outputs and outcomes).

(\*) Business secret.

<sup>(15)</sup> Air-side services, including the boarding/disembarking of passengers, luggage and cargo, aircraft balancing, and luggage distribution.

<sup>(16)</sup> Services provided land-side.



- (84) Initial start-up costs for the renegotiation of client and supplier contracts, workforce agreements, recruitment, writing of organisational/administrative/operational procedures, legal costs, bank charges, consultancy and purchase of small items and sundry supplies were expected to amount to EUR [...] (\*).
- (85) Operational start-up costs, i.e. capital expenditure required for Airport Handling to become operational were estimated at EUR [...] (\*) for new equipment. However, for the purpose of the business plan of November 2013, it was assumed that Airport Handling would acquire used ground handling equipment valued at EUR [...] (\*).
- (86) In order to cover the outlay for all estimated start-up costs, the business plan requires a capital increase of EUR [...] (\*) in [...] (\*).

#### 2.6.2. *The business plan of 6 August 2014*

- (87) Further in the course of the investigation, Italy submitted a revised business plan for the period 2014-2017, dated 6 August 2014 ('the business plan of August 2014'), as approved by Airport Handling's Board on 26 August 2014. According to information provided by Italy, that revision was already being finalised in the month of July 2014. That plan's main assumptions are summarised below:
- (88) Market share: As regards [...] (\*), the business plan of August 2014 assumes slightly lower growth than the previous plan, with a market share of [70-80] (\*) % in [...] (\*), based on updated forecasted levels of traffic of [...] (\*), and the [...] (\*).
- (89) Prices: Unit prices (per aircraft movement) are higher than the prices assumed in the business plan of November 2013, and are constant in nominal terms over the entire period 2014-2017.
- (90) Personnel costs: Estimated personnel costs in the business plan of August 2014 are slightly higher than those assumed for the November-2013 Business Plan and are ranging between [...] (\*) and [...] (\*) % of operating costs. That increase is due to the [...] (\*).
- (91) Other costs taken into account were external costs, depreciation and provisions, which together accounted for about [...] (\*) % of total operating costs, and regulated costs (about [...] (\*) %) of services which SEA provides to Airport Handling for the use of common shared infrastructures of the airport (notably [...] (\*)). The August-2014 business plan estimated that EUR [...] (\*) would have to be invested for the purchase of equipment, of which [...] (\*) % for the purchase of new equipment and [...] (\*) % for the purchase of second-hand vehicles on the market. These figures were based on bids by potential suppliers received by airport handling in March 2014.
- (92) Like the business plan of November 2013, the business plan of August 2014 shows a reduction in operating costs as compared to SEAH's cost structure, achieved in essence through efficiency increase and personnel reduction.

#### 2.6.3. *Economic valuations of the business plan*

##### 2.6.3.1. *The BCG report*

- (93) Airport Handling commissioned *Boston Consulting Group* with a preliminary independent evaluation of the Business Plan 2014-2017 ('the BCG-Report'). BCG delivered its report on 14 October 2014.
- (94) The BCG-Report is based on the business plan approved on 26 August 2014, on the business plan drawn up in November 2013, on BCG's own industrial experience and know-how as well as on public data relating to market developments and the main handling operators.
- (95) In summary, BCG evaluated the following assumptions underlying the business plan: Revenue perspectives (based on assumed traffic growth potential, assumed growth of volumes handled by Airport Handling); personnel costs (based on costs per FTE; assumed productivity gains); planned investments (total amount EUR [...] (\*)).

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(\*) Business secret.

- (96) BCG summarised its findings as follows:
- (97) In essence, the assumptions concerning traffic volumes at the level of SEA appear to be sustainable and consistent with provisions made by major organisations, in particular IATA and Eurocontrol. BCG however noted that the intention to maintain a constant mix of carriers, consisting of low-cost carriers (LCCs) and so-called legacy carriers, would not be in line with historical development of the mix at the Malpensa terminal, where over the past 4 years the share of LCC would have increased by [...] (\*) percentage points. Moreover, a new national regulation (*Decreto Linate*) could lead to the relocation of some carriers from Malpensa to Linate.
- (98) The assumption on possible development of the volumes handled by Airport Handling seems broadly achievable because firstly, the agreements signed with new carriers at the date when BCG wrote the report would ensure a market share of [60-70] (\*) %; secondly, the [70-80] (\*) % target market share for 2017 would be sustainable in view of current competitive dynamics in the sector as well as of SEAH's historical [70-80] (\*) % market share.
- (99) According to BCG, assumptions on revenue from services to the airport manager seemed to be broadly pursued in ongoing negotiations with SEA. BCG however could not assess expected revenues in the last year of the plan (2017), due to the assumed 2-year contract duration.
- (100) Assumptions on average personnel unit cost increases of [...] (\*) % per year from 2014 to 2017 would be broadly aligned with the agreement signed between the Italian Association of Airport Operators, Assaeroporti, and trade unions in October 2014.
- (101) The [...] (\*) % improvement in resource productivity would appear to be broadly sustainable firstly, because [...] (\*) % productivity gain had already been achieved when the report was written and secondly, because the remaining [...] (\*) % seem reasonable in light of current organisational levers and technical stage of implementation.
- (102) BCG also found that the EUR [...] (\*) budget for investments appears broadly consistent with the purchase of a new fleet mainly consisting of new vehicles (95 %), as shown by the detailed purchase values indicated in the tenders received by Airport Handling at the date of March 2014.
- (103) BCG found that in summary, the profit margin foreseen in the business plan to 2017 ([...] (\*) %, EUR [...] (\*) ) would appear broadly in line with, or slightly below the average profitability of a significant sample of other European companies operating in the private and public sector (based on a comparison with *Portway*, *Acciona*, *Aviapartner*, *Fraport* and *ATA-Handling*). BCG however pointed out that the actual evolution of the traffic mix as well as possible impacts of a new regulation concerning Linate (*Decreto Linate*) might lead to less traffic at Malpensa.

#### 2.6.3.2. The Brattle Report

- (104) SEA commissioned *Brattle Group* to analyse SEA's equity injection in Airport Handling, and in particular to analyse whether that investment complied with the market economy investor principle. Brattle delivered its report on 30 March 2015.
- (105) According to the Brattle Report, the analysis is based on the information that was known to SEA at the time the decision to invest in Airport Handling was taken, as well as on public data concerning the competitive position of SEA. According to the Brattle report, the assumptions in the business plan of November 2013 are the most relevant for the market economy investor test, since they represent the basis on which SEA carried out the investment <sup>(17)</sup>.
- (106) According to the Brattle Report, the doubt spelt out by the Commission in the 2014 opening decision, namely that Airport Handling's business plan was overly optimistic, can be dispelled, given that key assumptions of the business plan have been realised in practice. In particular, Airport Handling's market share in 2014 exceeded the forecasts of the business plan of November 2013.

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(\*) Business secret.

<sup>(17)</sup> Brattle Report, p. 1, paragraph 1 and p. 7, paragraph 34.

- (107) According to the Brattle Report, unit prices (prices charged by Airport Handling for each aircraft movement) shown in the Business Plan of August 2014 are based on contracts already signed with the airlines, on average being EUR [...] (\*), which is higher than the price assumed in the Business Plan of November 2013, ranging from EUR [...] (\*) in 2014 to EUR [...] (\*) in 2017. This led the experts to the following conclusions: First, market prices in the Business Plan of August 2014 are closer to the actual process achieved, because they were based on signed contracts. Second, that the Business Plan of November 2013, on which SEA based its investment decision, actually underestimated the market price that Airport Handling could charge. Third, this confirms that market prices in the Business Plan of November 2013 were not only reasonable but in fact were too low.
- (108) Lastly, the experts noted that market prices that Airport Handling negotiated with the airlines were lower than the prices that SEAH was actually charging.
- (109) The experts agree that the initial market share for Airport Handling, as anticipated in the business plan of November 2013, may seem high for a new entrant. They however assume that a market economy investor would have known that the demise of SEAH would create an unusual situation, whereby a large number of the handling contracts at the SEA airports were 'up for grabs'. The experts conclude that Airport Handling would have therefore taken advantage of this situation in the same way the other operators at the Milan airports could have done. In addition, according to the report, Airport Handling's anticipated market share would be typical for large Italian airports, where the largest handler normally holds a share of around 70 % of the market. In addition, the experts had established that Airport Handling is the only handler with sufficient assets and equipment to guarantee 24-hour full service, which would be a key advantage with respect to competitors.
- (110) The experts also found that lower personnel costs was one of the key reasons why Airport Handling expected to be profitable although SEAH had been loss making. The experts considered such assumption as reasonable, since Airport Handling was negotiating new labour contracts where workers agreed to work 20 additional days per year relative to the previous SEAH contracts.
- (111) Moreover, according to the Brattle report, although the business plan of November 2013 slightly underestimated labour costs, the business plan of August 2014 showed FTE costs of EUR [...] (\*) /hour, [...] (\*).
- (112) In the experts' view, when investing in Airport Handling, a market economy investor would have expected to earn a rate of return (Internal Rate of Return — IRR) equal to or greater than the Weighted Average Cost of Capital (WACC) according to standard financial theory. In this case the calculations confirmed that in all scenarios the expected IRR of the project exceeds the WACC and therefore a private investor would have expected to earn profit from its investment in Airport Handling.
- (113) The consultant also noted that when SEA made its decision to set up Airport Handling in 2013, the private equity fund F2i owned 44,31 % of the company. F2i appoints two members to SEA's Board of Directors and according to the Brattle report neither Board member had voted against the proposal for SEA to invest in Airport Handling, which would evidence that the investment was expected to be profitable and was therefore consistent with the market economy investor principle.
- (114) Further according to the Brattle report, a market economy investor would have considered the probability that the Commission finds economic continuity between SEAH and Airport Handling, and therefore requires the latter to repay the aid found incompatible in the recovery decision, to be relatively low. This is because SEA undertook measures to ring-fence Airport Handling and to prevent economic continuity, such as the setting up of the Trust. According to Brattle's financial estimations on the November 2013 business plan, as long as the chance of a finding of economic continuity was less than [...] (\*) % (assuming the cost of capital estimate proposed by SEA) or less than [...] (\*) % (assuming the cost of capital estimate proposed by Brattle), then SEA's investment with AH was consistent with the market economy investor principle. Brattle found it reasonable to assume that given the context and in particular the notification to the Commission, a market economy investor would judge such probability to be less than [...] (\*) %, and would therefore invest in Airport Handling on purely economic terms.

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(\*) Business secret.

### 2.7. Announced reduction of the scope of Airport Handling's economic activities

- (115) Italy proposed to further reduce the scope of the activities currently carried out by Airport Handling in comparison with those carried out in the past by SEAH. In particular relating to [...] (\*).
- (116) SEA currently provides [...] (\*), pursuant to a new and different agreement expiring on 31 December 2018.
- (117) SEA declared that it was willing to terminate, by 31 December 2016 at the very latest, the agreement relating to [...] (\*), thereby taking it away from Airport Handling, and also to hire around [...] (\*) Airport Handling employees currently [...] (\*). As a result of this change, the turnover of Airport Handling, being in the order of EUR [...] (\*) in its first year of activity, would be reduced by around EUR [...] (\*).

## 3. GROUNDS FOR INITIATING THE FORMAL INVESTIGATION PROCEDURE

### 3.1. On economic continuity and transfer of the recovery obligation

- (118) In the 2014 opening decision, the Commission took the preliminary view that in this case, the criteria identified by the Court of Justice to establish if a company other than the initial aid beneficiary can be held responsible to pay back the aid were largely fulfilled. In particular:
- even if the staff would be re-employed by Airport Handling, according to the agreement signed by SEA, SEAH and the trade unions on 4 November 2013, it appeared that former employees of SEAH were being guaranteed the rights acquired under the previous contracts with SEAH,
  - according to information available to the Commission at that stage, SEA and Airport Handling, even before the expiry of the main contracts with the airlines, had engaged in joint marketing efforts aiming to reassure airlines operating at the airport that SEA would continue the ground handling business through its new subsidiary Airport Handling after SEAH's liquidation has been completed,
  - the equipment required to provide ground handling services would be leased by Airport Handling from SEAH, pending the (possible) sale of such assets to third parties in the open tender. The Commission considered that Italy's argument that such assets would be leased by Airport Handling at the market price could be accepted, to the extent the value of the assets in question was assessed by an expert appointed by the parent company SEA and the eventual sale of those assets was not certain,
  - the new ground handling business would have the same owner as SEAH, namely SEA. The Commission considered Italy's proposal to tender out 20 % of the capital of the new ground handling provider insufficient to guarantee discontinuity from SEAH since first, the proposal was only limited to a minority shareholding and second, no guarantees were provided that that would actually happen. Moreover, this opening of the capital would only occur after the entry of Airport Handling on the market,
  - the timing — after adoption of the recovery decision — and economic logic of the creation of the new ground handling provider suggested that the plan pre-notified by Italy constitutes a mechanism to circumvent recovery.
- (119) The Commission therefore preliminarily concluded that the object and effect of the creation of the new company appeared to be the circumvention of the obligation to repay the aid and that Airport Handling was the successor of SEAH. On this basis the Commission took the preliminary view that Airport Handling could be held liable to pay back the aid granted to SEAH in the past and found incompatible in the 2012 recovery decision.

### 3.2. On the capital injection

- (120) The Commission took the preliminary view that SEA's decisions to set up Airport Handling and to inject equity into it was imputable to the State: Firstly, the Commission noted that the Municipality of Milan held a majority stake of 54,81 % in SEA and that therefore the State should be regarded as having an influence on SEA's decision-making processes and being involved in the decisions taken by the company. Secondly, the Commission referred to certain statements made by representatives of Italian authorities in relation to the issue, which seemed to indicate that the creation of Airport Handling was orchestrated by the Italian authorities, notably in order to protect employment at Milan airports.

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(\*) Business secret.

- (121) In addition, since SEA appeared to be controlled by the Italian authorities, the Commission reached the preliminary conclusion that the capital injection, which was financed by SEA, involved State resources.
- (122) The Commission also took the preliminary view that SEA did not act as a market economy investor when performing the injection in Airport Handling's capital.
- (123) Firstly, the Commission expressed doubts that a private investor would have provided capital to Airport Handling at the time when SEA did, since the Commission's services had already informed the Italian authorities that the intended setting-up of a new ground handling provider would likely lead to economic continuity and thus liability of the new company to reimburse the aid found incompatible in the 2012 recovery decision. The business plan of November 2013 however did not take the risk of a transfer of the recovery liability from SEAH to Airport Handling into account.
- (124) Secondly, the Commission expressed doubts as to whether the business plan underpinning SEA's decision to invest in Airport Handling relied on sufficiently robust assumptions.
- (125) The Commission therefore considered that SEA's investment of EUR 25 million into Airport Handling does not appear to be based on economic evaluations comparable to those which, in the relevant circumstances, a rational private investor in a similar situation would have had carried out, before making such investments, in order to determine its future profitability. On that basis, the Commission took the preliminary view that the EUR 25 million capital injection amounted to State aid in favour of Airport Handling.

#### 4. COMMENTS FROM ITALY

##### 4.1. On economic continuity

- (126) Italy recalled that according to settled case-law, the recovery of illegal and incompatible State aid aims to eliminate the distortion of competition caused by the competitive advantage conferred by the unlawful aid. Consequently, the unlawful and incompatible aid must be recovered from the undertaking that actually benefited from it. The recovery obligation may only be extended to companies other than the original beneficiary of the aid if the following cumulative conditions are fulfilled:
  - that the company was found to continue the activity of the recipient undertaking, and
  - that the company retains the actual benefit of the competitive advantage connected with the receipt of the aid.
- (127) In Italy's view, in this case the transfer of the competitive advantage linked to the aid granted to SEAH can be excluded from the outset.
- (128) In particular, Italy notes that the alleged advantage granted to SEAH was defined by the Commission in recitals 219 *et seq.* of its recovery decision as corresponding to the compensation of SEAH's losses during the period 2002-2010. As indicated by the Commission, those losses had been generated by high personnel costs, which represent a significant share of the cost structure of a ground handling provider. Since the capital injections classified as State aid by the Commission served primarily to cover losses resulting from excessive personnel costs of SEAH, in Italy's view the competitive advantage which SEAH benefitted from would *ipso facto* be removed with its liquidation and exit from the market.
- (129) Italy also noted that even if a part — albeit small — of the competitive advantage linked to the aid granted to SEAH could be associated with the assets of the company, i.e. the assets used by SEAH to carry out its ground handling activity at Milan airports, those assets would however not be subject to transfer from SEAH to Airport Handling. Rather, they would be leased temporarily by the latter under market conditions pending their sale on the open market.
- (130) Italy further noted that, even if a transfer of competitive advantage from SEAH to Airport Handling effectively took place, it cannot be established in this case that Airport Handling *de facto* continues the economic activity of SEAH.
- (131) First, no transfer, *de facto* or *de jure*, of work contracts would have taken place between SEAH and Airport Handling. According to Italy, Airport Handling had only employed, under substantially new conditions, the staff strictly necessary for the performance of the ground handling activity. In addition, the new employment contracts were governed by a different regime (the *Handler* Section rather than the *Airport operators* Section of the national collective labour contract (*Contratto Collettivo Nazionale di Lavoro* (CCNL)) and association of employees (*Assohandlers* instead of *Assoaeroporti*). On that basis, Italy pointed out that Airport Handling would achieve a reduction of personnel costs, with a significant increase in productivity.



- (132) Italy also added that the Commission's assertion in the 2014 opening decision that former employees of SEAH were guaranteed the rights acquired in respect of previous contracts with SEAH would not be supported by factual evidence. According to Italy the agreement of 4 November 2013 did not provide for any guarantee to the benefit of former employees of SEAH on acquired rights, and clearly laid down the need for new employment contracts to be based on new conditions.
- (133) Nor would there be any transfer of the contracts between SEAH and the air carriers operating at Milan airports to Airport Handling. According to Italy, upon the termination of contracts between SEAH and air carriers, Airport Handling negotiated *ex novo* the contracts with the air carriers operating at Milan airports. In addition, according to Italy, SEA and Airport Handling did not engage in common marketing efforts to this end, contrary to the Commission's allegations in the 2014 opening decision which according to Italy is supported by no factual evidence. This circumstance would in any event be irrelevant to the assessment of economic continuity between SEAH and Airport Handling. In that respect, Italy recalled that the current portfolio of clients of Airport Handling is different from that of SEAH. Rather, Airport Handling would have concluded certain contracts with air carriers that were not already customers of SEAH, whilst at the same time failed to retain some of the former customers of SEAH.
- (134) Italy stated that the fact that the business plan of Airport Handling provides for a market share [...] (\*) cannot, as such, be considered proof of economic continuity. Such market share should be assessed in the light of the objective pursued by Airport Handling of reaching viability in the medium term.
- (135) Italy also submitted that Airport Handling is not involved in the procedure for the sale of SEAH's assets and, therefore, there would be no transfer of assets between the two companies. Furthermore, in Italy's view the mere fact that the assets of the beneficiary of the aid are leased to a third undertaking cannot constitute sufficient evidence that the latter enjoyed the competitive advantage linked to the aid. In Italy's view, for this to constitute an indication of continuity, the lease of those assets must take place at a price below the market price. In this case, however, the lease price would have been determined by an independent company (IMQ).
- (136) Italy also recalled that SEA's shareholding differs significantly from the period when the alleged aid was granted to SEAH. While SEA was entirely State-owned in the period 2002-2010, a private investor, F2i, currently owns 44,31 % of its capital.
- (137) Furthermore, in Italy's view the setting-up of the Trust constitutes an additional guarantee of the absence of continuity between SEAH and Airport Handling. Indeed, as laid down by the Trust Deed, the activities of the Trustee should be instrumental in achieving the following objectives:
- ensure the independent management of SEA's participation in Airport Handling, assuming sole control over the company and thus ensuring the absence of any interest and/or information flow between Airport Handling and the SEA group, with particular reference to SEAH and handling activities previously carried out by the latter at Milan airports,
  - allow the entry into the capital of Airport Handling of new private investors not connected to the SEA group, as a first step not less than [...] (\*) %.
- (138) As a result of the transfer of 100 % of SEA's shareholding in Airport Handling to the Trust, the Trustee was entered in the business register as sole shareholder of the company. In this capacity, the Trustee has full and substantial control over SEA's participation in Airport Handling.
- (139) As sole shareholder of Airport Handling the Trustee must, *inter alia*:
- Exercise voting rights on the appointment of the managing bodies of Airport Handling independently and without any interference by SEA, and in such a way as to ensure that the members of those bodies do not have or have not had operational roles or dependence on SEA or SEAH. At the moment of the transfer of SEA's participation to the Trust, all members of the managing bodies of Airport Handling appointed by SEA handed in their resignation and were replaced by those appointed by the Trustee.

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(\*) Business secret.

- Monitor the economic discontinuity between SEAH and Airport Handling, requesting regular reports on the management of the company, the correct implementation of the business plan, the market share and development prospects.
- Ensure that procedures are in place to prevent that Airport Handling unduly benefits from information held by SEA in the acquisition or maintenance of contracts with air carriers or suppliers of goods or services.
- Verify that no sale transaction has taken place between SEAH and Airport Handling.

#### 4.2. On the capital injection

##### 4.2.1. On States resources and imputability

- (140) In Italy's view, SEA's status as a public undertaking is not sufficient to conclude that its resources qualify as State resources within the meaning of Article 107(1) of the Treaty. In that respect, Italy recalled that Airport Handling's financial resources are not in the possession or under the control of SEA, as its participation in Airport Handling is being managed by an independent body, the Trust, in total independence from SEA.
- (141) SEA would therefore not have the possibility to exercise typical majority-shareholder powers, namely, inter alia, the power to appoint the members of the managing bodies of the subsidiary and, therefore, to participate in a decisive manner to the management of the company.
- (142) According to Italy, the Commission cannot infer the imputability of the contested measures to the State by the mere fact that it is highly unlikely that those measures have been taken without any intervention by the State. According to Italy, the Commission is required to meet a high standard of proof. The measures at hand may be deemed imputable to the State only to the extent that the public shareholder of SEA played a key role in the adoption of the capital injection in favour of Airport Handling. In this sense, Italy considers it is important to note that Article 15 of SEA's by-laws provides that the deliberations relating, inter alia, to the increase in capital of subsidiaries must be taken with the favourable vote of at least six members out of seven, which requires the consent of administrators appointed by the private shareholder F2i. Consequently, irrespective of their ownership of the majority of the shares of SEA, the public shareholder cannot validly deliberate a capital increase without recourse to consent (or rather, the decisive vote) of directors appointed by the private shareholder.
- (143) Furthermore, Italy submitted that statements such as those made by the Minister for Infrastructure and Transport to reassure workers, quoted by the Commission in the opening decision, are fully in line with European and Italian practice and, therefore cannot be used as proof of the imputability to the State of the measure. The statements in question must be regarded as political declarations intended to mitigate adverse effects of unemployment.
- (144) On this basis, Italy considers that SEA's investment in Airport Handling is not imputable to the State and does not involve State resources and thus does not constitute State aid within the meaning of Article 107(1) of the Treaty.

##### 4.2.2. On the existence of an economic advantage

- (145) Italy recalled that the private shareholder contributes to capital injections in proportion to the share of the capital held at SEA, 44,31 %. According to Italy, the participation of the private investor F2i has a real economic impact and is significant. In this respect, Italy considers it important to note that according to the Commission's practice, private investment of around one third of the total investment was considered significant. In Italy's view this is in itself sufficient to exclude the State aid qualification within the meaning of Article 107(1) of the Treaty of the capital injection.
- (146) Second, Italy submits that the business plan of Airport Handling was evaluated by an independent expert who concluded that SEA's investment is justified from a purely economic point of view and therefore complies with the market economy investor principle.
- (147) On this basis Italy considers that the SEA's investment in Airport Handling was made in circumstances that would be acceptable to a private investor operating under normal market conditions and that, therefore, the measure does not constitute State aid within the meaning of Article 107(1) of the Treaty.

## 5. COMMENTS FROM INTERESTED PARTIES

- (148) The Commission received comments from SEAH (in liquidation), the Milan Airport Handling Trust and Airport Handling, SEA and an interested party which asked for anonymity.

### 5.1. Comments from the Milan Airport Handling Trust and Airport Handling (hereinafter referred to as 'the Trust')

#### 5.1.1. On the transfer of workforce

- (149) According to the Trust, Airport Handling has from the beginning of its activity structured its business model based on an economic logic different from that of SEAH, having as objective to operate on the market on a standalone basis and to reach viability without capital interventions from its shareholder.
- (150) In particular, Airport Handling always had considered that its business model should follow a modulation of the labour force organised according to criteria of efficiency and relevance. According to the Trust the handling activity is characterised by labour peaks at certain times of the year (e.g. summer). To address those rapid changes in demand, the service provider must respond flexibly, by means of recruiting temporary staff for those periods when the recruitment is justified in relation to the volume of work required.
- (151) While SEAH mostly used [...] (\*) ([...] (\*)), Airport Handling has adopted an approach based on [...] (\*) (e.g. [...] (\*)). Although this would require more complex training, management and coordination activities, it would in turn lead to higher flexibility and, consequently, a drop in operating costs. According to the Trust, this allowed for [...] (\*) (On 31 December 2014, Airport Handling had [...] (\*)).
- (152) The Trust submitted that there was no transfer of employment contracts between SEAH and Airport Handling, as demonstrated by the following circumstances:
- Airport Handling recruited its staff according to a plan defined in complete autonomy, according to expected traffic volumes and the specific organisation of work, thereby achieving a significant reduction of the workforce compared with SEAH,
  - former employees of SEAH were recruited by Airport Handling based on conditions that are formally and substantially different, according to a business model different from that of SEAH.
- (153) In addition, the Trust recalled the climate of strong opposition and the very difficult relations with the trade union organisations in June 2014. It is in the Trust's view evident that if indeed Airport Handling would have re-employed former SEAH employees based on the same conditions, those employees would have had no reason to complain. On the contrary, the strong resistance of trade unions to the agreement of June 2014 would evidence the fact that the workers were fully aware that their employment conditions had deteriorated.

#### 5.1.2. On the contracts with the air carriers

- (154) First, the Trust submitted that the contracts with the air carriers are by nature not transferable to third parties. Article 3.2 of the Standard Ground Handling Agreement expressly provides that, save in exceptional cases to be agreed with the ground handling companies, the carrier cannot assign tasks to third parties under the contract:
- 'The carrier shall not appoint any other person, company or organisation to provide the services which the handling company has agreed to provide by virtue of this Agreement, except in such special cases as shall be mutually agreed between the parties'.
- (155) The Trust provided several statements by airlines which had not carried out a tender procedure within the meaning of the public procurement procedures, in order to select Airport Handling as ground handler. Those airlines indicated that Airport Handling had however been selected on the basis of a competitive procedure based on benchmarking with other ground handling providers.
- (156) In addition, the Trust recalled that the duration of the handling agreement is set by the air carrier and often provides for the possibility for the latter to withdraw by notice. For instance the IATA standard contract provides that each party may terminate the contract with a 60 days' notice. Therefore, the contract with the air carrier is not necessarily a long lasting contract based on which the handler may be sheltered from competition. In fact, carriers may withdraw from the contract if they obtain better conditions from other service providers.

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(\*) Business secret.



- (157) According to the Trust, when SEAH exited the market and Airport Handling negotiated new contracts with the air carriers, the latter proposed to Airport Handling, as well as to the other service providers contacted, different — more favourable — conditions than those obtained from SEAH. It is, according to the Trust, quite common that an air carrier decides to terminate the contract when it receives more favourable conditions from other competing handlers; or threatens the continuation of the contract if the current handler is not willing improve its offer as compared to that of other providers.
- (158) Airport Handling started its activity at Milan airports on 1 September 2014, after SEA's shareholding was transferred to the Trust. Although Airport Handling initially notified to ENAC and to the air carriers the start of its activity on 1 July 2014, the delays arising from the transfer of the shares to the Trust and the difficulties with the trade unions have further delayed this launch of operations to 1 September 2014.
- (159) On 28 February 2015, Airport Handling had concluded ground handling contracts with [...] (\*) air carriers, [...] (\*) operating at Linate and [...] (\*) operating at Malpensa. The Trust further submitted that Airport Handling did not conclude contracts with all carriers previously in a contractual relation with SEAH. More specifically, [...] (\*).
- (160) According to the Trust, the contracts signed by Airport Handling with the air carriers are different from those with SEAH:
- *From a legal perspective:* Airport Handling has entered into a new contractual relationship and did not become the successor of a former contract. Therefore Airport Handling is not responsible for previous liabilities, claims or debts of carriers in respect of SEAH.
  - *From the point of view of the content:*
    - Airport Handling has almost systematically received from carriers (directly or through tender notices) requests for [...] (\*),
    - some carriers have [...] (\*),
    - some carriers requested [...] (\*).
- (161) In particular, according to the Trust, [...] (\*) carriers have obtained from Airport Handling, within the framework of the negotiation of the new ground handling contract, [...] (\*). At the same time, [...] (\*) carriers have contracted [...] (\*) with SEAH.
- (162) The Trust also submitted that some of the most important contracts with carriers ([...] (\*)) would expire as follows:
- the contract with [...] (\*) on [...] (\*),
  - the contract with [...] (\*) on [...] (\*),
  - the contract with [...] (\*) on [...] (\*).

#### 5.1.3. On the presumed joint marketing efforts

- (163) Like Italy, the Trust considers that any joint marketing efforts undertaken by SEA/SEAH and Airport Handling, if such effort could be proven, would be irrelevant to the assessment of economic continuity.
- (164) In addition, the Trust considers that the fact that SEA may have stated publicly and/or communicated to carriers that the group intended to continue ground handling operations is irrelevant for the purposes of the investigation to the extent the creation and capitalisation of Airport Handling had been known to the Commission since 2013.

#### 5.1.4. On the expected market share of Airport Handling

- (165) According to the Trust, the fact that Airport Handling may acquire a significant presence on the market for ground handling services at Milan airports results not from the transfer of any assets from SEAH to Airport Handling, but from the particular context of Milan airports and the business models pursued by the different handlers.

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(\*) Business secret.

- (166) In the Trust's view the fact that a company exiting the market and another operator (be it a new entrant or an already existing operator) gains similar market shares is a phenomenon that markets observe on a regular basis, and is the result of cross elasticity between competing undertakings. In a hypothetical market with only two undertakings A and B, it is likely that, if company A fails, its customers and market share transfer to undertaking B, without any legal or factual link between the two undertakings. In the case of the Milan airports, it is true that more than two handlers operate, however according to the Trust to date only two of those operators focused their business model on the Milan airports. The similar market shares could in the Trust's opinion be justified by reference to the fact that Airport Handling is the only service provider that has organised its activity at Milan airports as hub-provider, in order to largely satisfy the demand of the carriers and provide high quality services.
- (167) According to the Trust the reasoning of the Commission is circular: Either the market share that Airport Handling was expected to reach at Milan airports, as estimated by the business plan is unrealistic, and therefore the capital injection in Airport Handling would amount to State aid, or the market share is in fact realistic, however in that case the fact that Airport Handling could reach that market share is relevant to the issue of economic continuity.

#### 5.1.5. *On the use of SEAH's assets by Airport Handling*

- (168) The Trust emphasises that the tender for the sale of SEAH's assets was declared unsuccessful since no bidder had expressed an interest in the purchase of the lots put up for sale.
- (169) According to Airport Handling, the main reason for that is that SEAH's assets are obsolete and, therefore, do not appear attractive to the market. Indeed, the Trust submits that out of the [...] (\*) most valuable components (i.e. the [...] (\*)), only around [...] (\*) assets were purchased by SEAH after 31 December 2006. Most assets would be more than 15 years old, which causes significant difficulties in obtaining spare parts and consequently in ensuring the required performance levels.
- (170) The Trust also recalled that Airport Handling did not bid in the tender for the sale of SEAH's assets. However, it considers that its acquisition of the assets would not constitute proof of economic continuity with SEAH.
- (171) The Trust also submitted that Airport Handling is currently using SEAH's assets under a bilateral contract signed on 1 September 2014. According to the Trust, the contract was negotiated at arm's length by SEAH and the Trustee in the period between the date of setting-up of the Trust (30 June 2014) and the date of the actual transfer of SEA's participation in Airport Handling to the Trust (27 August 2014).
- (172) Significant changes would have been brought to the contract by the Trustee, such as:
- the verification of the market value of the lease fee by an independent expert appointed jointly by Airport Handling and SEAH, to ensure that Airport Handling paid a market oriented fee for the use of SEAH's assets,
  - the adjustment of that lease fee in case of a deviation of more than 10 % from the lease fee indicated by the independent expert,
  - the prolongation of the contract up to 31 August 2015, to bring it in line with the normal commercial practice,
  - the possibility to sublet the equipment to third parties,
  - a condition that routine and damage maintenance is borne by Airport Handling, while extraordinary maintenance remains in the responsibility of SEAH.
- (173) The Trust recalled that the lease fee had been set based on independent valuations by different experts and therefore reflected the market price.
- (174) The Trust also submitted that Airport Handling had already put in place procedures for the purchase from third parties of a significant portion of assets ([...] (\*) %) required to run the business, to replace the assets leased from SEAH at the expiry of the lease contract. In this sense:
- On 26 November 2014, the Board of Directors of Airport Handling resolved to initiate a tender procedure for the renewal of the assets leased from SEAH, for a total estimated value of approximately EUR [...] (\*).

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(\*) Business secret.

- Those tenders (all but one which at the time the Trust's comments on the 2014 opening decision were submitted was still in its start-up phase) were concluded at the beginning of January 2015 and Airport Handling had already approved a first order for the purchase of around [...] (\*) % of the assets (including [...] (\*) on 11 February 2015. According to the Trust a second order could be placed shortly, subject to the finding of alternative forms of funding or supply since the results of the selection procedure showed a significant increase in the costs of new equipment.

#### 5.1.6. *On the timing and logic of the operation*

- (175) According to the Trust, concluding that the creation of a new ground handling subsidiary by SEA has the aim of circumventing the recovery order is the same as stating that a negative State aid decision prevents the beneficiary of the alleged aid from resuming its business under new conditions.

#### 5.1.7. *On the actions taken by the Trustee to ensure economic discontinuity*

- (176) The Trust points out that on 1 August 2014, the Trustee and SEA concluded a Protocol to allow the Trustee to start performing certain functions leading and monitoring the operation of Airport Handling during the months of July and August 2014.

- (177) At that stage, in addition to measures taken in consultation with SEAH concerning the lease of SEAH assets and the expert report, the Trustee requested and obtained from SEA the financial resources required to carry out its work in complete independence from the latter. In addition, the Trustee urged SEA to redefine its service contracts with Airport Handling, identified a new general counsel for Airport Handling and required changes to Airport Handling's by-laws to ensure full autonomy of the company.

- (178) Following the transfer of SEA's participation to the Trust, on 27 August 2014 the Trustee appointed a new Board of Directors.

- (179) The Trustee also saw to it that the new Board:

- asked the members of the Board of Directors of Airport Handling to prepare and deliver a complete assessment of the business to ensure that no acts have been adopted which are incompatible with the requirement of economic discontinuity,
- required the putting into place of procedures in order to:
  - ascertain, inter alia, that no legal acts were in place between SEAH and Airport Handling concerning the supply of goods, movable and/or immovable property, contracts with airlines and/or suppliers of goods and services relating to the handling activities,
  - verify that Airport Handling would put in place necessary procedures and controls so as to avoid that the company benefits from undue commercial information held by SEA which could benefit Airport Handling vis-à-vis competitors in the acquisition or maintenance contracts with carriers or is relevant for the positioning of Airport Handling on the ground handling market,
- took note of existing posts, by integrating senior functions where deemed insufficient (primarily Legal and Resources Directorate),
- modified the governance of Airport Handling delegating to CEO, who is a member of the Trustee, Trustee) extensive decision-making powers,
- assessed and provisionally confirmed the Director-General,
- decided that Airport Handling should have its own website,
- undertook intense negotiations with SEA for a thorough revision of service contracts existing between Airport Handling and SEA with the aim to ensure that all services are available at the best possible conditions and obtained the possibility of discontinuing the service without penalty if and when Airport Handling decides to make use of internal structures or approach different and more convenient suppliers,

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(\*) Business secret.

- communicated to customers, suppliers and the competent authority (ENAC) the change in control of the company.
- (180) Furthermore, the Trustee took measures in order to ensure economic discontinuity. In summary, those procedures encompass:
- the listing of operations deemed relevant to ensure economic discontinuity,
  - the appraisal and approval of those operations,
  - the information flow to the Board,
  - the procedures concerning management, separation and storage of information which may be relevant for economic discontinuity.
- (181) According to the Trust, those internal procedures were explained in two training sessions for Airport Handling senior and middle management respectively.

#### 5.1.8. *On the imputability to the State of the measures*

- (182) According to the Trust, in the period June — August 2014 the Italian authorities have not exercised direct influence on SEA and its decision to invest in Airport Handling. There would never have been any indication, direct or indirect, which could have given rise to even the remote doubt that the decision of setting up and/or capitalise Airport Handling depended upon the Italian authorities.

#### 5.1.9. *On Airport Handling's business plan and compliance with the market economy investor principle*

- (183) According to the Trust there is no continuity between SEAH and Airport Handling, therefore any private investor would have considered the fragility of the Commission's assessment in the 2014 opening decision and would not have been influenced by that assessment in its decision to invest in Airport Handling.
- (184) The Trust clarified that the business plan of November 2013 initially presented to the Commission had been refined in the meantime. Therefore the business plan at the basis of the decision to capitalise Airport Handling was the business plan of August 2014 adopted by the Board of Directors of Airport Handling on 26 August 2014.
- (185) Following the transfer of SEA's participation to the Trust, the Trustee proceeded to verify that Airport Handling's business plan was credible. According to the Trust, the newly appointed Board of Airport Handling first examined whether the business plan of 6 August 2014 was reliable, entrusting the task to Boston Consulting Group ('BCG').
- (186) BCG reported its findings to Airport Handling on 14 October 2014. BCG came to the conclusion that the aim of the business plan, i.e. EBIT in 2017 of EUR [...] (\*), with a margin of [...] (\*) %, was reasonable and that the level of deviation was broadly in line or slightly below the average profitability of a significant sample of other public and private European companies operating in the ground handling sector. BCG also confirmed the validity of the business plan of November 2013.

##### 5.1.9.1. *On the intended workforce reduction and efficiency gains*

- (187) According to the Trust, Airport Handling is determined to deliver maximum efficiency and flexibility by means of [...] (\*). According to the business plan of 6 August 2014, Airport Handling is expected to employ [...] (\*). This will be achieved by streamlining coordination structures and the introduction of new performant equipment and computer systems for personnel management, which will allow Airport Handling not to replace outgoing staff.

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(\*) Business secret.

### 5.1.9.2. On efficiency gains linked to factors specific to the organisation of work

(188) According to the Trust, an even greater degree of efficiency will result from the following series of measures:

- *Optimisation of the share of fixed-term contracts and part-time contracts*: efficiency is estimated to increase by around [...] (\*) % already in 2015; and together with the [...] (\*) would increase by an additional [...] (\*) % by 2017.
- *Better definition of the work programme*: the work contract applied by Airport Handling foresees [...] (\*) than the contract SEAH applied to its employees. This allows savings of [...] (\*) % in respect of the number of working employees. In addition, the daily working time of full time staff has been [...] (\*), with an impact on staffing needs of [...] (\*) %. With the renewal of the collective agreement, expected during 2015, a further [...] (\*). Furthermore, Airport Handling intends to optimise the use of resources by introducing instruments such as working in shifts and contracts with modulation of the daily and weekly schedule according to the actual requirements in line with the new possibilities offered by collective agreements at national level. These mechanisms will enable Airport Handling to increase efficiency for at least a further [...] (\*) %.
- *Adapting the organisational structure in order to use resources effectively* by [...] (\*): already from 2015, there will be an increase in efficiency resulting from the seasonal upgrading of the matrices in function of traffic growth and by the redistribution of leave on nine periods which entails a [...] (\*). The estimated savings will be [...] (\*) %.
- *Optimisation of the capacity of existing staff*: the progressive use of [...] (\*) will lead to a positive increase in productive efficiency of 0,5 %. The reduction of posts for [...] (\*), in part already carried out ([...] (\*)) and partly under implementation during 2015 ([...] (\*)), will further contribute to increasing efficiency.
- *Economies of scale arising from the higher traffic*: traffic increase of existing customers and contracting with new carriers, even those operating in non-peak times, will allow the improvement of staff saturation factors with an effect in terms of productive efficiency of + [...] (\*) % in 2017.
- *Structural adjustments in the industrial processes*: the Trust mentioned the following routes envisaged to foster efficiency: better work planning and organisation, investments in technical solutions to enable partial or total automation of certain activities, linking workforce expenditure to business outputs and outcomes. As concerns work planning, the Trust indicated that Airport Handling had foreseen investments in new IT systems for the management of personnel and allocation to shifts leading to a more rational use of resources with an efficiency of [...] (\*) %. In addition, Airport Handling has begun a process of acquisition of new equipment endowed with modern geo-location systems. Efficiencies in respect of staff use are estimated to [...] (\*) %.

(189) According to the Trust, the results achieved by Airport Handling in its first months of operation allow the Commission to verify *ex-post* that the assumptions in the business plan were sound. The Trust pointed to the results of the first 4 months of activity, showing [...] (\*) EBIT of EUR [...] (\*) and [...] (\*) of EUR [...] (\*) as compared to the forecasts of the business plan of 6 August 2014. This positive trend was the result of [...] (\*) revenues (EUR [...] (\*)) and [...] (\*) costs (EUR [...] (\*)).

## 5.2. Comments from SEAH (in liquidation)

### 5.2.1. On SEAH's assets

(190) According to SEAH the ground handling equipment had a book value of EUR [...] (\*) prior to SEAH's entry into liquidation. The average age of these assets was [...] (\*). Of the approx. [...] (\*) items of higher value [...] (\*) equipment except [...] (\*)), only [...] (\*) had been acquired after 31 December 2006.

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(\*) Business secret.

- (191) When SEAH was put into liquidation, the only other assets of the company consisted of working capital linked to the business ceased at 1 September 2014. In addition, certain [...] (\*) were present. Those positions had been liquidated in the meantime. Therefore, according to SEAH, the liquidator can only count on the sale of the ground handling equipment to fund liquidation costs and any other residual debit.

#### 5.2.2. *On the tender for the sale of SEAH's assets*

- (192) One of the main tasks of the liquidator was to complete the open, public and non-discriminatory tender procedure for the sale of SEAH's assets already launched before the entry of the company into liquidation proceedings.
- (193) According to SEAH, the assets were grouped in nine bundles that included complementary assets of different values, and with functional autonomy. The objective was to guarantee a wide participation in the tender. The distribution of the assets in bundles was aimed at addressing market requirements, as identified based on the activity of major handlers at Italian airports. Available information shows that the sales procedure was restricted to handlers, airport operators, air carriers, manufacturers of the types of equipment sold, resellers and leasing companies. Moreover, certain minimum solvency requirements were set out, concerning in particular (i) a turnover of at least EUR 1 million per bundle of assets for which they intend to submit a bid; (ii) net assets of at least EUR 1 million or EUR 2 million in case potential buyers bid for more than one bundle; (iii) debt to total assets ratio not higher than 3. The call for tenders did not lay down any selection criteria other than the mandatory requirements set out above.
- (194) SEAH notes that no potential bidder expressed interest in the acquisition of those assets. The only requests for information would have been submitted outside the framework of the procedure from parties interested in acquiring only certain assets, however at prices significantly lower than those set by the independent experts. SEAH also submitted that Airport Handling had expressed an interest to acquire the assets in question but had not bid. The Commission notes that the Italian authorities had already declared on 27 November 2013, when they consulted the Commission on SEA's plan to liquidate SEAH, establish Airport Handling and provide it with capital, that Airport Handling would not participate in the sales procedure and thus would not submit any offer in that procedure.
- (195) Following the unsuccessful attempt to sell out SEAH's assets, the liquidator proceeded to contact the main operators in the sector to discuss the possibility of a sale of those assets and the conditions that might apply to such sale.

#### 5.2.3. *On the valuation of the assets*

- (196) SEAH recalled that prior to the entry into liquidation of SEAH, its Board of Directors had selected IMQ as independent expert entrusted with the valuation of the assets. The valuation was delivered on 25 June 2014 and proposed a lease fee of EUR [...] (\*) per year, as a value considered in line with market conditions. On 1 September 2014, SEAH entrusted E&Y with a second valuation of the assets. Upon request from the Trustee, SEAH and the Trustee jointly tasked E&Y with providing such a second valuation. E&Y then proposed a lease fee of EUR 1,4 million per year.
- (197) SEAH added that Airport Handling currently uses SEAH's assets under a lease contract and is responsible for their maintenance (maintenance costs are estimated at EUR [...] (\*) per year).

#### 5.2.4. *On the lease contract*

- (198) According to SEAH, the lease contract prior to its conclusion was subject to intense negotiations between the parties, without any interference from SEA. SEAH submitted that the conclusion of the lease contract is a mandatory condition for the maintenance of the value of the assets in view of their dismissal. Absent the lease contract with Airport Handling, SEAH would have had to remove the equipment from the airport premises therefore incurring significant transport and maintenance costs.
- (199) SEAH also submitted that, given the expiry of the lease contract at 31 August 2015, the liquidator was considering options for the dismissal of the assets. SEAH points out that a sale of the assets to Airport Handling once the doubts of the Commission on economic continuity have been alleviated, would enable SEAH to maximise the value of those assets in the liquidation procedure.

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(\*) Business secret.



### 5.3. Comments from SEA

#### 5.3.1. *On economic continuity*

- (200) In SEA's view the case law quoted in the 2014 opening decision differs quite significantly from the case at hand.
- (201) Firstly, that case-law would exclusively refer to situations characterised by the presence of a transfer of assets from the beneficiary of the aid to a newly created company. The case law would essentially concern cases where the undertaking which had benefitted from incompatible State aid and was not in the position to repay such advantage established a new undertaking to which it transferred part of its activities. Secondly, in all cases quoted by the Commission, the transfer between the beneficiary and the new undertaking concerned assets of significant value (activities, facilities, goods, property, trademarks, industrial property rights).
- (202) According to SEA, the characteristics of the present case lead to the conclusion that Airport Handling could not have continued to enjoy the competitive advantage linked to presumed aid received by SEAH, given that it had not taken over any assets from SEAH. Rather, the alleged competitive advantage granted to SEAH would have been terminated with the liquidation of the company and could not therefore be transferred.
- (203) SEA recalls that in the recovery decision of 2012, the Commission concluded that the alleged competitive advantage granted to SEAH corresponded to the financing of the losses incurred by the company, which were generated mainly by high staff costs. While recalling that staff costs have a major impact on the cost structure of ground handling providers, accounting for between 65 % and 80 % of total costs, SEA points out that, unlike those cases quoted by the Commission, the present case does not concern a transfer of shares or assets required to exercise (or rather to continue) SEAH's activity nor an operation whose aim is to protect the assets of the beneficiary and therefore circumvent the recovery order.
- (204) According to SEA, it should also be noted that since the advantage derived from the alleged State aid received by SEAH was used to cover losses resulting from excessive labour costs, such advantage was definitely terminated with the liquidation of the company and the dismissal of the workers. In SEA's view the fact that former employees of SEAH were subsequently recruited by Airport Handling at conditions formally and substantially different, cannot materially alter this conclusion.
- (205) SEA adds that, even if it were accepted that the absence of an asset transfer from SEAH to Airport Handling is not sufficient to conclude on the absence of economic continuity, the circumstances of the transaction underlying the creation of Airport Handling, viewed as a whole, cannot be regarded as having had the effect of circumventing the recovery order.
- (206) According to SEA the decision to set up a new ground handling company operating on market conditions in competition with other service providers is based on economic logic and justified by a management model that differs significantly from that of the previous operator SEAH ([...] <sup>(\*)</sup>) in order to pursue an objective of sustainable profitability in the medium to long term.
- (207) SEA states that SEAH's announcement that the company would cease operations at Milan airports and SEAH's entry into liquidation have created a momentum of effective competition on the market, during which the air carriers operating at Milan airports could choose the provider of ground handling services based on a comparative evaluation of the offers submitted by different providers.
- (208) According to SEA it was following this competitive process that Airport Handling successfully concluded contracts with air carriers, in complete independence from SEA. Indeed, some carriers, formerly clients of SEAH, decided not to use the services of Airport Handling whilst Airport Handling concluded contracts with carriers not previously served by SEAH.
- (209) In addition, according to SEA, within the meaning of Council Directives 78/660/EEC <sup>(18)</sup> and 83/349/EEC <sup>(19)</sup> on consolidated financial statements, transposed into Italian legislation by Legislative Decree No 127 of 9 April 1991, failing any power of control and management by SEA of Airport Handling following the transfer of its participation to the Trust, Airport Handling is no longer part of the SEA group for accounting purposes and therefore its budget is not consolidated with that of SEA.

<sup>(\*)</sup> Business secret.

<sup>(18)</sup> Fourth Council Directive 78/660/EEC of 25 July 1978 based on Article 54 (3) (g) of the Treaty on the annual accounts of certain types of companies (OJ L 222, 14.8.1978, p. 11).

<sup>(19)</sup> Seventh Council Directive 83/349/EEC of 13 June 1983 based on the Article 54 (3) (g) of the Treaty on consolidated accounts (OJ L 193, 18.7.1983, p. 1).

- (210) Furthermore, in order to speed up the entry of third parties in the capital of Airport Handling, SEA and the Trustee on 26 January 2015 signed an 'implementing regulation under Article 20 of the Trust Deed', with the aim of conferring to the Trustee the responsibility to look for a third-party investor. The Trustee and SEA decided to appoint BNP Paribas as independent advisor for the assignment.
- (211) BNP Paribas assisted Airport Handling in the preparation of the offer for the sale of shares, took contact with several investors potentially interested to enter the capital of Airport Handling and carried out meetings with potential investors.
- (212) SEA added that once a private investor has acquired at least 30 % of Airport Handling, SEA will consider searching for investors interested to take over the majority shareholding in the company.

#### 5.3.2. *On State resources and imputability*

- (213) SEA is of the view that the fact that Airport Handling is a public undertaking is not sufficient to conclude that its resources are State resources within the meaning of Article 107(1) of the Treaty. In addition, following the setting up of the Trust, the financial resources of Airport Handling are not under the control of SEA, therefore it cannot be claimed that they are State resources within the meaning of Article 107(1) of the Treaty.
- (214) In this respect, SEA adds that:
- A first increase of capital, amounting to EUR 3,7 million, was approved by the general meeting of shareholders of Airport Handling on 27 August 2014. On the same date the Trust was vested with SEA's entire participation in SEAH. On that date the Trustee became, for all legal purposes, sole shareholder of Airport Handling.
  - On the same date, the Trustee, as sole shareholder of Airport Handling issued 20 000 SFPs for a total value of EUR 20 million. The SFPs were subscribed and paid in full by SEA on 28 August 2014.
- (215) SEA underlines that, since their transfer, the financial resources of Airport Handling have remained at all times under the control of the Trustee, the sole shareholder of Airport Handling.
- (216) In SEA's view the above shows that the public shareholder of SEA (Municipality of Milan), cannot exercise — directly or indirectly — any influence on the use of financial instruments in respect of Airport Handling and that throughout the duration of the Trust, such resources will remain under the control of the Trustee. In any event, as a result of the establishment of the Trust, SEA lost its power to appoint the members of the Board of Directors of Airport Handling.

#### 5.4. **Comments from an interested party**

- (217) The Commission received comments from an interested party who demanded that neither its identity nor its comments be disclosed to any third party.

#### 6. **COMMENTS FROM ITALY ON THE INTERESTED PARTIES COMMENTS**

- (218) Italy commented on the observations submitted in the framework of the investigation by the Trust and SEA.
- (219) Italy supported in full the observations submitted by the above mentioned interested parties and underlined that they evidenced on one side the lack of any interference from the Italian authorities on SEA's activity and the latter's decision to invest in Airport Handling, and, on the other side, that Airport Handling does not continue the economic activity of SEAH.

#### 7. **ASSESSMENT**

- (220) In this case, the Commission had to assess two distinct matters: First, the possible transfer of the recovery obligation stemming from the recovery decision from SEA Handling to Airport Handling; second, possible aid inherent in SEA's EUR 25 million capital injection in Airport Handling.



### 7.1. Economic continuity and transfer of the recovery obligation

- (221) Based on settled case law, unlawful and incompatible aid must be recovered from the undertakings that actually benefited from it <sup>(20)</sup>.
- (222) In case of insolvent beneficiaries of State aid, the recovery obligation can be fulfilled by registration of the liability relating to the repayment of the aid in the schedule of liabilities, provided that the aid beneficiary exits the market <sup>(21)</sup>. The Court held that ‘where the undertaking which received the unlawful aid is insolvent and a company has been created to continue some of the activities of the insolvent undertaking, the pursuit of those activities may, where the aid concerned is not recovered in its entirety, prolong the distortion of competition brought about by the competitive advantage which that company enjoyed in the market as compared with its competitors. Accordingly, such a newly created company may, if it retains that advantage, be required to repay the aid in question. That is the case where it is established that that company continues genuinely to derive a competitive advantage because of the receipt of that aid, especially where it acquires the assets of the company in liquidation without paying the market price in return or where it is established that the effect of that company’s creation is circumvention of the obligation to repay the aid’ <sup>(22)</sup>.
- (223) In the context of the transfer of assets from an aid beneficiary to another company that continues the former’s activities, the Court confirmed that the following factors *may be taken into consideration* for the assessment of economic continuity between the two companies <sup>(23)</sup>: the scope of the transfer (assets and liabilities, continuity of the workforce, bundled assets, etc.); the transfer price; the identity of the shareholders or owners of the acquiring firm and of the original firm; the moment at which the transfer is carried out (after the start of the investigation, the initiation of the procedure or the final decision); and, lastly, the economic logic of the transaction.
- (224) According to case law, the aforementioned factors may be taken into account to varying degrees, according to the specific features of the case at hand <sup>(24)</sup>. It follows that the Commission is not required to take into account the whole of those factors, as is demonstrated by use of the expression ‘may be taken into consideration’ <sup>(25)</sup>.
- (225) In order to decide whether there is economic continuity between SEAH and Airport Handling and the latter may be held liable for the reimbursement of the incompatible aid granted to the former, the Commission applied the aforementioned indicators to the specific circumstances of the case at issue.

#### 7.1.1. Scope of the transfer

##### 7.1.1.1. Transfer of workforce and work contracts

- (226) After SEAH was put into liquidation, many of its former employees were reemployed by Airport Handling, constituting initially the majority of the latter’s workforce. Therefore, it is relevant to analyse whether this situation is not indicative of a circumvention of the recovery decision. To that effect, it should be assessed whether the process that led to that outcome did not amount to transferring SEAH’s workforce into Airport Handling while preserving its core features. It is all the more relevant since for a ground handling company, workforce is the primary resource necessary to operate <sup>(26)</sup>.
- (227) According to Italy there is no continuity of workforce between SEAH and Airport Handling as work contracts were terminated by SEAH and staff was employed by Airport Handling under new contracts, based on substantially different conditions. This view was supported by both Airport Handling and SEA.

<sup>(20)</sup> Case C-303/88 Italy v Commission ECLI:EU:C:1991:367, paragraph 57; Case C-277/00, Germany v Commission (‘SMI’), ECLI:EU:C:2004:238, paragraph 75. By repaying the aid, the recipient must forfeit the advantage it previously enjoyed on the market, and the pre-aid situation is restored.

<sup>(21)</sup> Case C-454/09, Commission v Italy (‘Aid in favour of New Interline SpA’), ECLI:EU:C:2011:650, paragraph 36.

<sup>(22)</sup> C-610/10 Commission v Spain, ECLI:EU:C:2012:781, paragraph 106.

<sup>(23)</sup> Joined Cases C-328/99 and C-399/00 Italy and SIM 2 Multimedia v Commission (‘Seleco-Multimedia’) ECLI:EU:C:2003:252, paragraphs 69, 77-78. This set of indicators was then confirmed in Case T-123/09 Ryanair v Commission, ECLI:EU:T:2012:164, paragraph 155.

<sup>(24)</sup> Joined Cases T-415/05, T-416/05 and T-423/05 Hellenic Republic et al. v Commission, ECLI:EU:T:2010:386, paragraph 135.

<sup>(25)</sup> Case T-123/09 Ryanair v Commission, ECLI:EU:T:2012:164, paragraph 156.

<sup>(26)</sup> See footnote 40.

- (228) In Italy's view the agreement signed by SEA, SEAH and the trade unions on 4 November 2013 should not be construed to have guaranteed former employees of SEAH the rights acquired under the previous contracts with SEAH. Such agreement would be an essentially programmatic document which was subsequently replaced by the agreements signed on 4 June 2014. It would be evident from the wording of those agreements that former employees of SEAH were not guaranteed previously acquired rights but were rather re-employed by Airport Handling under new conditions.
- (229) Based on information obtained in the formal investigation procedure, the Commission assessed (i) the process whereby a significant part of SEAH's workforce was reemployed by Airport Handling, (ii) and the agreements with trade unions on the reemployment of SEAH's workforce.
- (230) Firstly, as regards the process, it should be noted at the outset that there was no *de jure* transfer of work contracts from SEAH to Airport Handling. Contracts with SEAH were legally terminated and new contracts were concluded with Airport Handling. Moreover, work contracts were neither automatically nor globally transferred from SEAH to Airport Handling. In fact, no transfer whatsoever of work contracts took place. Rather, the former company terminated the work contracts prior to reemployment of part of the workers by the latter on different conditions.
- (231) Secondly, as regards the scope of the transfer, the following is to be noted: On 22 April 2014, when SEAH initiated the laid-off workers' mobility scheme, its workforce was [...] (\*) strong, equivalent to [...] (\*) FTEs. Available data shows that on 31 May 2015, 9 months into its operations, Airport Handling had [...] (\*) employees, of which [...] (\*) had been previously employed by SEAH. Hence, Airport Handling had until then taken over approx. [...] (\*) % of SEAH's employees. The transfer was therefore not complete, and not even practically complete. Nevertheless, it is also to be noted that Airport Handling's workforce, at least in the early phase after starting operations, consisted almost exclusively of former SEAH staff.
- (232) Thirdly, as regards the material conditions of the re-employment, the Commission notes that contracts signed by Airport Handling with former SEAH employees differed both formally and materially from the previous contracts with SEAH in particular in that different conditions apply concerning:
- a [...] (\*) applies to Airport Handling's employees,
  - Airport Handling does not apply the [...] (\*) supplementing the national collective labour agreement,
  - the material changes to employment conditions are encompassing:
    - [...] (\*),
    - [...] (\*), which SEAH used to apply to its employees,
    - work organisation, e.g. [...] (\*),
  - a measurable result of above listed changes is the reduction of labour costs of around [...] (\*) %, as compared to SEAH's labour costs, both resulting from the changes in the applicable national collective labour regime and the supplementary corporate contract; the weight of the terms of the latter on labour costs was reduced by 50 %.
- (233) Lastly, also the circumstances under which the terms of employment were negotiated between the parties involved and ultimately agreed in this case indicate that employment conditions changed materially: SEA, SEAH and Airport Handling negotiated separately with trade unions and reached separate agreements with them. It took Airport Handling and trade unions more than 8 months to reach an agreement on the terms of the recruitment procedure, the legal and financial content of employment contracts, welfare policy and work organisation. According to the Trust, SEAH workers initially opposed the changes to which trade unions representing the workers had consented in the agreement of June 2014. Workers rejected these changes in a referendum. According to documentation provided by the Trust, Trade Unions then only agreed to the new employment terms after Airport Handling accepted to

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(\*) Business secret.

introduce certain clarifications to aforesaid agreement. The Commission notes that Airport Handling negotiated separately with the trade unions and, despite initial disagreements, it succeeded in implementing the above described changes. As was described in recital 38 above, the agreement between Airport Handling and trade unions, of 4 June 2014 has not been altered materially after trade unions rejected it in a referendum, where they demanded a number of clarifications to that agreement.

- (234) In light of the above considerations, the actual workforce transfer was neither complete nor did it imply any replication in substance of employment conditions prevailing under the SEAH contracts.
- (235) This finding is not affected by the agreements between respectively SEA, SEAH and Airport Handling with the trade union organisations concerning the workforce. Indeed, the objective of the agreements does neither indicate that the workforce would be completely transferred from SEAH to Airport Handling, nor that the conditions prevailing under SEAH's work contracts would be continued. The Commission notes in particular that according to the initial draft settlement of 4 November 2013 between SEA and trade unions, a future implementing agreement must be inspired by the objective to safeguard the jobs of all SEAH personnel<sup>(27)</sup>. That agreement enumerates a number of measures to attain that objective, in essence all mechanisms made available by the relevant legislation governing employment and collective bargaining such as social safety nets and voluntary redundancies, also to be implemented within the SEA Group, and solutions involving relocation within the Group. Hence, that agreement indeed implied that jobs were to be reattributed within the SEA group as a whole<sup>(28)</sup>, but not only to Airport Handling, and only as one measure among several. Moreover, those agreements were not concluded with Airport Handling, which concluded separate agreements with the personnel. Therefore, the number of jobs reallocated to Airport Handling was not pre-determined by the parties but was established following the company's staffing needs after conclusion of the contracts with the airlines.
- (236) The Commission further notes that there is no indication that Airport Handling was under any obligation, imposed either by public authorities or by its mother company SEA, to employ former SEAH staff.
- (237) In conclusion, as regards the scope of the transfer of the workforce, the Commission considers that the circumstances indicate a *prima facie* stronger element of economic continuity due to the reemployment of a significant part of SEAH's workforce by Airport Handling. However, the facts surrounding the reemployment must be taken into account, in particular the termination of all contracts and the conclusion of new contracts with new contractual conditions. The Commission therefore concludes that the workforce transfer cannot be construed as a strong indication of economic continuity between SEAH and Airport Handling.

#### 7.1.1.2. Contracts with air carriers

- (238) In its 2014 opening decision, the Commission took the preliminary view that Airport Handling's expected market shares for the first 6 months of operations could only be seen as realistic due to the insourcing of business previously undertaken by SEAH.
- (239) In the course of the investigation, Italy, SEA and Airport Handling claimed that those expectations were based on Airport Handling's business plan of August 2014. They were made possible by laying down significant reductions in operating costs, gained through labour efficiency and personnel reduction.
- (240) Moreover, the contracts with airlines operating at Milan airports were negotiated *ex novo* by Airport Handling. According to Italy, such contracts could not be legally transferred from SEAH to Airport Handling. They had to be negotiated *ex novo* in competition with the other service providers operating at Milan airports.
- (241) Indeed, as was described above in recitals 133 and 208, Airport Handling's client portfolio differs from that of SEAH. When SEAH exited the market, a number of its clients decided to entrust ground handling services to operators other than Airport Handling. Conversely, Airport Handling managed to attract customers which were not previously served by SEAH.

<sup>(27)</sup> 'continuation of the objective to safeguard the jobs of all SEAH personnel.' See point 6, subparagraph 1 of the agreement of 4 November 2013.

<sup>(28)</sup> 'Recourse to all mechanisms made available by the relevant legislation governing employment and collective bargaining (primarily, social safety nets and voluntary redundancies, also to be implemented within the SEA Group, seamlessly with regard to the upcoming deadline of 31 December 2013) and solutions involving relocation within the Group (both in line with new business opportunities and in accordance with the insourcing processes implemented following the post de-hubbing company agreements, and with internal mobility designed to address the organisational requirements of SEA SpA); *Ibid*.

- (242) In order to further evidence the fact that the new contracts concluded by Airport Handling with the air carriers were not only subject to *ex novo* negotiation but also provide for materially different contractual conditions, Italy submitted information showing that certain airlines previously served by SEAH (such as [...] (\*) ) were able to obtain significantly more favourable conditions from Airport Handling than from SEAH. In particular, in the course of the negotiations with Airport Handling, [...] (\*) requested that [...] (\*). As a result [...] (\*) obtained a [...] (\*) <sup>(29)</sup>.
- (243) In the course of the investigation, Italy explained that SEA had not conditioned the granting of discounts from airport charges to air carriers operating at Milan airports on conclusion by the latter of ground handling contracts with Airport Handling. Based on the comments received in the investigation, there is no documentary evidence to prove that SEA would have effectively engaged in such behaviour in order to induce airlines operating at Milan airports to conclude new ground handling contracts with Airport Handling.
- (244) In the 2014 opening decision, the Commission expressed doubts that contracts with the airlines would be renegotiated. In that context the Commission pointed to information that suggests that even before the expiry of such contracts, SEA and Airport Handling had engaged in joint marketing efforts aiming at reassuring airlines operating at the airport that SEA would continue the ground handling business. The formal investigation procedure however did not produce any factual evidence that SEA and Airport Handling had organised, through joint marketing efforts, a mere change of contractor without leaving the airlines, as principals, a margin for renegotiation of the contractual terms. In particular, the Commission did not obtain any evidence that either SEA or Airport Handling would have been in a position to effectively frustrate attempts of former SEAH-customers to obtain more favourable terms from other ground handling providers.
- (245) The Commission assessed if Airport Handling, when preparing its entry into business, *de-facto* was in the position of a new entrant or rather benefitted from SEAH's market position and customer contacts, so as to ensure the continuity of operations. Under the specific circumstances of the case in hand, if SEAH's market exit had not resulted in an opportunity for its customers to negotiate new contracts with ground handlers other than Airport Handling, this could be indicative of a circumvention of the recovery decision in that it would amount to a transfer of customers from SEAH to Airport Handling.
- (246) In that respect, the following is of particular relevance: Airport Handling's business plan did not consider alternative scenarios with lower market shares. This could indicate that Airport Handling was confident to take over SEAH's customer basis with a relatively high degree of likelihood and could thus possibly expect to benefit from SEAH's former market position and customer contacts to attract its customers and the corresponding contracts without facing competition by other ground handling companies to win those contracts.
- (247) However, certain formal and material factors show that such was not the case.
- (248) Firstly, as regards the form of the transfer, service contracts were not legally transferred from SEAH to Airport Handling. Airlines were thus free to select a provider other than Airport Handling as soon as their contracts with SEAH were terminated, as described in recital 43 of the present decision.
- (249) Secondly, available information suggests that customers were in a position to approach other service providers when SEAH informed them that it would cease activities. Indeed, the fact that a number of clients defected is proof that such opportunity existed. Most importantly, SEAH had no legal grounds to unilaterally transfer the contracts to any third party, save in exceptional situations. According to information provided by the Italian authorities, the clause on exceptional situations had however not been invoked. The Italian authorities provided an overview of Airport Handling's customer base, as of 14 February 2014, which shows that out of 68 former SEAH customers, [...] (\*) had defected to other ground handling service providers, that of the [...] (\*) Airport Handling clients at that time, 1 had defected from a competitor, 3 were newcomers to the airport and [...] (\*) were former SEAH-clients. [...] (\*) of those [...] (\*) former SEAH-clients negotiated new contract terms more favourable for the clients, either stipulating lower prices (13 clients), a modified serve portfolio ( [...] (\*) clients), or even a combination of both ( [...] (\*) clients). Hence, only 20 clients concluded service contracts that in essence stipulate the same conditions as the previous contracts with SEAH. Price reductions are ranging from [...] (\*) to [...] (\*) % compared to prices previously agreed with SEAH.

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(\*) Business secret.

<sup>(29)</sup> [...] (\*).

- (250) In view of the above, on balance, the Commission sees no indication of circumvention of the recovery decision (and thus economic continuity) in the process that led Airport Handling to enter into agreements with a number of former customers of SEAH. Indeed, Airport Handling appeared to have been exposed to genuine competition when negotiating with carriers operating at Milan airports, and there are indications that competition between service providers at Milan's airports was effectively opened when SEAH was about to exit the market.

#### 7.1.1.3. SEAH's assets

- (251) As a third point in the analysis of the scope of the transfer, the Commission assessed the scope of the transfer of the assets.
- (252) The Commission notes that, when Airport Handling started operations, it sourced 100 % of its entire ground handling equipment from SEAH through leasing. 5 months later, it started gradually replacing that equipment with assets bought on the market and finally, in September 2015, purchased [...] (\*) of [...] (\*) lots of assets from SEAH.
- (253) Specifically, Airport Handling commenced providing ground handling services using SEAH's assets under a lease contract. That contract was due to expire on 31 August 2015. Before the lease contract ended, Airport Handling expressed its interest in the acquisition of [...] (\*) out of [...] (\*) tender lots, namely lots No [...] (\*). According to Airport Handling, although realistically around one third of the ground handling equipment owned by SEAH and leased to Airport Handling was aged, Airport Handling was willing to acquire around [...] (\*) % of that equipment (which would be sufficient for Airport Handling to run its business) considering that Airport Handling had in the meantime obtained on the market a significant stock of spare parts which could be used for the replacement of some parts of the most aged SEAH equipment.
- (254) Available documentation suggests that sales negotiations between Airport Handling and SEAH commenced when by letter dated 3 June 2015 Airport Handling made the following proposals:
- that a [...] (\*) %-discount on the [...] (\*) in view of, firstly, the fleet's age and condition and secondly the outcome of the sales procedure initiated by SEA,
  - payment [...] (\*) from 31 July until 31 December 2015,
  - that the original lease contract be terminated consensually on 30 June 2015 and that SEAH grants provisional and limited free-lease (*comodato*) of approx. [...] (\*) selected items [...] (\*), until 31 December 2015 at the latest, all insurance and maintenance costs being at the expense of Airport Handling.
- (255) On the same day, a meeting between the parties was held. By letter of 10 June 2015, SEAH's liquidator responded to Airport Handling's proposals, in the sense summarised below:
- Although SEAH is willing to accept the offer, it is not ready to grant discounts since all prices had been determined by expert evaluations. The liquidator pointed out that Airport Handling would not even have to bear any transport costs.
  - SEAH does not accept payment in instalments except if Airport Handling provides adequate guarantees.
  - In the absence of discounts, SEAH is willing to transfer the fleet on 30 June 2015 and to agree to lend the specified items, however only until 30 November 2015 at the latest.
- (256) According to the Italian authorities, negotiations still drew on until September 2015, when SEAH agreed to the payment of the purchase price [...] (\*) for the sale of the [...] (\*) lots, [...] (\*). The purchase price was EUR [...] (\*), that is the price initially indicated in the failed tender procedure. The original lease was exceptionally extended until [...] (\*), for [...] (\*) items of the fleet and against payment of an overall lease of EUR [...] (\*), which fee was based on the value attributed to those items by the abovementioned independent appraisals. Airport Handling returned these [...] (\*) items to SEAH on [...] (\*).

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- (257) According to Airport Handling, the purchase was nevertheless economically justified, in particular for the following reasons:
- Airport Handling's business model in essence consists in having its operational hub only in one location, namely Milan airports, and therefore is based on an organisational model which provides for human resources and technical means to meet the demand of services in one single location (hub-provider business model). In Airport Handling's view, this model ensures better efficiency and more secure profitability margins. Hence, age and efficiency of the equipment would be less of a concern for Airport Handling than for operators that are active on several airports and therefore must necessarily carry out a 'lean management' of their equipment.
  - Although part of the equipment was aged, a number of items were relatively recent and could be operated efficiently.
  - Items were already on the premise and therefore would not have implied any transport cost.
  - Airport Handling hoped to reduce maintenance costs, as most of the items came from the same manufacturer and were of the same model.
  - When trying to purchase second-hand equipment on the market across the EU, Airport Handling found that the market did not offer enough second-hand equipment to satisfy Airport Handling's requirements at an acceptable price.
  - A balanced mix of used and new assets should be used during the start-up phase, mainly because equipment suppliers seemed unable to provide new equipment in one go, and also because Airport Handling had reason to believe that a sudden massive increase of demand could trigger price hikes. Hence, Airport Handling rather intended to progressively decommission used items and replace them with new ones.
  - Lastly, testing a new fleet and adequately training staff to operate it during regular operations would have been difficult, in particular in the start-up phase.
- (258) Airport Handling had in the meantime launched a tender procedure, from November 2014 until January 2015, for the purchase of new equipment on the market. According to the Italian authorities, the value of the equipment purchased under this first tender procedure is approx. EUR [...] (\*).
- (259) The Commission assessed whether comparing the value and number of Airport Handling's assets purchased on the market with the value and number of items leased and then purchased from SEAH is a reliable indicator for economic continuity. As regards the comparability of both types of assets, the Commission found that:
- SEAH's liquidator had formed the lots so as to bundle in each lot items which were in working conditions together with less operational assets and items.
  - In general, SEAH's equipment was aged.
  - According to the Italian authorities, roughly [...] (\*) of the [...] (\*) items purchased from SEAH were in good or fair working order. About 1/3 at best could have been used to obtain spare parts. 700 of the items purchased were later found to have minimal or no value/use; 270 items were then parked and decommissioned as scrap.
  - Airport handling equipment is composed of a wide array of different items such as steps, trucks, forklifts, cargo-loaders and dollies.

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— It is not excluded that even a single new state-of-the-art vehicle that is operated full time can be operated far more efficiently than multiple aged vehicles which, as a rule, require more down-time for maintenance.

- (260) On that basis, the Commission concludes that comparing the value and number of new equipment with the value of equipment leased and the purchased cannot be used as an indicator for economic continuity in this case.
- (261) Against this backdrop, the Commission assessed the importance of the assets (operating tools) as a production factor in Airport Handling in proportion to labour as a production factor, and also in proportion to the turnover of both SEAH and Airport Handling.
- (262) As regards the importance of assets in relation to labour, in SEAH's last balance sheet before liquidation, the value of operating tools amounted to around EUR [...] (\*). Airport Handling, in turn, in 2015 owned capital assets worth EUR [...] (\*)<sup>(30)</sup>. In contrast, Airport Handling's labour cost amounted to EUR [...] (\*) in the year September 2014-August 2015, according to Airport Handling's operating statement for that period<sup>(31)</sup>.
- (263) Asset value is also of lower importance when compared to turnover: Airport Handling's operating statement for September 2014-August 2015 shows turnover to the amount of EUR [...] (\*). Therefore, the assets in question appear to be a production factor of minor importance compared to labour. Their value is also very modest compared to turnover generated with both labour and assets. Information obtained in the formal investigation procedure rather indicates that both SEAH and Airport Handling are pursuing a pronouncedly labour intensive rather than asset intensive business model.
- (264) The Commission therefore concludes that, even though Airport Handling has sourced initially all its assets from SEAH, this cannot be construed as *per se* indicating economic continuity because assets are only a production factor of minor importance in the ground handling business.

#### 7.1.1.4. Summary of the assessment on the scope of the transfer

- (265) The assessment of the question in how far the scope of the transfer could indicate that there is economic continuity between SEAH and Airport Handling leads to the following indication:
- (266) First, there was no transfer of the client portfolio from SEAH to Airport Handling. Rather, with the liquidation of SEAH, all contracts were terminated and Airport Handling had to reacquire contracts whereby it could attract some of the previous clients of SEAH and some new clients, and where it lost some of the clients to competitors. The contractual conditions were negotiated independently of the previous conditions under the agreements with SEAH. In this respect, Airport Handling had the same standing as any other competitor or new entrant would have had. The Commission considers the fact that there was no transfer of the client portfolio as a strong indication against economic continuity.
- (267) Second, Airport Handling recruited its initial workforce entirely from SEAH, but under new contracts and new contractual conditions. There was no block transfer of employment contracts, no automatic transfer of such contracts and no replication of their employment conditions.
- (268) Third, whereas it is true that Airport Handling initially leased all of SEAH's ground handling assets, finally, after the expiry of the lease, it took over only part of SEAH's assets as it had in the meantime started purchasing equipment from third parties. Available information furthermore suggests that the assets represent only a minor share of the production assets in the ground handling business and are not decisive for Airport Handling's cost structure and efficiency.
- (269) Overall, judging from the perspective of the scope of the transfer, the Commission considers that all circumstances attached to the setting up of Airport Handling in the wake of the liquidation of SEAH viewed together are not strong enough to indicate that there was economic continuity between both companies with a view to circumvent the recovery decision.

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<sup>(30)</sup> The Commission notes that according to statements and complete inventories provided by Airport Handling, the greater part of SEAH's assets was aged, repair intensive and fully written off.

<sup>(31)</sup> According to the abovementioned Brattle report on Airport Handling's business plan, the company's labour costs were [...] (\*).

### 7.1.2. *Payment of the market price*

- (270) According to case law, transfer of the assets at a price below market price would also be an indicator of economic continuity between the liquidated company owing the State aid debt and the newly created company.

#### 7.1.2.1. SEAH's assets — general remarks

- (271) In the context of bankruptcy proceedings, circumvention of a negative State aid Decision through a transfer of assets can occur in particular when:

- assets are sold — or leased — below the market price (for example following a sale procedure which is not sufficiently open, transparent and non-discriminatory), or
- the bankruptcy administrator performed actions which defrauded the creditors and may have reduced the assets of the insolvent company, or it breached the principle of the equal ranking of creditors to the loss of the public creditors <sup>(32)</sup>.

- (272) To the contrary, the Commission considers that a transfer — or lease — of assets from an insolvent company that received incompatible aid to a new company is not indicative of circumvention of a recovery decision if:

- nothing was done to reduce the value of the assets of the insolvent company to the benefit of the new company, to the detriment of the creditors (since the purpose of liquidation is to maximise the proceeds from the sales of the assets to reimburse creditors to the maximum extent possible),
- the public creditors (holding the claim linked to the incompatible aid) have not been unduly disadvantaged compared to other creditors (including possibly the new company or its founders) in the context of the insolvency proceedings.

- (273) In this case:

- The lease fee was set based on two external valuations. It was adjusted upwards corresponding to the second valuation, which was based on a comprehensive check of the leased equipment. Hence, there is no indication that the price at which SEAH's assets were leased by Airport Handling was at variance with normal market conditions.
- There is also no indication that the transactions performed on the initiative of the liquidator defrauded the creditors and may have reduced the value of the assets of SEAH. In particular, as shown in more detail below, all available information showed that proper tenders were organised for the sale of SEAH's assets, giving all potentially interested buyers opportunity to bid. The facts that the lease price was determined by external experts and revised upwards after a second valuation, and that SEAH's liquidator was not ready to grant Airport Handling a rebate on the purchase price of the equipment shows that the disposal process organised by the liquidator was geared towards revenue maximisation with respect to the assets in question, to the benefit of SEAH's creditors, and thus did not lead to a particular transfer of economic advantage to Airport Handling.
- The Commission also notes that none of the interested parties claimed that the liquidation proceedings have infringed the rights of the creditors or reduced the value of the assets owed by SEAH, or that such assets were leased to Airport Handling below market prices. SEAH's ground handling equipment consisted of around 4 000 assets. According to the plan initially announced by Italy, such assets were going to be leased by SEAH at market price pending their sale on the open market in the framework of the liquidation procedure.

#### 7.1.2.2. Lease of SEAH's assets to Airport Handling — The setting of the lease fee

- (274) Following the failure of the bidding procedure, the ground handling equipment was leased to Airport Handling under a lease contract initially due to expire on 31 August 2015.

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<sup>(32)</sup> Case C-277/00 *Germany v Commission* ('SMI'), ECLI:EU:C:2004:238, paragraph 93.



- (275) According to case law, the mere fact that a company has leased for a certain period some or all of the assets of an insolvent company does not necessarily mean that the new company enjoyed the competitive advantage linked to an aid previously granted to the lessor<sup>(33)</sup>. Leasing of the assets by the recipient of the aid to a company performing a similar activity is not indicative of economic continuity if the lease price reflects the market price. However, if the lease price, paid by the new company to the beneficiary of the aid, was below market price, this could be an indication of economic continuity in that the advantage conferred on the beneficiary by the illegal and incompatible aid could be said to have been fully or partly transferred to the new company through a price below market value.
- (276) Available information suggests that SEAH and the Trustee negotiated the lease contract at arm's length. Moreover, the lease fee was determined by two subsequent external valuations. In order to confirm the soundness of the first valuation, which had set the annual lease fee at EUR [...] (\*), SEAH and Airport Handling jointly entrusted E&Y with the task of reassessing the lease fee. That second valuation initially recommended a [...] (\*) lease fee, being EUR [...] (\*). Then, after SEAH and Airport Handling had agreed to broaden that second valuation in order to include new information gathered in equipment delivery reports, the experts found that a number of machinery and equipment items were not suitable for use and revised their initial estimate [...] (\*), to EUR [...] (\*). Based on that second evaluation report, SEAH and Airport Handling agreed to reduce the lease amount to EUR [...] (\*) *per annum*.
- (277) In conclusion, available information suggests that SEAH and Airport Handling negotiated at arm's length, and relied on expert reports on the value of the assets in question. The fact that the second valuation was revised upon mutual request of both parties indicates that both intended to keep the lease price as closely as possible in line with market conditions and to pre-empt any possible doubt of collusion. The Commission therefore considers the agreed lease fee to be at least the market price.

#### 7.1.2.3. Purchase of part of SEAH's assets by Airport Handling — the purchase price

- (278) Airport Handling purchased the assets after the failure of the bidding procedure and after the expiry of the leasing agreement. The Commission assessed whether Airport Handling through that transaction received any advantage originating from previous unlawful aid granted to SEAH. That assessment starts on the premise that an advantage is excluded if the purchase price of EUR [...] (\*) corresponds to at least the market price.
- (279) The call for expression of interest for SEAH assets was published on 12 November 2014 in the Supplement to the *Official Journal of the European Union*. In view of the large number of items, the liquidator, with the assistance of independent consulting company IMQ, decided to divide the items into nine lots. According to SEAH, the reason was to avoid inefficiency due to excessive fragmentation. With a view to attracting as many bidders as possible, each lot was defined as a stand-alone combination of assets, including items which are complementary and of different values. An external expert had set a minimum price for each of the lots.
- (280) The sale procedure was restricted to handlers, airport operators, air carriers, manufacturers of the types of equipment sold, resellers and leasing companies fulfilling certain minimum-solvency criteria.
- (281) According to Italy, no formal expression of interest was received in the tender. SEAH only received informal communications from third parties aiming to explore the possibility of acquiring only certain assets however at lower prices than the ones indicated in the tender. Those communications were provided to the Commission in the investigation.
- (282) Italy submitted that following the negative outcome of the tender, SEAH's liquidator tried to raise the interest of potential purchasers of SEAH's assets, by contacting certain operators active in the handling services sector, as well as those operators that had informally expressed their interest during the tender procedure, and by allowing access to the data room as well as to assets, so as to enable any interested operator to inspect the assets on site.

<sup>(33)</sup> Case C-277/00 *Germany v Commission* ('SMI'), ECLI:EU:C:2004:238, paragraph 88.

(\*) Business secret.

- (283) Some notices of interest to purchase SEAH's equipment were received as a result, however still at prices lower than those indicated in the tender. In the end, the only credible purchaser interested in the purchase of SEAH's equipment was Airport Handling.
- (284) The Commission assessed whether the bidding procedure in question effectively addressed the market, so that its failure can be seen as an indication that the market was not interested in purchasing SEAH's assets. The Commission assumes a bidding procedure to be effectively open to the market and geared towards revenue maximisation if the procedure is open, transparent, non-discriminatory and non-conditional.
- (285) As to the openness of the procedure in question, the Commission notes that the sale was published in the Supplement to the Official Journal of the EU and thus was given adequately wide publicity.
- (286) The procedure was however restricted to certain types of buyers, namely handlers, airport operators, air carriers, producers, resellers and leasing companies meeting certain minimum-solvency criteria (recital 193 above).
- (287) Further, the Italian authorities have not brought forward valid reasons for *a priori* restricting the range of potential buyers. Therefore, the bidding procedure was not fully open, as eligibility criteria may have limited the bidding procedure such that the public owner could not be sure of receiving the economically most favourable offer.
- (288) In practice however, the Commission takes the view that there are no indications suggesting that, had the tender not been limited to ground handling operators or related businesses, the tender would have been successful. This is corroborated by the fact that the attempts to attract bidders informally outside the scope of the tender procedure also failed to produce bids reaching the requested prices.
- (289) SEAH's liquidator received a number of expressions of interest to purchase SEAH's equipment at prices lower than those indicated in the bidder procedure. This is sufficient indication that market operators outside the restricted field of initially eligible bidders were not ready to pay the price asked for by SEAH.
- (290) The above described outcome of both the sales procedure and the negotiations between SEAH as seller and Airport Handling as buyer indicate that the initial asking price was above the price that market operators were ready to pay. In particular, SEAH's liquidator as seller negotiated at arm's length, in order to obtain the maximum economic benefit from the sale of the assets concerned. Documentation provided by the Italian authorities shows that the offer made by Airport Handling was indeed the economically most advantageous offer SEAH had received. Airport Handling, in turn, had economic reasons to acquire the assets despite SEAH's refusal to grant a discount or more favourable payment terms. The purchase price can be considered to be at least the market price. Hence, there is no indication that Airport Handling through the purchase of part of SEAH's assets received any advantage that would stem from previous unlawful aid to SEAH.

#### 7.1.2.4. Conclusion on the Market Price as potential indicator of economic continuity

- (291) In light of the above, the Commission concludes that the circumstances of the lease and the subsequent sale are effectively excluding any transfer of economic advantage from SEAH to Airport Handling. Hence, lease price and purchase price cannot be held as an indicator of economic continuity in this case.

#### 7.1.3. Identity of the shareholders

- (292) In the 2014 opening decision, the Commission noted that Italy undertook to entrust the management of Airport Handling to an independent trustee for a period of 3 years<sup>(34)</sup>. Moreover, Italy proposed to open 20 % of Airport Handling's share capital to investors. The Commission then found, firstly, that the ground handling business would have the same owner, SEA, and secondly, that Italy's proposal to tender out 20 % of the capital of the new ground handling provider was not sufficient to guarantee discontinuity from SEAH since first, the proposal is only limited to a minority shareholding and second, no guarantees have been provided in this respect. Moreover, this opening of the capital would only occur after the entry of Airport Handling on the market.

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<sup>(34)</sup> Recital 16 of the opening decision.

- (293) In the course of the investigation, Italy alleged that the setting-up of the Trust would guarantee the absence of continuity between SEAH and Airport Handling. The Trustee would ensure the independent management of SEA's participation in Airport Handling, assuming sole control over the company and thus guaranteeing the absence of any interest and/or information flow between Airport Handling and the SEA group.
- (294) The Commission assessed the chronological and material characteristics of identity of ownership in the case in question.
- (295) First, as regards chronology, the Commission notes that SEA established Airport Handling on 9 September 2013. The Trust was incorporated on 30 June 2014; the Trust Deed was signed on the same day. The Commission notes that the Trust took over the actual management of Airport Handling only later, on 27 August 2014, when SEA transferred the entire holding of Airport Handling to the Trust and appointed a trustee. The latter, in turn, then appointed a new Board of Directors of Airport Handling. Airport Handling started operations a few days later, on 1 September 2014. The Commission however notes that according to available information, the company had already carried out economic activities by offering its services on the market before that date, and apparently as early as April 2014, as a number of service contracts had [...] (\*) been concluded<sup>(35)</sup>. Then however, Airport Handling was fully owned and controlled by SEA.
- (296) Second, as regards the material characteristics of the transition of ownership and control to the Trust, the Commission assessed if the fact that Airport Handling shortly before it started operations was temporarily managed by a Trustee was sufficient to exclude that SEA could exercise rights in respect of the management of Airport Handling in that it may unilaterally take commercial decisions. In that respect, the Commission notes the following:
- (297) According to the Trust Deed, the activity of the Trustee is subject to certain material constraints, notably the Trustee is not required to investigate:
- whether representatives of SEA have participated to the negotiations with the employees to be re-employed by Airport Handling,
  - that SEA outsources personnel to Airport Handling, including its Director-General,
  - that certain central services, including investor relations and customer care, will continue to be provided by SEA,
  - that funding decisions are entirely left to the discretion of SEA.
- (298) In addition, although based on the Trust Deed the management of Airport Handling is supposed to be separate of that of SEAH, Airport Handling is being managed by the former head of Aviation Business Development of SEA.
- (299) Indeed, the Commission notes that SEA seconded two senior managers to AH. Both of them are currently holding senior management positions at Airport Handling. According to Italy there would be no hierarchical relationship between SEA and those managers and the latter would not perform any activity in favour of SEA. Their remuneration would also be independently determined by Airport Handling.
- (300) According to Italy, SEA's decision of seconding those managers to Airport Handling was taken with a view to Italy's proposals concerning the opening-up of Airport Handling's capital to third parties. For that purpose, it would have been necessary to ensure, on one hand, that Airport Handling's management was fully qualified and, on the other hand, that the conditions of employment of the managers were flexible. In fact, Italy clarified that Airport Handling signed secondment contracts with SEA for [...] (\*) employees.
- (301) In conclusion, the Commission finds that both the chronology and the material provisions of the entrustment confirm that SEA throughout Airport Handling's start-up phase and entry into economic activities has enjoyed control over that company to an extent which, albeit varying, continuously ensured significant influence over its day-to-day management.
- (302) The Commission took note of the above described Framework Investment Agreement of 21 September 2015, between the Trustee and private market operator D'Nata, concerning the sale of a [...] (\*) % stake in Airport Handling, in combination with the right to appoint the majority of the board of directors and also the CEO of Airport Handling, and further concerning an option to acquire a further [...] (\*) % stake in Airport Handling.

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(\*) Business secret.

(<sup>35</sup>) Dates of signature of contract according to a list provided by Italy: e.g. [...] (\*).

- (303) D'Nata will have effective control over Airport Handling when it will have appointed the majority of the board of directors and also the CEO of Airport Handling. Moreover, available information on the bidding process, which was organised independently of both SEA and the Trustee by a private bank, confirms that D'Nata acquired a stake in Airport Handling at the market price. Lastly, available information confirms that D'Nata is not identical with, or otherwise linked to, SEA.
- (304) Nevertheless, the transfer of control over Airport Handling from SEA and the Trustee to D'Nata took place more than 2 years after SEA had established Airport Handling, and more than 1 year after that company had started operations.
- (305) Therefore, the Commission cannot conclude solely on the basis of the criterion regarding the identity of the shareholders that there is no economic continuity. Nevertheless, the Commission assessed this criterion together with the other relevant criteria, in order to conclude whether the absence of economic continuity can be established.

#### 7.1.4. *Timing of the transaction*

- (306) The liquidation of SEAH on 1 July 2014 and the establishment of Airport Handling on 9 September 2013 took place after the Commission, on 12 December 2012, had adopted the recovery decision. The company in liquidation ensured ground handling operations until Airport Handling started operations on 1 September 2014.
- (307) The timing of events thus could *prima facie* be an indication that the process which culminated in the creation of Airport Handling had the effect of circumventing the recovery decision, which had been adopted before that process was carried out. The Commission however recalls that case-law does not require the Commission to examine, in particular and over and above the other criteria, the time at which the transfer of assets took place, which is one of the factors which 'may' be taken into consideration in order to set aside the economic continuity between those two entities <sup>(36)</sup>.

#### 7.1.5. *Economic logic of the transaction*

- (308) Available information confirms that Airport Handling in essence continues the same type of business activities of SEAH, namely offering airport handling services at Linate and Malpensa airports.
- (309) In that respect, the Commission refers to case law according to which the mere circumstance that the acquirer is in fact continuing the business of an undertaking that is obliged to reimburse aid does not necessarily mean that the former undertaking enjoyed the competitive advantage linked with the aid granted to the latter. In the specific case referred to, the former undertaking leased a plant at a market price from the undertaking that had received aid almost 3 years before the creation of the former undertaking <sup>(37)</sup>. The Commission recalls that in the case at issue, Airport Handling has leased, then purchased, SEAH's assets at a price that can be deemed at least the market price, and that the unlawful aid that is to be recovered from SEAH was granted during the years 2002-2010, i.e. 3 years before Airport Handling was incorporated and 4 years before Airport Handling started its economic activity.
- (310) More particularly as regards the economic logic of the transaction, the Commission notes the following:
- (311) As was described above in points 2.6.1 and 2.6.2, Airport Handling's business plan differs from SEAH's in a number of points, in particular:
- [...] <sup>(\*)</sup>,
  - [...] <sup>(\*)</sup>,
  - [...] <sup>(\*)</sup>,
  - [...] <sup>(\*)</sup>,
  - [...] <sup>(\*)</sup>,
  - [...] <sup>(\*)</sup>.

<sup>(36)</sup> Case T-123/09 *Ryanair v Commission*, ECLI:EU:T:2012:164, paragraph 156.

<sup>(37)</sup> Case C-277/00 *Germany v Commission* ('SMI'), ECLI:EU:C:2004:238, paragraphs 86-89.

<sup>(\*)</sup> Business secret.

- (312) Hence, Airport Handling managed its activities under different operating conditions than SEAH's, under its own business plan. Moreover, the Italian authorities did not require Airport Handling to follow a specific business model nor to maintain a certain scope of activities, nor to take over any specific assets or employees.

#### *7.1.6. Overall conclusion on economic continuity from SEAH to Airport Handling*

- (313) In the Commission's view, the case at hand contains both, elements which would argue in favour of economic continuity and elements which would support the opposite finding.
- (314) On the side of the elements supporting a finding of economic continuity, the Commission identified the fact that it was the former owner of SEAH who created Airport Handling, a company active in the same business as SEAH, which recruited its initial workforce of Airport Handling almost exclusively from former SEAH employees and took over a large part of the assets, all this after the Commission's recovery decision.
- (315) However, a number of other factors rather indicate that Airport Handling was not set up as a circumvention company but rather as a genuinely new company. The strongest element in this respect is that the client portfolio had to be newly created by approaching the airlines with offers independent from previous SEAH contracts and by concluding new agreements at new conditions with them. Airport Handling therefore had to newly acquire its customers and gain market shares such as any competitor or new entrant would have had to do. Considering that the client portfolio is the basis for the ground handling business, the Commission attributes a high weight to this element.
- (316) As regards assets taken over from SEAH, Airport Handling paid at least a market price for the lease of the assets and later, when it purchased part of the assets, paid a price that was at least the price market operators were ready to pay.
- (317) Further, the workforce was not block transferred. Airport Handling concluded new contracts at new conditions. Any competitor or new entrant would have had the same possibility to recruit former SEAH employees, and the former SEAH workers just seemed the most appropriate target for new recruitments. Only a part of the assets was transferred; in addition they represent only a minor part of the overall production factor in the ground handling business.
- (318) With respect to the economic logic of the operation, Airport Handling manages its activities under different operating conditions than SEAH's and under its own business plan. Moreover, the Italian authorities did not require Airport Handling to follow a specific business model nor to maintain a certain scope of activities, nor to take over any specific assets or employees.
- (319) Against that backdrop, the Commission considers that on balance, there is no economic continuity between SEAH and Airport Handling and the creation of the latter cannot be regarded as a circumvention of the recovery decision. Consequently, Airport Handling cannot be held liable to repay the aid found incompatible in the recovery decision.

#### **7.2. SEA's investment in Airport Handling — existence of State aid**

- (320) According to Article 107(1) of the Treaty 'any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market'.
- (321) The criteria laid down in Article 107(1) of the Treaty are cumulative. Therefore, in order to determine whether the measures constitute State aid within the meaning of Article 107(1) of the Treaty, all the above-mentioned conditions need to be fulfilled. Namely, the financial support should:
- (a) be granted by a Member State or through State resources;
  - (b) favour certain undertakings or the production of certain goods;

(c) distort or threaten to distort competition;

(d) affect trade between Member States.

7.2.1. *Selective economic advantage — the market economy investor principle*

- (322) Italy is of the opinion that SEA's injection in Airport Handling's capital complied with the market economy investor principle and thus no advantage was granted to Airport Handling, and therefore the measure did not constitute State aid. Even though SEAH had consistently recorded losses since 2000, it would be legitimate to assume that Airport Handling's activity would in turn yield a sufficient return to render the equity injection profitable, notably in view of the actions laid down in the business plan for Airport Handling for 2014-2017. When deciding to invest in the capital of Airport Handling, SEA would therefore have acted as a prudent market investor.
- (323) For the purposes of the market economy investor principle assessment, it is necessary to determine whether, in similar circumstances as those surrounding the adoption of the measure under assessment, a hypothetical market economy investor, guided by profitability prospects, and not public policy objectives, would have behaved in a similar way. In order to examine whether or not the State has adopted the conduct of a prudent investor operating in a market economy, it is necessary to place oneself in the context of the period during which the financial support measures were taken in order to assess the economic rationality of the State's conduct, and thus to refrain from any assessment based on a later situation <sup>(38)</sup>.
- (324) Consequently, the market economy rationale of a public investment must be assessed having regard to the information available and developments foreseeable at the time when the investment was made <sup>(39)</sup>.
- (325) In the course of the investigation Italy explained that the decision to invest in Airport Handling was based on the business plan of 6 August 2014. However, the Commission observes that this business plan is dated only after the final decision to increase the capital of the company up to EUR 25 million was taken on 30 June 2014. The Commission considers that the initial decision to set up Airport Handling and invest EUR 25 million must have been taken at the latest prior to establishing the company on 9 September 2013. The business plan available to the Commission which is closest to that date is the business plan of 14 November 2013. The Commission also observes that this business plan already assumes the investment of EUR 25 million. Therefore the Commission considers that the business plan of November 2013 is the relevant one for testing the market economy investor principle.
- (326) In the 2014 opening decision, the Commission expressed doubts that SEA acted as a market economy investor. First, because SEA did not consider the risk of Airport Handling being liable to repay incompatible aid previously granted to SEAH following a finding of economic continuity by the Commission. Second, the Commission doubted whether the business plan, underpinning SEA's decision to invest in Airport Handling relied on sufficiently plausible assumptions. Ultimately the Commission has to assess if the decision to invest in Airport Handling is taken on market terms. In other words, the Commission has to assess if the investor could have expected a reasonable return taking into account the foreseeable risks related to the investment.

7.2.2. *Risk mitigation measures taken by SEA*

- (327) As regards the first doubt, the Commission observes that SEA was aware of the risk of finding economic continuity and has taken risk mitigation measures:
- (328) SEA was aware of such risk, as shown by the documents submitted to the Commission in the context of the pre-notification of November 2013. The risk that liability could be transferred to Airport Handling through economic continuity from SEAH was a legal risk. Perception and weighing of the risk and adequate risk mitigation measures depend on legal assumptions made at the time of the investment.

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<sup>(38)</sup> Case C-482/99 France v Commission, cited, paragraph 71.

<sup>(39)</sup> Case T-16/96 Cityflyer Express v Commission [1998] ECR II-757, paragraph 76.



- (329) Available information shows that SEA had considered the following work force related risk mitigation measures: In the agreement between SEA and the Trade Unions, of 4 November 2013, SEA declared that ‘fundamental importance was attributed to the requirement for “discontinuity”, which must form part of any alternative solution to payment in money, as a guarantee that it is not possible for the obligation to recover the aid to be extended to any third party.’ In the course of negotiations on the partial transfer of the workforce from SEAH to Airport Handling, work structure and certain employment conditions were materially altered as explained in detail in recitals 232-234 above. The applicable principles were set out in the above described Implementing Agreements with the Trade Unions, of 4 June 2014 and had already been announced in the agreement with the Trade Unions of 13 November 2013, and thus prior to implementing of the two major capital injections of 10 March and 30 June 2014 (recitals 45 and 46 above).
- (330) SEA put in place the following risk mitigating measures to ensure discontinuity from the assets transfer of SEAH: First, the Trustee excluded Airport Handling from the public bidding procedure for the sale of the assets. Second, Airport Handling leased assets from SEAH against a market lease fee which was determined by two independent expert reports.
- (331) SEA took measures to ensure discontinuity of Airport Handling from the SEAH also in view of the customer base. The customers of SEAH were informed in advance about the liquidation of the company. New service contracts with new financial conditions were signed with the airlines which chose Airport Handling as their service provider.
- (332) As a further risk mitigation measure, SEA set up a Trust. As explained in Section 2.3 above the main purpose of the Trust was to act as sole shareholder of Airport Handling and ensure that Airport Handling operated in economic discontinuity with SEAH.
- (333) The Commission notes that the risk arising from a possible future liability to repay the aid is not mentioned in Airport Handling’s business plan of November 2013. In that respect, the Commission observes that SEA made that business plan for its own purposes. Being the mother company of an established market player in ground handling and demonstrably being aware of the risks arising from various factors of continuity, SEA was in a position to take informed investment decisions without explicitly mentioning that risk in that business plan. Additionally, the final decision to raise the capital up to EUR 25 million was taken only after the risk mitigating measures were ensured. Moreover, the above described external evaluation of the November 2013 business plan (recital 114 above) confirms that a rational investor would have judged the probability of economic continuity, and thus the liability to repay the aid, to be less than [...] (\*) %, and therefore would have found it economically rational to invest in AH.

#### 7.2.3. *Airport Handling’s business plan*

- (334) As regards the second doubt, namely whether the business plan underpinning SEA’s decision to invest in Airport Handling relies on sufficiently plausible assumptions, the Commission makes the following observations:

##### 7.2.3.1. Assumptions on traffic development STOP

- (335) Air traffic forecasts at Milan airports, combined with Airport Handling’s market shares, are a determining factor in that company’s business plan. As confirmed by external experts (BCG) who evaluated Airport Handling’s business plans, the company’s traffic forecasts are coherent with the forecasts issued by IATA and Eurocontrol. The Commission considers those bodies as reliable data sources to make traffic forecasts in the aviation sector. As regards the application of these forecasts to Malpensa airport, the Commission notes that according to the BCG report, Airport Handling’s intention to maintain a constant mix of carriers on that airport would not be in line with historical developments and that a new regulation could lead to the relocation of some carriers to Linate.

##### 7.2.3.2. Assumptions on personnel costs

- (336) According to the business plan of November 2013, personnel costs on average constitute [...] (\*) % of operating costs in the period 2014-2017.
- (337) The Commission assessed the plausibility of the assumptions underlying that significant cost item.

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(\*) Business secret.

- (338) First, the Commission notes that in light of the Brattle report, the percentage of personnel costs over total operating costs forecasted by Airport Handling is broadly in line with the cost structure of the European ground handling industry, which shows an incidence of personnel costs over total operating costs amounting to 65 %-80 %. In that respect, the report refers to the figures mentioned in the Commission's impact assessment accompanying its proposal for a new ground handling Regulation<sup>(40)</sup>.
- (339) Second, on the basis of information provided by Italy, the Commission notes that Airport Handling's average hourly personnel costs per FTE seems to be [...] (\*). The average hourly personnel cost in the business plan of November 2013 is EUR [...] (\*), and EUR [...] (\*) in the business plan of August 2014, which is respectively [...] (\*) than the average hourly costs paid by SEAH in 2013 of about EUR[...] (\*)<sup>(41)</sup>. The Brattle report confirms that Airport Handling achieved these labour costs in reality and therefore concludes that the business plan was not overly optimistic.
- (340) The Commission finds that the assumed decrease in labour costs does not seem unrealistic in view of the typical cost structure in the industry.

#### 7.2.3.3. Assumptions on market share

- (341) The Commission expressed concerns about the relatively high market share assumptions of Airport Handling's business plan of November 2013. The market share for ramp-services is foreseen at [60-70] (\*) % in 2014 and rises to [70-80] (\*) % in 2017. The market share for passenger services is foreseen at [60-70] (\*) % in 2014 and rises to [60-70] (\*) % in 2017.
- (342) In 2013, SEAH's overall market share was [70-80] (\*) %<sup>(42)</sup>. The Commission observes that the anticipated market share of Airport Handling is below the market share of SEAH. Consequently, it was not expected that Airport Handling received all SEAH contracts. Certain losses in the market share of the new company are in fact taken into consideration.
- (343) Airport Handling's strategy is to offer a higher level of availability compared to other handlers at Linate and Malpensa. It guarantees a 24-hour service so that ground-handling services are provided even if a plane arrives late. This is a competitive advantage which can be particularly valuable for air carriers with significant operations and high flight frequencies at Milan airports, such as Alitalia and EasyJet. These air carriers may be inclined to remain with the supplier who is able to provide these services. This can reasonably explain why Airport Handling could expect a relatively high market share from the launch of its operations.
- (344) The Commission also observes that, as noted in the Brattle report, based on 2013 data, Airport Handling's anticipated market share was lower as compared to that estimated for larger ground handling providers at other Italian airports: (i) Bergamo (78,23 %); (ii) Cagliari (75,61 %); (iii) Catania (77,18 %); (iv) Palermo (75,85 %); (v) Torino (68,8 %).
- (345) Moreover, the Commission notes that the market share Airport Handling achieved in 2014 is in fact higher than the one predicted in the November 2013 business plan. Such a high market share can mainly be explained by the fact that Airport Handling managed to sign contracts with [...] (\*). Together they account for a significant share of the traffic at the two airports, namely [...] (\*) % of Linate's and [...] (\*) % of Malpensa's air traffic.

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<sup>(40)</sup> Annex to the Impact Assessment, Accompanying the document 'Proposal for a Regulation of the European Parliament and of the Council on groundhandling services at Union airports and repealing Council Directive 96/67/EC', of 16.1.2012, SEC(2011) 1439 final. On p. 95 of that document, the Commission notes that 'The liberalisation of groundhandling services and the end of monopolies or (airport/hub carrier) duopolies at airports have meant that groundhandling providers have had to adapt in order to become more competitive and have had to deal with tougher competition. The most visible consequence for groundhandling workers was the increase in work productivity and flexibility. Groundhandling providers often explain that this increase in work productivity is imperative as staff costs amount to 65-80 % of their total costs, while workers' associations usually claim that groundhandling companies focus too much on the work factor to reduce costs.'

(\*) Business secret.

<sup>(41)</sup> According to the Brattle report paragraph 48, p. 11.

<sup>(42)</sup> Brattle report paragraph 40, p. 9

- (346) In conclusion, the Commission does not doubt the plausibility of Airport Handling's market share assumptions: First, they are based on competitive advantages offered by Airport Handling. Second, these assumptions seem to be conservative, compared to the market shares of a peer group of airport handling companies at the time when the business plan was drawn up. The Commission also notes that these assumptions materialised in practice.

#### 7.2.3.4. Assumptions on profitability

- (347) The business plan of November 2013 anticipates [...] (\*) EBIT and a [...] (\*) pre-tax profit as from the second year of operation. EBIT and after-tax profit [...] (\*). The business plan of November 2013 does not show the usual metrics of profitability such as for example internal rate of return (IRR) or net present value (NPV). However, the Brattle report presents these calculations based on the numbers in the business plan.
- (348) In order to invest in Airport Handling a rational private investor must expect a return equal to, or greater, than its opportunity cost of capital which can be approximated by the weighted average cost of capital (WACC).
- (349) The Brattle report calculates the equity IRR of the investment in Airport Handling and checks if it is equal to or higher than its WACC. The report uses two alternative values of the WACC. The first one is [...] (\*) % which is according to the report the unlevered post-tax WACC used in the business plan<sup>(43)</sup>. The second one is [...] (\*) % and is calculated in the report as the lower bound of the opportunity cost of capital. Depending on the terminal value of the investment, the Brattle report estimates that the expected equity return of the investment in Airport Handling ranges from [...] (\*) % to [...] (\*) %. The calculations show that in all scenarios the expected IRR exceeds the opportunity cost of capital and therefore the investment is profitable.
- (350) The Commission observes that the time horizon of the business plan (2014-2017) is relatively short. For that reason the business plan can be sensitive to variations of the underlying assumptions. However, that time line is to be seen in the light of the following facts. First, the business plan was drawn up for the airport operator SEA, which has owned an airport handling subsidiary for many years. Second, restructuring was already in progress and significant productivity gains had already been achieved in SEAH. Therefore it appears not unreasonable to limit the scope of the business plan, to the minimum necessary for an experienced investor such as SEA.
- (351) The Commission notes that some of the key assumptions of the business plan of November 2013 broadly materialised, in particular in terms of profitability and market shares. Airport Handling was already profitable in its first year of operations: According to the profit-and-loss account for September 2014 until August 2015, the company generated EBIT of EUR [...] (\*).
- (352) In conclusion the Commission considers that using assumptions as to evolution of labour costs and the market share which do not appear unreasonable, the business plan shows a sufficiently high return on equity to SEA for the capital injection of EUR 25 million.

#### 7.2.4. Conclusion on selective economic advantage

- (353) The Commission concludes that SEA has taken sufficient measures to limit the risks of finding of economic continuity. The business plan was based on assumptions which a rational private investor, who has significant experience in the airport handling industry and who aims to restructure the company, would have deemed plausible and sufficient to establish Airport Handling's future profitability. SEA's investment in Airport Handling therefore does not constitute an advantage that Airport Handling could not have obtained under normal market conditions.

#### 7.2.5. Conclusion on the presence of State aid in SEA's investment in Airport Handling

- (354) The investment does not contain any advantage that Airport handling could not have obtained under normal market conditions. Hence, one of the cumulative criteria pursuant to Article 107(1) of the TFEU is not met. Consequently, the investment does not constitute State aid within the meaning of Article 107(1) of the TFEU,

(\*) Business secret.

<sup>(43)</sup> This WACC is according to the Brattle report higher, because it takes into account project specific risks through an increase in the equity beta.

HAS ADOPTED THIS DECISION:

*Article 1*

1. The process that led to the liquidation of SEA Handling SpA and the creation of Airport Handling SpA did not give rise to economic continuity between the former and the latter undertaking.
2. Airport Handling is not liable to repay the State aid found incompatible with the internal market in Commission Decision C(2012) 9448 of 19 December 2012, corrected by decision C(2013) 1668 of 22 March 2013 concerning aid granted by SEA to its subsidiary SEA Handling SpA during the years 2002-2010.

*Article 2*

The setting-up and capitalisation which Italy has implemented for Airport Handling SpA, amounting to EUR 25 million does not constitute aid within the meaning of Article 107(1) of the Treaty on the Functioning of the European Union.

*Article 3*

This Decision is addressed to the Italian Republic.

Done at Brussels, 5 July 2016.

*For the Commission*

Margrethe VESTAGER

*Member of the Commission*

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## COMMISSION DECISION (EU) 2017/2112

of 6 March 2017

**on the measure/aid scheme/State aid SA.38454 — 2015/C (ex 2015/N) which Hungary is planning to implement for supporting the development of two new nuclear reactors at Paks II nuclear power station**

*(notified under document C(2017) 1486)***(Only the English version is authentic)****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular the first subparagraph of Article 108(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments <sup>(1)</sup> and having regard to their comments,

Whereas:

**1. PROCEDURE**

- (1) On the basis of press articles and informal contacts with the Hungarian authorities, on 13 March 2014, the Commission started a preliminary investigation into possible State aid involved in the construction of Paks II nuclear power plant ('Paks II') under the case number SA.38454 (2014/CP).
- (2) After several exchanges of information and formal meetings, the Hungarian authorities notified the measure for legal certainty on 22 May 2015 stating that the project involved no State aid within the meaning of Article 107 of the Treaty on the Functioning of the European Union ('TFEU').
- (3) By letter dated 22 May 2015, Hungary notified the Commission a measure to provide financial contribution for the development of two new nuclear reactors in the Paks site.
- (4) By letter dated 23 November 2015, the Commission informed Hungary that it had decided to initiate the procedure laid down in Article 108(2) TFEU in respect of the measure (the Opening Decision). This Commission Decision was published in the *Official Journal of the European Union* <sup>(2)</sup>. The Commission invited interested parties to submit their comments.
- (5) Hungary sent its comments on the Opening Decision on 29 January 2016.
- (6) The Commission received comments from interested parties. It forwarded them to Hungary, which was given the opportunity to react. Its comments were received by letter dated 7 April 2016.
- (7) Further information was submitted by Hungary on 21 April, 27 May, 9 June, 16 June, 28 July 2016, 16 January 2017 and 20 February 2017.
- (8) On 12 September 2016 the Hungarian authorities provided a language waiver and agreed that the decision will be adopted in English as the authentic language.

**2. DETAILED DESCRIPTION OF THE MEASURE****2.1. DESCRIPTION OF THE PROJECT**

- (9) The measure consists of the development of two new nuclear reactors (units 5 and 6) in Hungary, whose construction is fully financed by the Hungarian State for the benefit of the entity Paks II (MVM Paks II Nuclear Power Plant Development Private Company Limited by Shares) that will own and operate the new reactors.

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<sup>(1)</sup> OJ C 8, 12.1.2016, p. 2.

<sup>(2)</sup> See footnote 1.

- (10) The Russian Federation and Hungary concluded an intergovernmental agreement (IGA) on a nuclear programme on 14 January 2014 <sup>(3)</sup>. Based on the IGA, both countries shall cooperate in the maintenance and further development of the current Paks nuclear power plant (Paks NPP). This includes the design, construction, commissioning and decommissioning of two new power units 5 and 6 with VVER (water-cooled water moderated) type reactors with installed capacity of each power unit of at least 1 000 MW <sup>(4)</sup> in addition to the existing power units 1-4. The operation of units 5 and 6 is intended to compensate for the loss in capacity when units 1-4 (2 000 MW altogether) retire. Hungary submitted that units 1-4 will be in operation until the end of 2032, 2034, 2036 and 2037 respectively, without envisaged prospect of further lifetime extension.
- (11) Pursuant to the IGA <sup>(5)</sup> both Russia and Hungary would designate one experienced State-owned and State-controlled organisation which would be financially and technically responsible for fulfilling its obligations as contractor/owner in relation to the Project.
- (12) Russia has appointed Joint-Stock Company *Nizhny Novgorod Engineering Company Atomenergoproekt* (JSC NIAEP) to construct the new reactors (units 5 and 6) and Hungary has appointed *MVM Paks II Nuclear Power Plant Development Private Company Limited by Shares* <sup>(6)</sup> ('Paks II') to own and operate the two reactors.
- (13) Whilst the IGA sets out the general rights and obligations of nuclear cooperation between the two countries, the detailed implementation of the IGA is to be specified in separate agreements called the 'Implementation Agreements' <sup>(7)</sup> as follows:
- (a) the engineering, procurement and construction contract for the construction of the two new VVER 1200 (V491) units 5 and 6 at the Paks site is to be called the 'EPC Contract';
  - (b) the contract stipulating the terms and conditions for the cooperation on operation and maintenance of the new reactors is to be called the 'O&M contract';
  - (c) the agreement on the terms for fuel supply and management of spent fuel.
- (14) JSC NIAEP and Paks II concluded the EPC Contract on 9 December 2014, which stipulates that the two new units 5 and 6 are meant to start operation in 2025 and 2026 respectively.
- (15) Separately, Russia undertook to provide Hungary with a state loan to finance the development of Paks II. This loan is governed by a Financing Intergovernmental Agreement (the Financing IGA) <sup>(8)</sup> and provides a revolving credit facility of EUR 10 billion which is limited to the sole use of the design, construction and commissioning of power units 5 and 6 at Paks II. Hungary will use this revolving credit facility to directly finance the investments in Paks II necessary for the designing, construction and commissioning of the new power units 5 and 6, as set out by the Financing IGA. Further to the Financing IGA, Hungary will provide an additional amount of up to EUR 2,5 billion from its own budget to finance the investment at Paks II.
- (16) Other than the investment support outlined in recital 15, Hungary does not intend to grant any other financial support to Paks II once power units 5 and 6 have been constructed. The new units will operate under market conditions without any fixed amount of revenues or guaranteed price. Hungary considers that at this stage raising any debt directly by Paks II will not be necessary.

<sup>(3)</sup> Agreement between the Government of the Russian Federation and the Government of Hungary on cooperation on peaceful use of nuclear energy, concluded on 14 January 2014 and ratified in Hungary by Act II of 2014 of the Hungarian Parliament (2014. évi II. törvény a Magyarország Kormánya és az Oroszországi Föderáció Kormánya közötti nukleáris energia békés célú felhasználása terén folytatandó együttműködésről szóló Egyezmény kihirdetéséről).

<sup>(4)</sup> The reactors are assumed by the Hungarian authorities to have 1 180 MW net capacity per unit.

<sup>(5)</sup> Article 3 of the IGA.

<sup>(6)</sup> Government Resolution 1429/2014. (VII. 31.) (A Kormány 1429/2014. (VII. 31.) Korm. Határozata a Magyarország Kormánya és az Oroszországi Föderáció Kormánya közötti nukleáris energia békés célú felhasználása terén folytatandó együttműködésről szóló Egyezmény kihirdetéséről szóló 2014. évi II. törvény szerinti Magyar Kijelölt Szervezet kijelölése érdekében szükséges intézkedésről).

<sup>(7)</sup> Article 8 of the IGA.

<sup>(8)</sup> Agreement between the Government of the Russian Federation and the Government of Hungary on the extension of a state credit to the Government of Hungary for financing the construction of a nuclear power plant in Hungary, concluded on 28 March 2014.



## 2.2. OBJECTIVE OF THE MEASURE

- (17) As explained in the Opening Decision, Paks NPP is the only nuclear power plant operating in Hungary. It belongs to the 100 % State-owned electricity trader and power producer Magyar Villamos Művek Zártkörűen Működő Részvénytársaság ('the MVM Group') <sup>(9)</sup>. Its four units have a total installed capacity of 2 000 MW, each one of which is currently equipped with Russian technology (VVER-440/V213). The units will be gradually phased out by 2037 (see recital 10).
- (18) Electricity generation from nuclear sources plays a strategic role in Hungary's energy mix, as approximately 50 % of the overall domestically generated electricity comes from the existing four reactors at Paks NPP <sup>(10)</sup>.
- (19) Based on the following objectives:
- maintaining a sensible share of national resources, and
  - reducing Hungarian dependence on imports whilst remaining consistent with national climate policy,

the Government requested MVM Group to investigate the alternatives to the expansion of electricity production in nuclear power plants. A Feasibility Study was prepared by MVM Group that explored the implementation and financing of a new nuclear power plant that could be integrated into the electricity system and that could be operated in an economical, safe and environmentally friendly way. Based on this Feasibility Study presented in 2008 by the MVM Group, the Government proposed the project to the Hungarian Parliament, which consented to the start of preparatory work for the implementation of new nuclear power plant units at the Paks site <sup>(11)</sup>. This was supported by calculations which showed that the retirement of 6 000 MW from the 8-9 000 MW gross installed capacity was forecast by 2025 as a result of the shutdown of the obsolete power plants. These plants were due to be partly replaced by the expansion of the Paks NPP.

- (20) In 2011 the National Energy Strategy for the period up to 2030 was implemented <sup>(12)</sup>. That strategy focusses on a Nuclear-Coal-Green scenario for Hungary. The Hungarian Transmission System Operator (the 'TSO'), MAVIR, projects that there will be a need for at least 5,3 GW of new generation capacity in Hungary by 2026, and somewhat more than 7 GW by 2031 as a result of future demand and the retirement of existing generation capacity in Hungary <sup>(13)</sup>. MAVIR also forecasts that almost all of the current coal generation fleet will have retired between 2025 and 2030, and that the installed capacity of Hungary's gas-fleet will have declined by approximately 1 GW, as shown in Table 1 submitted by Hungary on 16 January 2017. Hungary explained that MAVIR's study does not take into account any imports, or new installed capacities in the projection of the required 7 GW of new capacity.

Table 1

**Expected phase-outs of domestic installed capacities by 2031**

|             | MW       |           |
|-------------|----------|-----------|
|             | Existing | Phase-out |
| Nuclear     | 2 000    |           |
| Coal        | 1 292    | 1 222     |
| Natural gas | 3 084    | 960       |

<sup>(9)</sup> See recital 18 of the Opening Decision for more information on the MVM Group.

<sup>(10)</sup> Data of the Hungarian Electricity System (Mavir, 2014) — [https://www.mavir.hu/documents/10262/160379/VER\\_2014.pdf/a0d9fe66-e8a0-4d17-abc2-3506612f83df](https://www.mavir.hu/documents/10262/160379/VER_2014.pdf/a0d9fe66-e8a0-4d17-abc2-3506612f83df), accessed on 26 October 2015.

<sup>(11)</sup> 25/2009. (IV.4.) OGY Határozat a paksi bővítés előkészítéséről.

<sup>(12)</sup> National Energy Strategy (Ministry of National Development, Hungary, 2011): <http://2010-2014.kormany.hu/download/7/d7/70000/Hungarian%20Energy%20Strategy%202030.pdf>

<sup>(13)</sup> A magyar villamosenergia-rendszer közép- és hosszú távú forrásoldali kapacitásfejlesztése (Medium- and long-term development of generation assets of the Hungarian electricity system): [https://www.mavir.hu/documents/10258/15461/Forr%C3%A1slemez%C3%A9s\\_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6-f84a](https://www.mavir.hu/documents/10258/15461/Forr%C3%A1slemez%C3%A9s_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6-f84a) (Mavir, 2016).

|   | MW       |           |
|---|----------|-----------|
|   | Existing | Phase-out |
| Oil                                       | 410      |           |
| Intermittent renewables/weather-dependent | 455      | 100       |
| Other renewables                          | 259      | 123       |
| Other non-renewables                      | 844      | 836       |
| Sum                                       | 8 344    | 3 241     |

Source: Hungarian authorities (Mavir)

- (21) Hungary and Russia signed the IGA with the objective of developing new capacities at the Paks site. Hungary explained that by keeping nuclear generation in the fuel mix, it could address the need to replace phased-out capacity, to develop new capacities and to meet Hungary's target as regards Union climate objectives (especially those related to the anticipated decrease of CO<sub>2</sub> emissions).

### 2.3. DESCRIPTION OF THE NEW UNITS — THE TECHNOLOGY TO BE DEPLOYED

- (22) The new units 5 and 6 at Paks II NPP will be equipped with VVER 1 200 (V491) technology and will be more advanced Generation III+ reactors. Hungary explains that the technical specifications of the units to be deployed at Paks II will give rise to notable advantages over the current Paks NPP units such as increased efficiency, and more economic operation in addition to enhanced safety features.
- (23) Apart from the significantly higher installed capacity of VVER 1 200 (V491), there is also a material difference in the envisaged operating lifetime (60 years for VVER 1 200 units as opposed to 30 years for the existing units of Paks NPP) and wider manoeuvrability, which allows for the capacity of each unit to be adjusted according to demand on the grid within a certain range.
- (24) The reduction in the amount of fuel required by the new units also reflects technological improvements in recent years. Instead of the existing 12-month fuel cycle, the new units can operate on an 18-month cycle. This means that the new units will require fewer shut-downs per year for fuel reloading and the plant will be able to operate for longer on average each year and not lose production time.
- (25) The technical specifications also indicate that the power density, which will be provided by the new fuel assemblies, will be significantly higher than the existing fuel assemblies. This in turn means that a higher output can be achieved per unit mass of fuel material, which may improve the economics of the plant.

### 2.4. THE BENEFICIARY

- (26) As explained in Section 2.3 of the Opening Decision, the beneficiary of the measure is the company Paks II, currently owned by the Hungarian State. The shareholder rights are exercised by the Prime Minister's Office. Paks II will own and operate the reactors units 5 and 6 that are paid for by the Hungarian State.
- (27) Recital 19 of the Opening Decision explains how the shares of Paks II held originally by the MVM Group were transferred to the Hungarian State<sup>(14)</sup>. According to the information submitted by Hungary on 30 January 2016, the purchase price of the transfer was HUF 10,156 billion, which equals approximately EUR 33 million.

<sup>(14)</sup> Decree of the Minister of National Development No 45/2014. (XI.14.) (45/2014. (XI.14.) NFM rendelet az MVM Paks II. Atomerőmű Fejlesztő Zártkörűen Működő Részvénytársaság felett az államot megillető tulajdonosi jogok és kötelezettségek összességét gyakorló szervezet kijelöléséről).

## 2.5. FINANCING STRUCTURE OF THE PROJECT AND RIGHTS AND OBLIGATIONS UNDER THE EPC CONTRACT

### 2.5.1. FINANCING INTERGOVERNMENTAL AGREEMENT (THE 'FINANCING IGA')

- (28) Within the framework of the IGA <sup>(15)</sup>, Russia provided Hungary with a state loan in the form of a revolving credit facility of EUR 10 billion to finance the development of nuclear power units 5 and 6 in Paks. The interest rate of the loan ranges between 3,95 % and 4,95 % <sup>(16)</sup>. The loan is earmarked for the design, construction and commissioning of those new power units.
- (29) Pursuant to the Financing IGA, the loan must be used by Hungary to finance 80 % of the value of the EPC contract for the execution of works and services and delivery of equipment, while the balance of 20 % of the EPC contract shall be paid by Hungary (see recital 15). The loan must be used by Hungary by 2025.
- (30) The loan must be repaid by Hungary within 21 years as of 15 March or 15 September following the date of commissioning of both of the new nuclear power units 5 and 6, but not later than 15 March 2026 <sup>(17)</sup>.
- (31) Payments under the Financing IGA may be made only once a request by the Ministry for National Economy of Hungary and a notice of approval by the Ministry of Finance of Russia have been issued.

### 2.5.2. THE EPC CONTRACT

- (32) According to the EPC contract, JSC NIAEP must deliver the two reactors as set out in the detailed technical specifications by the agreed dates and for the agreed lump sum price (EUR [...] (\*) billion). Every cost previously undefined is deemed to be included in this price [...] <sup>(18)</sup>.
- (33) The contract provides for liquidated damages <sup>(19)</sup> to be paid in specific circumstances, [...].
- (34) [...]
- (35) [...]

### 2.5.3. RELATIONSHIP BETWEEN THE STATE AND THE BENEFICIARY

- (36) Initially, Hungary had envisaged that Paks II would remain a 100 % subsidiary of MVM Hungarian Electricity Ltd, which itself is owned by the Hungarian State and municipalities. Since November 2014, Paks II is no longer a subsidiary of MVM Hungarian Electricity Ltd or part of the MVM Group but is a 100 % directly State-owned company that currently has no legal relationship with the MVM Group.
- (37) As regards the activity of Paks II, in particular the sale of electricity, Hungary stated that no separate power purchase agreement with a separate supplier is in place or is envisaged at this stage. The Hungarian authorities envisage that the electricity generated by Paks II would be sold on the market and to electricity consumers in accordance with typical market practice base-load power sales agreements. According to the Hungarian authorities, Paks II, as a base-load generator for an anticipated long period of operation, would be a price taker similar to existing nuclear power generators in Europe.
- (38) Paks II will be the owner of the Paks II nuclear power plant and, during the construction phase of the two reactors, it will be fully equity financed by the Hungarian State. The Hungarian authorities consider that raising any debt directly by Paks II will not be necessary at this stage.
- (39) Hungary will not transfer the funds required to transfer the purchase price for the Paks II nuclear power plant onto the accounts of Paks II. The largest part of those funds will be held by the Bank for Development and Foreign Economic Affairs of Russia (Vnesheconombank). For each milestone event that is considered fulfilled, Paks II will file a request to Vnesheconombank to pay 80 % of the amount due directly to JSC NIAEP. It will also file a request to the Government Debt Management Agency of Hungary to pay the remaining 20 %.

<sup>(15)</sup> Article 9 of the IGA.

<sup>(16)</sup> 3,95 % until the first day of repayment, and from 4,50 % to 4,95 % in the next 21 years.

<sup>(17)</sup> In each 7-year term: 25 %, 35 % and 40 % of the actually utilised amount of the credit respectively.

(\*) Classified information/business secret.

<sup>(18)</sup> [...].

<sup>(19)</sup> Liquidated damages are a set amount of damages agreed by parties of a contract to become due as compensation in case of the breach of specific obligations under the contract.

- (40) The rest of the financial requirements of Paks II during the construction phase will be ensured through equity from the Hungarian State budget. The initial amount earmarked during the construction phase will be up to EUR [...] billion (difference between the amount of EUR 12,5 billion set for the nuclear project in the IGA and the actual purchase price of the Paks II NPP amounting to EUR [...] billion). This is considered by Hungary to represent a cap on the State resources that can be drawn for the construction of the Paks II nuclear power plant, at least without further assessment. In the event that the equity requirements exceed such an amount, however, Hungary claims it will invest more if its assessment at the time concludes that it is economically reasonable for it to do so.
- (41) Hungary claims that a sensitivity analysis on possible extra costs incurred by Paks II during the construction phase concluded that its costs would have to be multiplied by 10 for the expected IRR to decrease by 1 %. Therefore, Hungary expects the impact of costs increases to be minor.

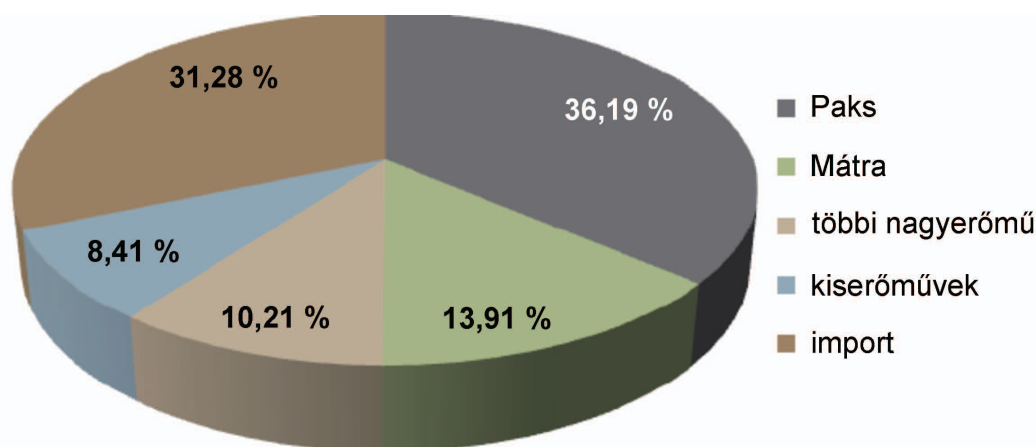
## 2.6. THE HUNGARIAN ELECTRICITY MARKET

### 2.6.1. DESCRIPTION OF THE HUNGARIAN ELECTRICITY MARKET

- (42) The current structure of the Hungarian electricity market was formed around 1995, when the majority of large power plants and public utility suppliers as well as distribution companies were privatised. The State retains a dominant position in the sector through the State-owned vertically integrated energy company MVM Group.
- (43) The Study of MAVIR referred to in recital 20 explains that the total domestic consumption increased by 2,7 % since 2014 reaching a total domestic consumption of 43,75 TWh in 2015. Out of this consumption, domestic production amounted to 30,06 TWh, equalling 68,72 % of the total electricity consumption (see Figure 1). Imports amounted to 13,69 TWh corresponding to 31,28 % of the total consumption. As generator, the State-owned MVM Group has a significant market presence, due to its main generation asset, Paks NPP which provided 52,67 % of domestically generated electricity in 2015, as Figure 1 shows. Mátra Power Plant is a lignite fired power plant which is owned primarily by RWE Power AG (50,92 %) whereas the MVM Group also owns 26,15 % of its shares. The additional bigger (*többi nagyerőmű*) and smaller (*kiserőművek*) power plants play a modest role in the overall generation structure of the Hungarian market. In addition, MVM Group's vertically integrated wholesaling arm, MVM Partner, holds a dominant position in the wholesale electricity market <sup>(20)</sup>.

Figure 1

Composition of total electricity consumption in Hungary in 2015

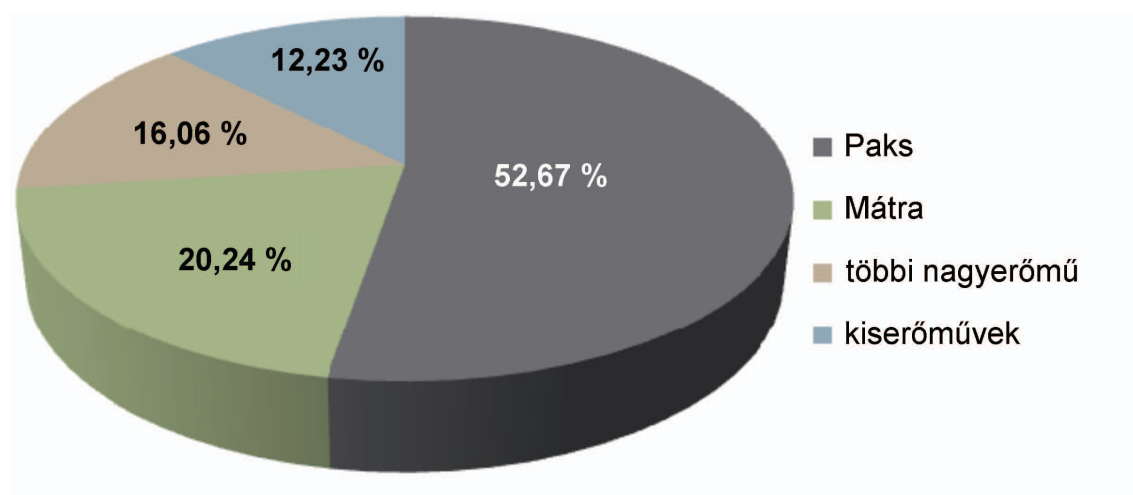


Source: Medium and long-term development of generation assets of the Hungarian electricity system (Mavir, 2016) <sup>(21)</sup>.

<sup>(20)</sup> See Decision No 747/2011 of the Hungarian Energy Office of 14 October 2011.

<sup>(21)</sup> 'Többi nagyerőmű' means 'Other large power plants' whereas 'kiserőművek' means 'Small power plants'.

Figure 2

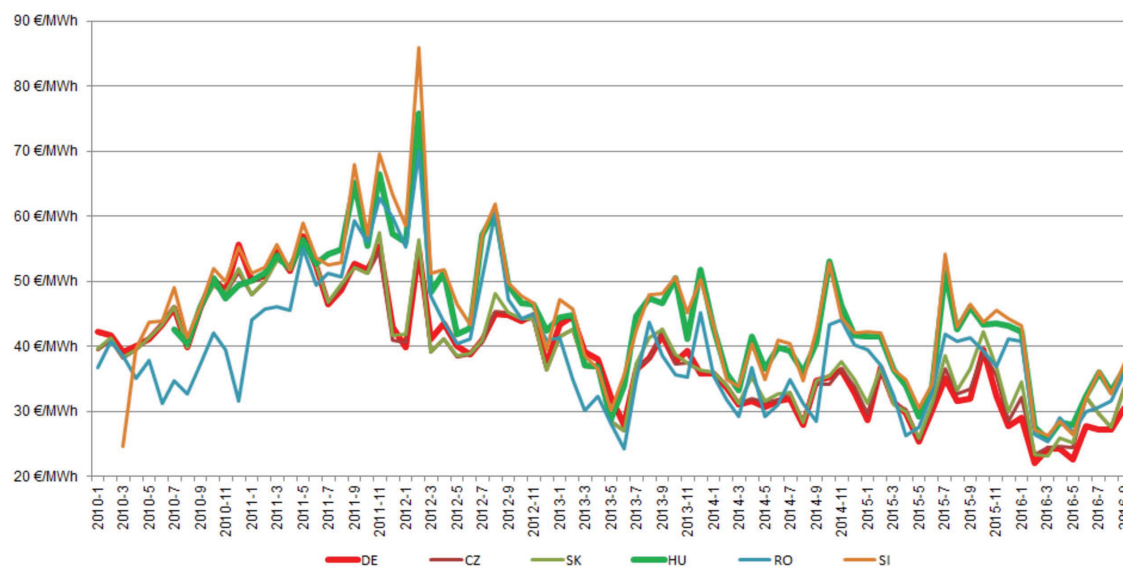
**Gross domestic electricity production in Hungary in 2015**

Source: Medium- and long-term development of generation assets of the Hungarian electricity system (Mavir, 2016).

- (44) In Hungary, the most common transactions of wholesale are concluded via bilateral power purchase agreements (PPAs) where generators agree to sell a minimum pre-defined volume to wholesale traders and where traders are obliged to purchase a minimum volume. The PPAs are mostly concluded under the standards set out by the European Federation of Energy Traders.
- (45) The Hungarian Power Exchange Company Ltd (HUPX) started operating in July 2010 as a subsidiary company of the TSO, MAVIR. It offers day-ahead trades as well as physical future trades. Day-ahead trade starts at 11 am every day on the basis of offers and bids to be placed for each hour for the following day. Trading closes at 11:40 am at the latest. Physical future trades can be made for 4 front weeks, 3 front months, 4 front quarters and 3 front years. There are designated trading days for such transactions where offers and bids are made within a certain time interval. Since March 2016 on the HUPX Intra-day Market, both 15 minute products and 1 hour blocks are tradable. In addition to the organised day-ahead and intra-day markets, HUPX has cooperation agreements with two broker companies providing a service of submitting over-the-counter (OTC) deals for exchange clearing for common clients.
- (46) In addition to the day-ahead auctions not organised by HUPX, electricity is also traded on exchanges based in the EU or OTC platforms as well as via direct bilateral deals (see recital 44).
- (47) As seen from Figure 1 in recital 43, Hungary is a net electricity importer with imports accounting for circa 30 % of Hungarian electricity consumption. As Figure 3 shows, wholesale electricity price has been the highest in Hungary in the interconnected region neighbouring the country (i.e. excluding Poland or Slovenia).

Figure 3

**Monthly average day-ahead baseload prices in the CEE region (including Hungary) and Germany (2010-2016)**

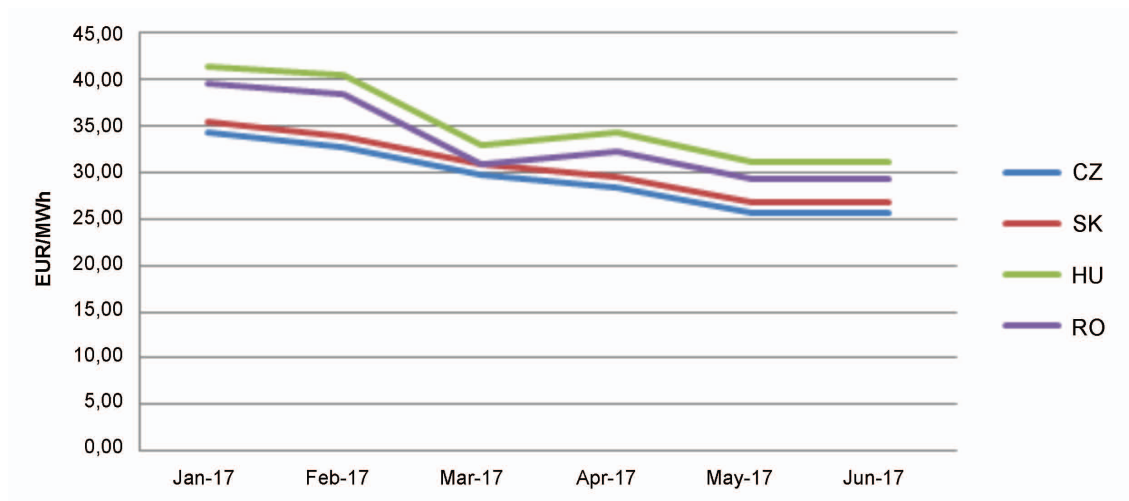


Source: European Commission.

- (48) The short term projection of base-load prices in the region suggests the same trend, i.e. that Hungarian base-load prices will be the highest in the region (see Figure 4).

Figure 4

**Regional base-load futures prices for January-June 2017**



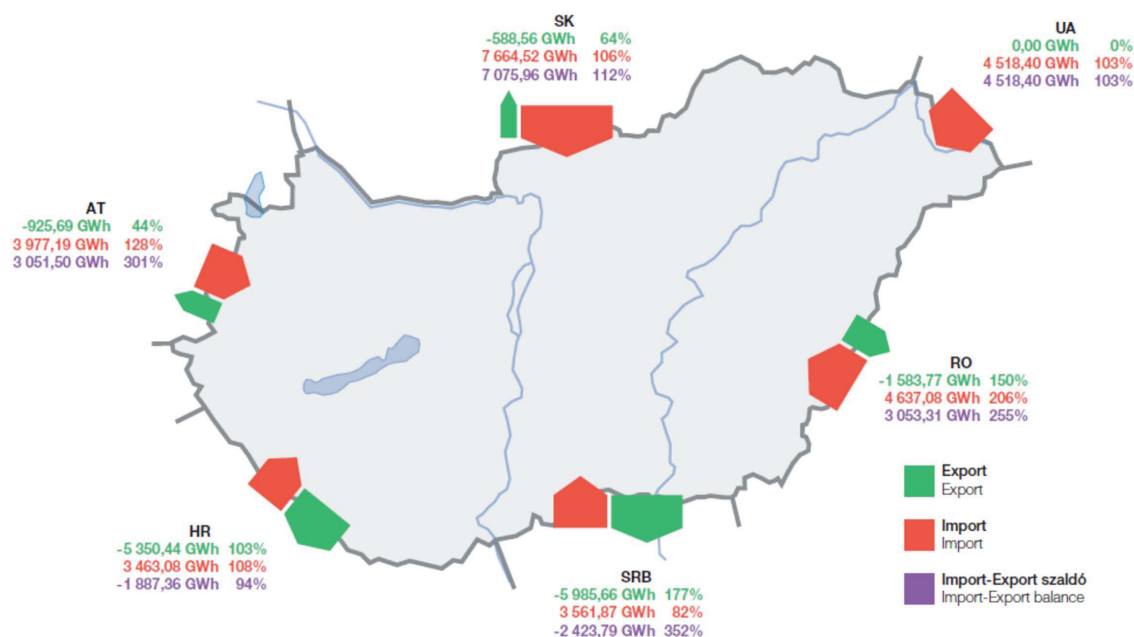
Source: European Commission (based on the data published by the Central European Power Exchange) (<https://www.pxe.cz/Kurzovni-Listek/Oficialni-KL/>).



- (49) The country is well interconnected with neighbouring countries — interconnection capacity for electricity was 30 % in 2014, above the 2020 target<sup>(22)</sup>. In 2014 the Czech-Slovak-Hungarian-Romanian market coupling became operational, resulting in an increase in the liquidity of HUPX and a decrease in price volatility. Figure 5 summarises the data of electricity exchange with neighbouring countries in 2014.

Figure 5

### Electricity exchange between Hungary and neighbouring countries



Source: Data of the Hungarian Electricity System (Mavir, 2014).

#### 2.6.2. DESCRIPTION OF THE ENVISAGED EVOLUTION OF THE HUNGARIAN ELECTRICITY MARKET

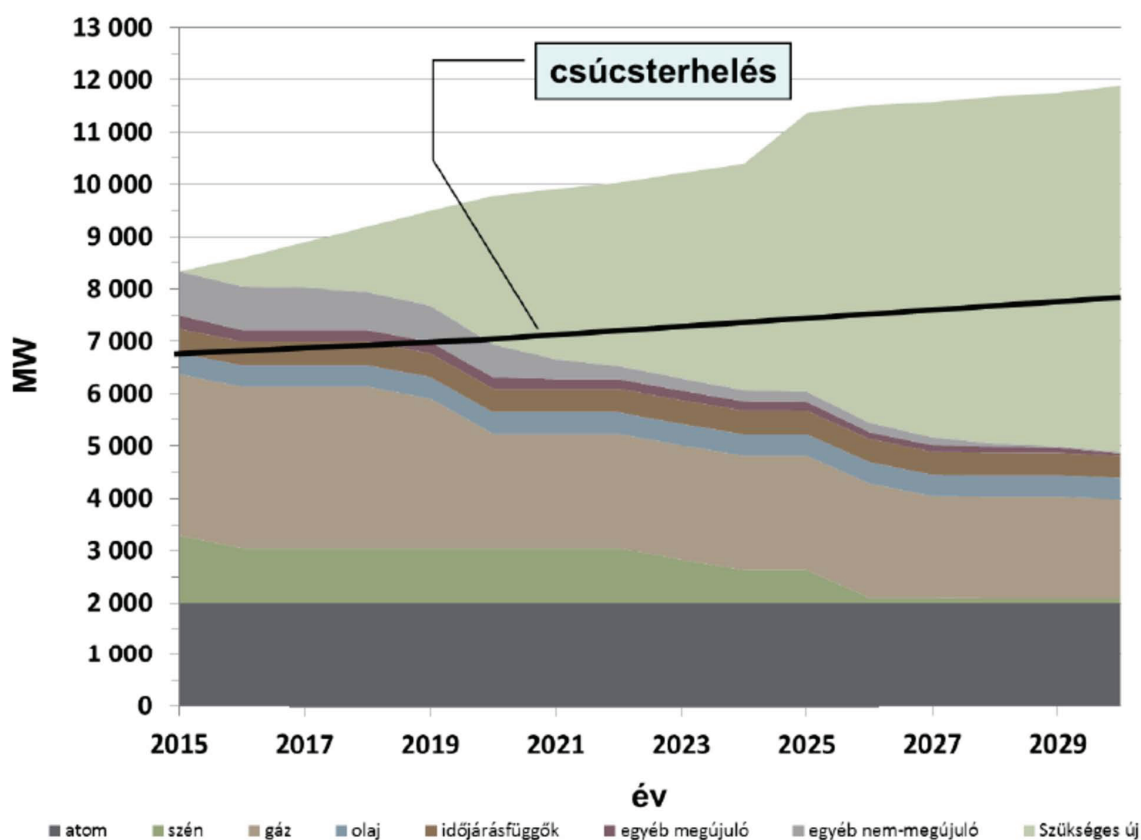
- (50) On the basis of the study referred to in recital 20 issued by MAVIR<sup>(23)</sup>, almost all of the coal generation fleet will have retired between 2025 and 2030 and the installed capacity of Hungary's gas-fleet will have declined by 1 GW. When compared to its estimates of peak demand growth, available generation capacity from domestic power producers is expected to fall below peak load by 2021. As a result, the TSO estimates that the Hungarian market will require at least 5,3 GW of additional new electricity generation capacity by 2026 and somewhat more than 7 GW by the end of the forecast period in 2031. This is depicted in Figure 6 below which shows that a significant amount of installed capacity beyond the growing Peak Load will be required. Hungary explained in its submission dated 16 January 2017 that it is required to ensure a certain level of remaining capacity reflecting the industry standard practices of ENTSO-E TSOs. The remaining capacity is the difference between the domestic reliable available capacity plus the national generating capacity plus peak load and the system services reserve. Remaining capacity is the part of the national generating capacity left in the system to cover any programmed exports, unexpected load variation, system services reserve and unplanned outages at a reference point.

<sup>(22)</sup> Hungarian Energy Country Report (European Commission — 2014): [https://ec.europa.eu/energy/sites/ener/files/documents/2014\\_countryreports\\_hungary.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2014_countryreports_hungary.pdf), accessed on 26 October 2015.

<sup>(23)</sup> A magyar villamosenergia-rendszer közép- és hosszú távú forrásoldali kapacitásfejlesztése (Medium- and long-term development of generation assets of the Hungarian electricity system): [https://www.mavir.hu/documents/10258/15461/Forr%C3%A1selemz%C3%A9s\\_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6f84a](https://www.mavir.hu/documents/10258/15461/Forr%C3%A1selemz%C3%A9s_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6f84a) (Mavir, 2016).

Figure 6

## Additional capacity requirement in the Hungarian electricity sector



5. ábra A forráslétesítés szükségessége

Source: Medium- and long-term development of generation assets of the Hungarian electricity system (Mavir, 2016).

- (51) Hungary sets out that despite claims about the relatively large requirement for new generation capacity, the data from Platts Powervision suggests that relatively little new capacity is actually being built, as shown in Table 2. Hungary also contends that according to Platt's data, a 44 MW waste-to-energy plant is the only power station which is currently under construction in Hungary. Hungary further explains, that while there are investor plans to build larger (gas-fired) plants, none of those projects can be considered confirmed, as investors have not yet incurred substantial irrecoverable expenses such as construction costs, which would demonstrate commitment to actually undertake the project.

Table 2

## New capacities to be built in the Hungarian electricity sector

| Plant           | Plant Type | Primary Fuel | Nameplate MW | Online Year | Status        |
|-----------------|------------|--------------|--------------|-------------|---------------|
| Dunaujvaros Chp | Waste      | Biomass      | 44           | 2016        | Under Constr  |
| Szeged Ccgt     | CC/Cogen   | Natural Gas  | 460          | 2017        | Advan Develop |
| Szeged Ccgt     | CC/Cogen   | Natural Gas  | 460          | 2017        | Advan Develop |

| Plant                             | Plant Type | Primary Fuel | Nameplate MW | Online Year | Status        |
|-----------------------------------|------------|--------------|--------------|-------------|---------------|
| Csepel III                        | CC/Cogen   | Natural Gas  | 430          | 2018        | Advan Develop |
| Tolna                             | Wind       | Wind         | 260          | 2018        | Early Develop |
| Gyor Region                       | Wind       | Wind         | 300          | 2019        | Early Develop |
| Szazhalombatta—<br>Dunai Refinery | CC         | Natural Gas  | 860          | 2020        | Advan Develop |
| Almasfuzito                       | Coal       | Coal Generic | 435          | 2020        | Proposed      |

Source: Platts Powervision, data accurate as of September 2015.

## 2.7. GROUNDS FOR INITIATING THE PROCEDURE

- (52) In May 2015, Hungary notified the Commission its plans to invest in the construction of the two new nuclear reactors at the Paks site for legal certainty and claimed that the measure involved no State aid, as the State is acting as a market investor seeking a reasonable profit. In the Opening Decision, the Commission expressed concerns that the measure would entail State aid within the meaning of Article 107 TFEU, based on the information available at that stage. In particular, the Commission expressed serious doubts as to whether the measure entailed a selective advantage to Paks II, as Hungary did not object to the existence of the other elements of State aid during the notification phase.
- (53) The grounds for doubts derived from the result of the Market Economy Investor Principle ('MEIP') test, which assesses whether a market investor would have invested in the project under the same terms and conditions as the public investor at the time the decision to make the public investment was taken<sup>(24)</sup>. The MEIP test is also recognised by case law<sup>(25)</sup>.
- (54) In formal terms, the MEIP test sought to justify whether the expected internal rate of return ('IRR') of the investment would be higher than a purely market-based benchmark of the weighted average cost of capital ('WACC') for the project subject to the investment<sup>(26)</sup>. While Hungary estimated the IRR of the project to be larger than a purely market-based benchmark WACC, the Commission raised doubts as to whether the WACC was to be considered higher.
- (55) In light of doubts as regards the existence of State aid, the Commission further examined whether any possible State aid measures could be considered to be compatible with the internal market. However, given that the Hungarian authorities considered the measure to be free of State aid, the Hungarian authorities had not submitted, in the preliminary phase, any reasons as to why the measure would be compatible with the internal market. The Commission also expressed doubts that the measure did not fall within the scope of the Communication from the Commission — Guidelines on State aid for environmental protection and energy 2014-2020<sup>(27)</sup>, since those Guidelines do not cover measures in the field of nuclear energy and radioactive waste. Although the Commission concluded that no other Guidelines were applicable for the assessment of the notified measure, the Commission also concluded that it may declare a measure directly compatible under Article 107(3)(c) TFEU, if the measure aims to achieve an objective of common interest, if it is necessary and proportionate and where the positive effects of achieving the common objective outweigh the negative effects on competition and trade.

<sup>(24)</sup> The MEIP test is a standard test to evaluate the existence of aid and was also used by Hungary in its economic analyses submitted both before and after the notification of the case. The Commission carefully evaluated and then complemented the MEIP analysis submitted by Hungary to derive its own assessment of the existence of aid.

<sup>(25)</sup> T-319/12 and T-321/12 — Spain and Ciudad de la Luz v Commission, ECLI:EU:T:2014:604, paragraph 40, T-233/99 and T-228/99 — Landes Nordrhein-Westfalen v Commission, ECLI:EU:T:2003:57, paragraph 245.

<sup>(26)</sup> Typically, there are two broad sources of capital: equity capital and (financial) debt capital. The total cost of capital is the weighted average cost of capital (WACC), taking into account the proportion of equity capital and the proportion of debt capital.

<sup>(27)</sup> OJ C 200, 28.6.2014, p. 1.

- (56) The Commission expressed doubts as to whether the measure could be considered to be proportionate, that is to say, whether the measure was limited to the minimum level of investment support necessary to enable the successful construction of the additional electricity generating units for the attainment of the common objective pursued. The beneficiary would receive generation assets without facing any particular risk linked to refinancing costs which other market operators would face. The Commission was not provided with any evidence as to how Hungary would prevent such overcompensation.
- (57) The Commission emphasised that the Hungarian electricity generation market is characterised by a relatively high market concentration, with the existing Paks NPP providing some 50 % of domestic generation. In the absence of new capacities, electricity generation by Paks NPP and Paks II would be likely to provide an even greater portion of the supply market, which may have a distortive effect on the Hungarian electricity market. Hungary did not provide detailed evidence to the Commission as to how it would ensure the continuous independent operation of the existing and new generating assets.
- (58) Finally, the Commission noted that due to the particularities of the Hungarian electricity market, the operation of Paks II may also cause a wholesale market liquidity risk by limiting the number of supply offers available in the market. Depending on the way the electricity produced by the new reactors is sold on the market, liquidity could be significantly affected, barriers to entry could be raised and competition could be reduced at various levels of the market. Hungary did not provide a detailed explanation as to how electricity would be traded by Paks II and how market liquidity would be ensured.
- (59) Therefore, the Commission expressed doubts that the measure could comprise State aid within the meaning of Article 107(1) TFEU.
- (60) In the absence of sufficient evidence, the Commission was also unable to reach any conclusions on the compatibility of any such measure, with the internal market under Article 107(3)(c). In addition, based on the doubts raised in the Opening Decision and given the lack of compatibility arguments from Hungary at that time, the Commission explored a series of competition distortion concerns and possibilities that Paks II might be overcompensated.
- (61) As regards the doubts on proportionality expressed in recital 56 above, the Commission examined whether Paks II could, as a result of the aid, reinvest any profits that are not paid to the State in the form of dividends in order to develop or purchase additional generation assets and thus, strengthen its position on the market.
- (62) As regards the doubts on proportionality expressed in recital 56, the Commission also investigated Hungary's intended dividends policy, in particular whether it would request dividends (at its discretion depending on the profit achieved by Paks II) or rather leave profits with Paks II. The Commission was concerned that Paks II could use its profits to reinvest by developing or purchasing additional generation assets and further distort competition.
- (63) As set out in recital 57, due to the relatively high concentration level of the Hungarian electricity generation market and with the current nuclear power station Paks NPP (MVM Group) providing some 50 % of domestic generation, the Commission had concerns whether Paks NPP and Paks II would be held separately and could be considered independent and unconnected. The fact that Paks II is currently legally independent from the MVM Group was insufficient for the Commission as it did not receive any information during the notification phase as to whether the Paks NPP and Paks II would continue to operate fully separated legally and structurally. Such clarifications appeared necessary in order to minimise the risk of a further increase of market concentration.
- (64) Furthermore, as explained in Section 2.6, the most common transactions in the Hungarian wholesale power sector are concluded by way of bilateral PPA's and that the Hungarian Power Exchange ('HUPX') has not yet triggered an adequate level of liquidity. As the Hungarian notification did not refer to the expected methods of electricity sales of electricity from Paks II, the Commission investigated the effect of Paks II on Hungary's current liquidity levels within the wholesale power sector.

- (65) Considering the market liquidity doubts presented in recital 58, the Commission wanted to ensure that a wide range of supply offers are available on the market, particularly in light of MVM Partner's dominant position on the electricity wholesale market <sup>(28)</sup>. The Commission was concerned that liquidity levels could be significantly affected and that the costs of downstream rivals may be raised by restricting their competitive access to an important input (input foreclosure). This could happen if the electricity produced by Paks II was sold primarily by way of long term contracts to only certain suppliers, thus converting Paks II's market power in the generation market to the retail market.
- (66) The Commission, therefore, sought additional information in relation to Paks II's power output trading strategy, with special attention as to whether it would be at arms-length terms by offering its electricity on the exchange or any other transparent trading platform.

### 3. THE POSITION OF THE HUNGARIAN GOVERNMENT

#### 3.1. HUNGARY'S POSITION ON THE EXISTENCE OF AID

##### 3.1.1. ECONOMIC ADVANTAGE

- (67) Hungary claims in the notification that the investment does not constitute State aid within the meaning of Article 107 TFEU as it does not confer an economic advantage to Paks II. Hungary supports this claim by indicating that the Paks II investment complies with the MEIP test (see recitals 53 and 54).
- (68) In particular, Hungary claims that the MEIP test is satisfied in two ways <sup>(29)</sup>. Firstly, the WACC of the project is found to be lower than its IRR. Secondly, it is argued that the levelised cost of electricity ('LCOE') is sufficiently low to make nuclear competitive with respect to other generation technologies and to offer reasonable returns under prevailing electricity prices <sup>(30)</sup>.
- (69) The following studies and supporting documentation were submitted by Hungary to support its view:
- (a) The Market Economic Investor Principle substantiating analysis ('MEIP Study', 18 February 2015),
  - (b) Economic analysis for the Paks II nuclear power project ('Economic Study', 8 October 2015) <sup>(31)</sup>,
  - (c) Letters to the Deputy Director-General for State aid reflecting on the preliminary analysis of the Commission (Clarifying Letters)
    - First letter ('First clarifying letter', 16 October 2015),
    - Second letter ('Second clarifying letter', 29 October 2015),
  - (d) Submissions reflecting on the Opening Decision (Response to the Opening Decision)
    - Letter to the Deputy Director-General for State aid following the publication of the Opening Decision by the Commission on 3 December 2015 ('Letter acknowledging the Opening Decision'),
    - Submission by Hungary to the Commission on 29 January 2016 ('Submission reflecting to the Opening Decision'),

<sup>(28)</sup> See footnote 9.

<sup>(29)</sup> The first way is a standard way of checking the MEIP across industries, whereas the second way is particularly designed for the electricity industry.

<sup>(30)</sup> The LCOE is the total cost of installing and operating a power generation project expressed in a uniform electricity price over the lifetime of the project. Formally,  

$$LCOE = \frac{\sum_t (Cost_t \times (1 + r)^{-t})}{\sum_t (MWh_t \times (1 + r)^{-t})}$$
 where  $r$  is the discount rate and  $t$  denotes year  $t$ . As a result, it is sensitive to the discount rate applied. It is common practice to apply the WACC of the project as discount rate.

<sup>(31)</sup> This document is publicly available at [http://www.kormany.hu/download/6/74/90000/2015\\_Economic%20analysis%20of%20Paks%20II%20-%20for%20publication.pdf](http://www.kormany.hu/download/6/74/90000/2015_Economic%20analysis%20of%20Paks%20II%20-%20for%20publication.pdf).

- (e) The Government of Hungary's response to third party comments on the State aid Opening Decision on 7 April 2016 ('Response to Third Party Comments'),
- (f) Response to the request for information dated 18 March 2016 on 21 April 2016 ('Further Clarifications').
- (70) Furthermore, the Hungarian Government also submitted a financial model that was used to compute the IRR figures for the project. Two versions of the model were submitted to the Commission:
- (a) Original version on 16 March 2015 ('Preliminary Financial Model')
- (b) Final version on 16 October 2015 ('Financial Model').
- (71) Except for the 'Further Clarifications', the documents listed in recital 69 address the topic of WACC and IRR computation, albeit with various levels of detail. The IRR of the project is computed by using the Financial Model <sup>(32)</sup>. The LCOE approach is discussed in the Economic Study and in the 'Further Clarifications' (see recital 69).
- (72) In terms of analysis by Hungary, the documents listed in recital 69(c)-(f) include various updates of the figures submitted in the MEIP study, and subsequently in the Economic Study. In particular, some updates are dated after the signing date of the EPC contract on 9 December 2014, i.e. the initial investment decision.
- (73) The Opening Decision provides a detailed evaluation of Hungary's position on each key issue as reflected in its submissions up to the date of the Opening Decision <sup>(33)</sup>. The remainder of this section provides an overview of Hungary's position on the key issues raised following the publication of the Opening Decision. In particular, the application of the WACC and IRR, as well as the LCOE will be presented separately.

#### 3.1.1.1. *Hungary's position on the WACC*

- (74) In its Response to the Opening Decision, Hungary reiterated its estimated range of between 6,2-7,7 % for the WACC as in its previous submissions. It also reiterated on its earlier arguments set forward in the Clarifying Letters and noted that the Commission did not assess these arguments in the Opening Decision.

#### 3.1.1.2. *Hungary's position on the IRR*

- (75) This section reviews Hungary's position in relation to the calculation of the IRR which used the Financial Model to compute future free cash flows for the project and determine the its IRR. The main elements of the Financial Model are:
- (1) various long-term electricity price forecasts, and
- (2) various operational assumptions for the nuclear power plant.
- (A) Electricity price forecasts
- (76) The price forecasts used by the Hungarian Government were reviewed in the Opening Decision. In its Response to the Opening Decision, Hungary criticised the Commission for using just one price forecast curve (based on the International Energy Agency's World Energy Outlook 2014 (IEA WEO 2014) publication to calculate the IRR of the project <sup>(34)</sup>. In particular, it pointed out that all of the price forecasts submitted in the Economic Study should be used to assess the IRR.

<sup>(32)</sup> The Financial Model is an updated version of the preliminary Financial Model. Updates include the contractual arrangements between Paks II and JSC NIAEP, the supplier of the nuclear power plant.

<sup>(33)</sup> See recitals 52-81 of the Opening Decision.

<sup>(34)</sup> See <http://www.worldenergyoutlook.org/weo2014/>



## (B) Operational assumptions

- (77) The operational assumptions for the Financial Model and the IRR calculations were provided by Paks II's technical team. Although originally no details were provided to justify those operational assumptions, Hungary subsequently submitted background information on those assumptions in its responses to information requests by the Commission. A key submission in this regard is the Further Clarifications submitted in response to a Request for Information following the Opening Decision and the third party comments.

## (C) The IRR of the project

- (78) In the Response to the Opening Decision, Hungary reiterated the results of its earlier computations of between 8,6-12,0 % for the IRR of the project.
- (79) Hungary's Response to the Opening Decision criticised the Commission's assessment of the impact of a delay on the project's IRR (a decrease of 0,9 % for a delay of 5 years). The figure was calculated by assuming delays during the operational period. However, Hungary argued that a delay in the construction period could increase the IRR of the project where there would be a delay in incurring costs also.

3.1.1.3. *Hungary's position on the LCOE*

- (80) This section reviews Hungary's position on the LCOE for Paks II <sup>(35)</sup>.

## (A) The Economic Study

- (81) Hungary argued in the Economic Study that the LCOE of Paks II is sufficiently low to make it competitive with other generation technologies. In particular, the study presented three estimates of the LCOE in respect of a nuclear project in Hungary. The first estimate of EUR 70/MWh, was based on a discount rate of 7 % (the upper limit of the estimated WACC presented in the same Economic Study) and was taken from a joint OECD/IEA/NEA 2015 publication 'Projected Costs of Generating Electricity' ('OECD/IEA/NEA 2015 study') <sup>(36)</sup>. The second LCOE estimate of EUR 50-63/MWh was based on a study by Aszodi et al. (2014) which uses a discounted rate based on the interest rate of the Russian loan, falling within the 4-5 % range <sup>(37)</sup>. The third LCOE estimate of EUR 58-120/MWh (2013 real prices) was calculated by way of a benchmark analysis based on figures published by various international agencies which offers a potential range for the LCOE <sup>(38)</sup>. The study concluded that the LCOE for a Hungarian nuclear power plant falls within the range of between EUR 50,5-57,4/MWh (2013 real prices) where the two end values were calculated by taking an interest rate equal to the two end-points of the WACC range (6,2 % and 7,0 %) reported in the same Economic study <sup>(39)</sup>. When compared to the future electricity prices from the same Economic Study, the Hungarian nuclear power plant project can be argued to be profitable, and as such, Hungary argues that a private investor would feel it reasonable to undertake the project.

## (B) Further clarifications

- (82) In Response to the question by the Commission on how the LCOE range of between EUR 50,5-57,4/MWh in the final conclusion of the Economic Study can be reconciled with the range of between USD 89-94/MWh set out in the OECD/IEA/NEA study, Hungary explained in the 'Further Clarifications' that the difference was due to very different assumptions being used in the Economic Study and the OECD/IEA/NEA study, e.g. the difference in the assumed capacity factor (85 % vs 92 %) for nuclear power plants and in the commissioning dates (2020 vs 2025).

<sup>(35)</sup> Due to insufficient information and lack of clarity, the Opening Decision did not evaluate estimates based on this methodology. Therefore, the following overview also includes documents from before the Opening Decision.

<sup>(36)</sup> The LCOE in the OECD/IEA/NEA study is 89,94 USD/MWh (see Table 4.7) and it is not clear how the value of EUR 70/MWh in Figure 3 of the Economic Study and EUR 50,5-57,4/MWh were derived from that former value. The OECD/IEA/NEA 2015 study is available at <https://www.oecd-neo.org/ndd/egc/2015/>

<sup>(37)</sup> See Aszodi, A., Boros I. and Kovacs, A., (2014) 'A paksi atomerőmű bővítésének energiapolitikai, műszaki és gazdasági kérdései', in Magyar Energetika, May 2014. An English translation entitled, 'Extension of the Paks II NPP — energy political, technical and economical evaluations' was submitted to the Commission in February 2016. This study presents calculations in HUF, concluding an average LCOE of 16,01-16,38 HUF/kWh over the lifetime of the project. No details are provided how these HUF based figures were converted into the LCOE range in EUR/MWh cited in recital 81.

<sup>(38)</sup> See Figure 15 in the Economic Study.

<sup>(39)</sup> See p. 77 of the Economic Study.

### 3.2. HUNGARY'S POSITION ON THE POSSIBLE COMPATIBILITY OF THE MEASURE WITH THE INTERNAL MARKET

- (83) Although in its response to the Opening Decision Hungary emphasised that the measure did not involve State aid, it submitted comments to address concerns raised by the Commission with regard to the possible compatibility of the measure with the internal market, expressed in the Opening Decision in the event that the Commission came to the conclusion that State aid did exist.

#### 3.2.1. POSITION ON THE OBJECTIVE OF COMMON INTEREST

- (84) In its response to the Opening Decision, Hungary set out several policy considerations which it deemed relevant to define the objective of common interest based on the following:
- (a) Hungary's energy policy;
  - (b) Euratom Treaty <sup>(40)</sup> objectives;
  - (c) Gap in future installed capacity;
  - (d) Diversification of energy sources;
  - (e) Decarbonisation;
  - (f) Job creation;
  - (g) Affordability.
- (85) Hungary emphasised that, on the basis of Article 194(2) TFEU, each Member State has the sovereign right to choose its energy mix and it refers to its National Energy Strategy 2030 (see recital 20) which identifies a nuclear-coal-renewable path as mid-term energy strategy of the country.
- (86) Hungary also refers to Article 2(c) of the Euratom Treaty which states that the Euratom Community shall facilitate investment and ensure the establishment of the basic installations necessary for the development of nuclear energy in the Euratom Community. Hungary emphasises that the provisions of the Euratom Treaty, which bind each signing Member State, are to be understood as a common objective of the Union.
- (87) In addition, Hungary explains that there is a projected growth of approximately 4 % in electricity demand expected by the TSO by the year 2030 principally due to the proposed electrification of Hungary's transport, industry and heating systems. The same study of the TSO concludes that many of Hungary's existing older coal and gas plants are becoming obsolete and are expected to shut down by 2030. The study also found that very few newly installed capacities are expected to come on stream within the same timeframe. This will lead to a forecasted 32 % decrease in the existing capacity and Hungary argues that the construction of Paks II will be a well targeted response to this envisaged gap in future generation capacity.
- (88) Furthermore, Hungary emphasises that its dependency on imported gas is higher than the EU 28 average. More than 95 % of the gas utilised in Hungary is imported and principally from Russia. It argues that without nuclear in the energy mix, Hungary's dependence on oil or gas would significantly increase. This would be particularly the case following the phasing out of the existing operating units of the Paks NPP where other additional electricity generating units would have to use such fuels to bridge the future gap in overall national installed capacity described in recital 50. Consequently, Hungary considers that the measure would contribute to the diversity of fuel sources in the energy mix and the security of the country's energy supply.
- (89) Hungary argues that the project will contribute to the Union's 2020 objectives of a reduction of greenhouse gases as nuclear fission is considered as a low carbon source of energy. The Hungarian authorities argue that the country's topographic and geographic location does not allow for the deploying of offshore wind or hydropower plants. The remaining renewable electricity generation options are from onshore wind, solar and biomass, however the deployment of such technologies would not be sufficient to cover the envisaged gap in future capacity mentioned in recital 50 before where no additional generation from nuclear is foreseen. Consequently Hungary argues that the project is pursuing the objective of decarbonisation.

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<sup>(40)</sup> Treaty establishing the European Atomic Energy Community (Euratom).

- (90) The Hungarian authorities allege that the project (both during and after the construction) will lead to significant job creation. This would be particularly important given the geographical location of the Paks II nuclear power plant, which lies in a NUTS II-region, with a GDP of less than 45 % of that of the EU average per capita. As such, Hungary considers that the implementation of the project would pursue an objective of growth and significant job creation in multiple sectors.
- (91) Finally, Hungary argues that the investment in new nuclear generation capacity will directly translate into lower industrial and consumer electricity prices, which is in accordance with an EU-wide objective of affordability of services. Hungary also states that the fact that no support shall be granted to Paks II during its operation supports the argument of affordability.

#### 3.2.2. POSITION ON THE NECESSITY OF THE MEASURE

- (92) Hungary explains in light of the growing generation gap which Hungary faces, that a significant amount of investment in generation capacity is required, with the quantum of such investment required being greater than the projects which are currently under construction or in development.
- (93) For these reasons Hungary had engaged Nera Economic Consulting to analyse the development of the Hungarian and neighbouring countries' electricity markets and the appropriate market definition for the Paks II project when it becomes operational (the 'NERA Study'). This study suggests that building the new units 5 and 6 at Paks II could be commercially preferable to other types of energy generation investments based on Hungary's market conditions, such as a similar capacity provided by open cycle gas turbines ('OCGT's') and CCGT's. Hungary concludes that there is thus no possible counterfactual that meets the policy objectives.

#### 3.2.3. POSITION ON THE PROPORTIONALITY OF THE MEASURE

- (94) Hungary reiterates that it expects to receive full compensation from the investment in the Paks II nuclear power plant from both capital appreciation and dividends.
- (95) In addition, in its submission of 28 July 2016, while maintaining that the project would not involve State aid and that it was in line with the MEIP, Hungary provided additional information in response to the concerns raised in Section 3.3.6 of the Opening Decision regarding proportionality should the Commission find that State aid would arise in the notified project.
- (96) According to its submission Hungary states that Paks II shall use all of the profits deriving from the activity of units 5 and 6 of Paks II only for the following purposes:
- (a) The Paks II project, which is defined as the development, financing, construction, commissioning, operation and maintenance, refurbishment, waste management and decommissioning of two new nuclear power units with VVER reactors 5 and 6 in Paks, Hungary). Profits shall not be used to fund investments in activities that are not within the scope of the above defined project.
  - (b) The payment of the profits to the Hungarian State (for example by way of dividends).
- (97) Hungary also confirmed that Paks II shall refrain from (re)investing in the extension of Paks II's own capacity or lifetime and the installation of additional generation capacities, other than those of reactors 5 and 6 of Paks II. Should such new investment be made, Hungary shall notify it to the Commission for a separate State aid approval

#### 3.2.4. POSITION ON THE EFFECT OF THE MEASURE ON THE INTERNAL MARKET

- (98) The Hungarian authorities put forward that where any distortive effects occurred, these would be limited in duration to the period of overlap between the phasing out of the existing reactors at Paks NPP and the coming into operation of the two new reactors of Paks II. Hungary considers it unreasonable to assume that Paks NPP's lifetime could exceed 50 years, therefore the overlapping period would be very short.

- (99) Furthermore, in Hungary's view the overlap period is needed and reasonable bearing in mind the need that Paks II is operational at the time Paks NPP will approach the end of its extended lifetime, and that Paks II's development and commissioning may be subject to delays due to the technical complexity that the commissioning of a new nuclear power plant involves and to external factors outside the control of parties (e.g. change in legislation, safety requirements, regulatory environment). Hungary also submitted that some units equipped with VVER Generation III and III+ technology faced or are envisaged to face delays compared to the planned construction time of Paks II, as expressed in Table 3 below.

Table 3

**Accumulated construction delays of VVER Generation III and III+ units**

| Site (country)              | Delays (years) | Status    |
|-----------------------------|----------------|-----------|
| Kudankulam — 1 (India)      | + 5,8          | completed |
| Kudankulam — 2 (India)      | + 7,0          | ongoing   |
| Novovoronezh II.-1 (Russia) | + 1,5          | completed |
| Novovoronezh II.-2 (Russia) | + 2,5          | ongoing   |
| Leningrad II.-1 (Russia)    | + 2,0          | ongoing   |
| Leningrad II.-2 (Russia)    | + 2,5          | ongoing   |

Source: Hungarian authorities.

- (100) In addition, Hungary highlights that Paks NPP and the two new reactors of Paks II are owned and operated by separate entities and that the MVM Group is not related in any way to the Paks II project or to Paks II. It also maintains that, if a concentration between Paks II and the MVM Group were to be considered, such a concentration would be subject to the merger control rules.
- (101) Hungary argues that the fact that the two companies are both State owned does not prima facie call into question their commercial autonomy. On the contrary, the companies can be proven to be independent of one another where each company has independent decision-making powers.
- (102) Hungary contends that the MVM Group and Paks II are independent and unconnected on the following grounds:
- (a) They are managed by different government departments (the MVM Group by the Ministry of National Development through the Hungarian National Asset Management Inc. and Paks II by the Prime Minister's Office);
  - (b) There are no shared or common directorships on the governing board of each company;
  - (c) There are existing safeguards to ensure that commercially sensitive and confidential information are not exchanged between the companies;
  - (d) The decision making powers of each company are separate and distinct from one another.
- (103) Hungary criticises the Commission's findings in the Opening Decision regarding the calculation of MVM Group's market share in the Hungarian electricity supply market. Hungary argues that the market share was not examined in comparison with other producers present in the Hungarian market and that the market share of the MVM Group was calculated in view of domestically generated electricity only, excluding imports.
- (104) On the basis of the NERA Study Hungary alleges that any possible distortions of competition must be interpreted in a market context that is larger than the State of Hungary. The NERA Study takes into account the following inputs in its market assessment:
- (a) Existing generation capacities and technical capabilities (e.g. efficiencies, start-up costs);

- (b) Committed expansions in generation capacity (e.g. plant under construction and new renewables);
  - (c) Committed retirements of existing units (e.g. due to the LCPD);
  - (d) Interconnector capacities;
  - (e) Generator fuel, CO<sub>2</sub> and variable operating and maintenance costs;
  - (f) Fixed operating and maintenance costs that would be avoided if a unit shuts;
  - (g) The costs of new entry.
- (105) The basis of the argument why the market to be assessed is larger than Hungary is that imports of electricity from neighbouring countries accounted for 31,4 % of Hungarian electricity consumption in 2014. Hungary also argues that this high level of interconnection with neighbouring countries will increase further as a result of new interconnectors which will become operational between 2016 and 2021 between Slovakia (2 × 400 kV and 1 × 400 kV) and Slovenia (1 × 400 kV). In the submission of Hungary dated 16 January 2017, Hungary provided more details on the upcoming projects of cross-border transmission lines, according to which another interconnector of 2 × 400 kV will be built with Slovakia by 2029 and a 1 × 400 kV one with Romania by 2030. The expected total interconnection capacities for imports and exports are shown in Tables 4 and 5.

Table 4

**ENTSO-E Projections of Installed Interconnection Capacities for Import in Hungary**

|      | Austria | Slovakia | Romania | Croatia | Serbia | Ukraine (*) | Slovenia (**) | Total |
|------|---------|----------|---------|---------|--------|-------------|---------------|-------|
| 2015 | 600     | 800      | 1 000   | 1 200   | 1 000  | 450         | 0             | 5 050 |
| 2016 | 720     | 1 040    | 1 080   | 1 360   | 920    | 450         | 400           | 5 970 |
| 2017 | 840     | 1 280    | 1 160   | 1 520   | 840    | 450         | 800           | 6 890 |
| 2018 | 960     | 1 520    | 1 240   | 1 680   | 760    | 450         | 1 200         | 7 810 |
| 2019 | 1 080   | 1 760    | 1 320   | 1 840   | 680    | 450         | 1 600         | 8 730 |
| 2020 | 1 200   | 2 000    | 1 400   | 2 000   | 600    | 450         | 2 000         | 9 650 |
| 2021 | 1 200   | 2 000    | 1 400   | 2 000   | 600    | 450         | 2 000         | 9 650 |
| ...  |         |          |         |         |        |             |               |       |
| 2030 | 1 200   | 2 000    | 1 400   | 2 000   | 600    | 450         | 2 000         | 9 650 |

(\*) No data provided in forecast

(\*\*) Assumption: Slovenia starting from zero.

Source: NERA Study.

Table 5

**ENTSO-E Projections of Installed Interconnection Capacities for Export in Hungary**

|      | Austria | Slovakia | Romania | Croatia | Serbia | Ukraine (*) | Slovenia (**) | Total |
|------|---------|----------|---------|---------|--------|-------------|---------------|-------|
| 2015 | 600     | 800      | 1 000   | 1 200   | 1 000  | 450         | 0             | 5 050 |
| 2016 | 640     | 1 040    | 1 060   | 1 360   | 920    | 450         | 340           | 5 810 |
| 2017 | 680     | 1 280    | 1 120   | 1 520   | 840    | 450         | 680           | 6 570 |
| 2018 | 720     | 1 520    | 1 180   | 1 680   | 760    | 450         | 1 020         | 7 330 |
| 2019 | 760     | 1 760    | 1 240   | 1 840   | 680    | 450         | 1 360         | 8 090 |
| 2020 | 800     | 2 000    | 1 300   | 2 000   | 600    | 450         | 1 700         | 8 850 |
| 2021 | 800     | 2 000    | 1 300   | 2 000   | 600    | 450         | 1 700         | 8 850 |
| ...  |         |          |         |         |        |             |               |       |
| 2030 | 800     | 2 000    | 1 300   | 2 000   | 600    | 450         | 1 700         | 8 850 |

(\*) No data provided in forecast

(\*\*) Assumption: Slovenia starting from zero.

Source: NERA Study.

(106) The study also identifies a successful energy supply market coupling with Slovakia, the Czech Republic and Romania and refers to ENTSO-E's proposals published in October 2015 which defined Hungary as a part of a single Central and Eastern Europe coordinated capacity region with several countries with which it does not yet have coupling arrangements, including Austria, Germany and Poland<sup>(41)</sup>. Hungary argues that, relative to other Member States, Hungary is already a highly integrated electricity market within the European Union, with interconnection capacity standing at approximately 75 per cent of total installed domestic generation capacity, i.e., roughly 8 times higher than the EU target for Member States by 2020 and 5 times higher than the EU target for Member States by 2030. In Hungary's view, this is a sufficient reason to consider possible distortions of competition at a larger scale.

(107) As regards the deployment of new technologies both in the factual scenario and in the absence of Paks II, the NERA Study envisages CCGTs or OCGTs as entrant technologies whereas it presumes that the entry and exit of other technologies, such as renewables, coal and nuclear is unlikely purely on an economic basis for the following reasons:

- (a) The current and historical entry decisions of renewable plant depend crucially on government subsidy programmes, rather than market prices. Accordingly, models that simulate market fundamentals are not able to determine whether renewable plant would enter or exit in practice.
- (b) Due to climate change concerns, the installation of unabated new build coal and lignite plants in the EU is now highly contentious, with many projects subject to challenge through agency or court processes. It is therefore unclear to what extent new build projects are any longer feasible in the EU.

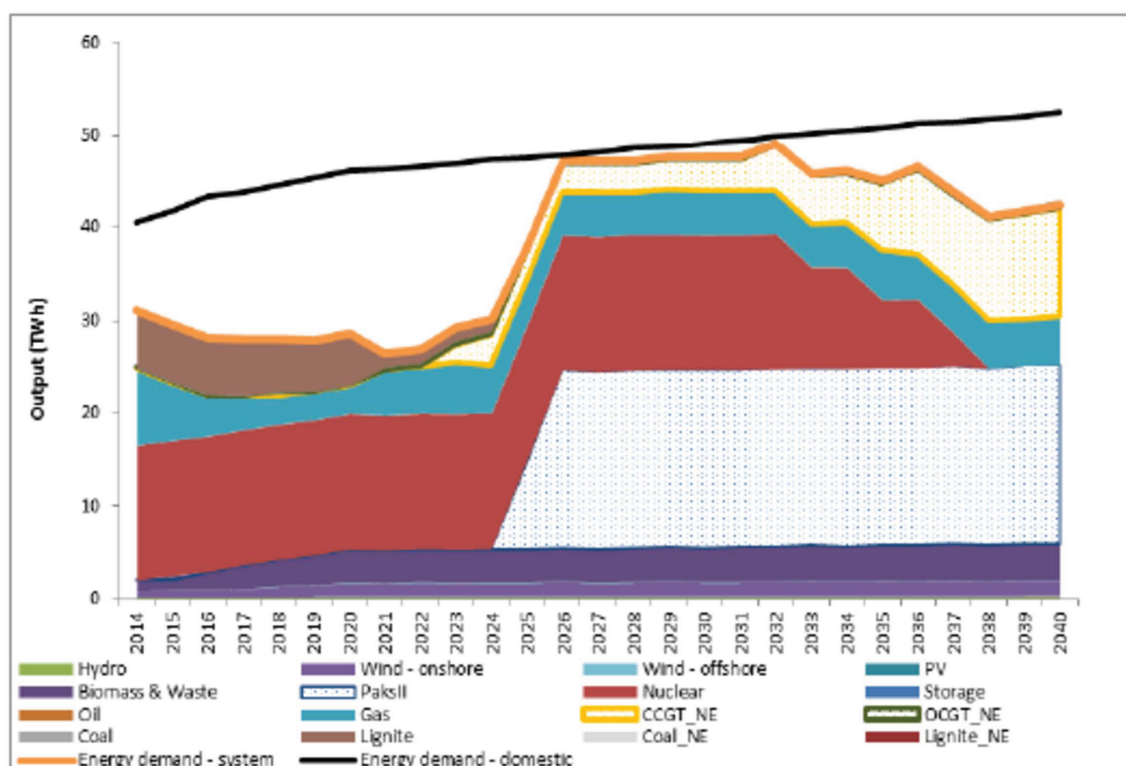
<sup>(41)</sup> ENTSO-E (2015), All TSOs' proposal for Capacity Calculation Regions (CCRs) in accordance with Article 15(1) of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management, 29 October 2015, p. 9, Article 9.



- (c) The development of new build nuclear power plant in the EU is also dependent on an energy strategy that includes nuclear power and requires significant government and regulatory interface in the planning and permitting process. For nuclear power plant, planning and development is a significantly larger undertaking than for gas CCGTs and OCGTs and the outcomes are much more dependent on national policies and regulatory discretion. It is therefore assumed that no new nuclear power plant is constructed other than those in countries that already have pro-nuclear energy policies and only for active projects that are already under-construction and/or have EPC contracts in place.
- (108) The NERA Study shows that in the factual scenario (construction of Paks II), the following conclusions can be drawn:
- (a) Electricity demand in Hungary is expected to grow significantly until 2040;
  - (b) Hungary is currently in a supply deficit and must import significant amounts of electricity. This deficit widens further between 2015 and 2025;
  - (c) Despite Paks II coming online in 2025, Hungary remains in a net import position throughout the overlap period with the currently operating units of Paks NPP, and then again begins to become more and more import dependent thereafter;
  - (d) Renewable resources in Hungary increase in the initial years of the factual scenario based on ENTSO-E projections, hitting the 2020 renewables target of 10,9 % of electricity consumed that Hungary adopted in its National Renewable Energy Plan.

Figure 7

#### Projected output per technology and national demand until 2040 (factual scenario)

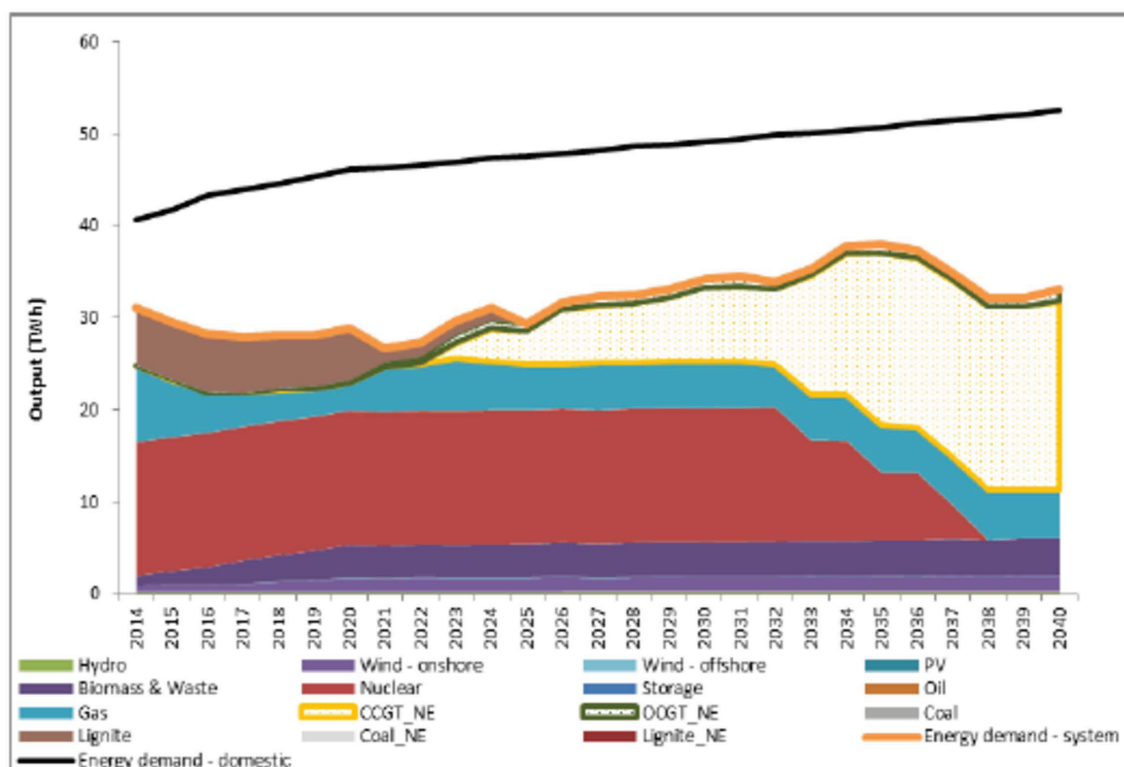


Source: NERA Study.

- (109) As explained above in recital 93, the NERA Study reiterates that in the absence of the construction of Paks II, the similar capacity commercially preferable to other types of energy generation investments based on Hungary's market conditions would be provided by OCGT's and CCGT's. The NERA Study suggests that despite replacing most of the capacity of the Paks II plant with new gas capacity in Hungary, Hungary remains heavily dependent on electricity imports throughout the modelling period in the gas counterfactual scenario (see Figure 8).

Figure 8

**Projected output per technology and national demand until 2040 (counterfactual scenario)**

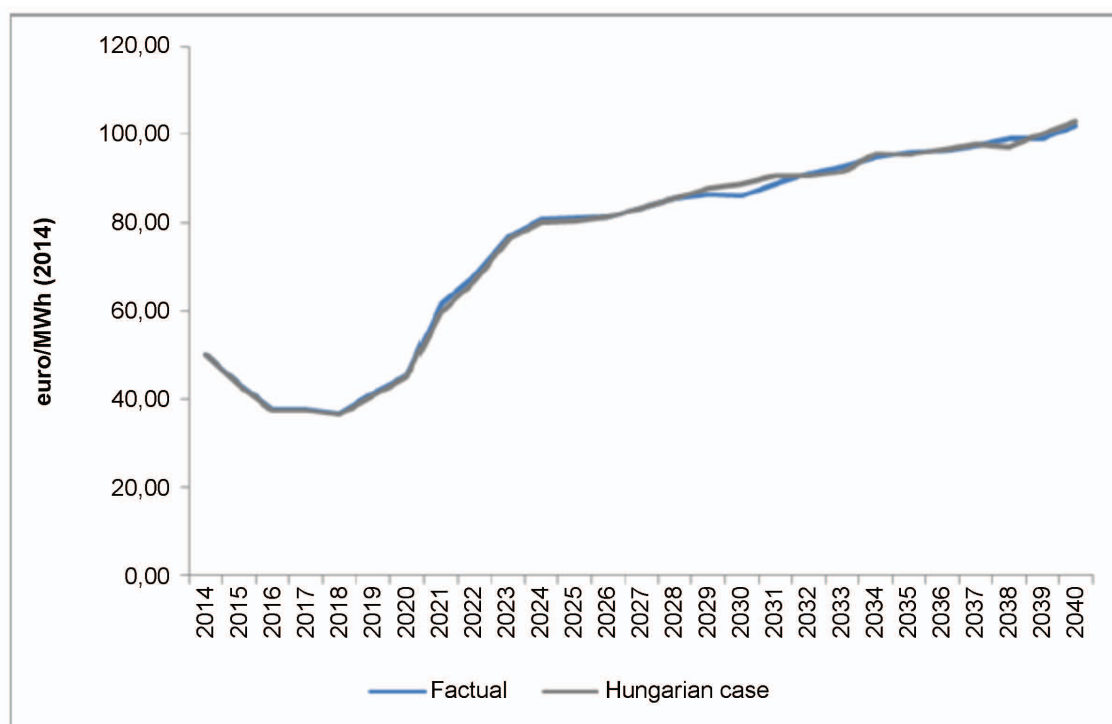


Source: NERA Study.

- (110) Furthermore, Hungary contends that because of the strong convergence between market prices in neighbouring countries and Hungary, competitors are likely to be able to hedge their risks by trading electricity in neighbouring markets, without the need to trade Hungarian electricity directly. Hungary claims, based on the modelling in the NERA study, that the base-load electricity price in the regional market would remain the same in the counterfactual scenario (see Figure 9).

Figure 9

### Difference in Hungarian Base load Prices between base case and the counterfactual

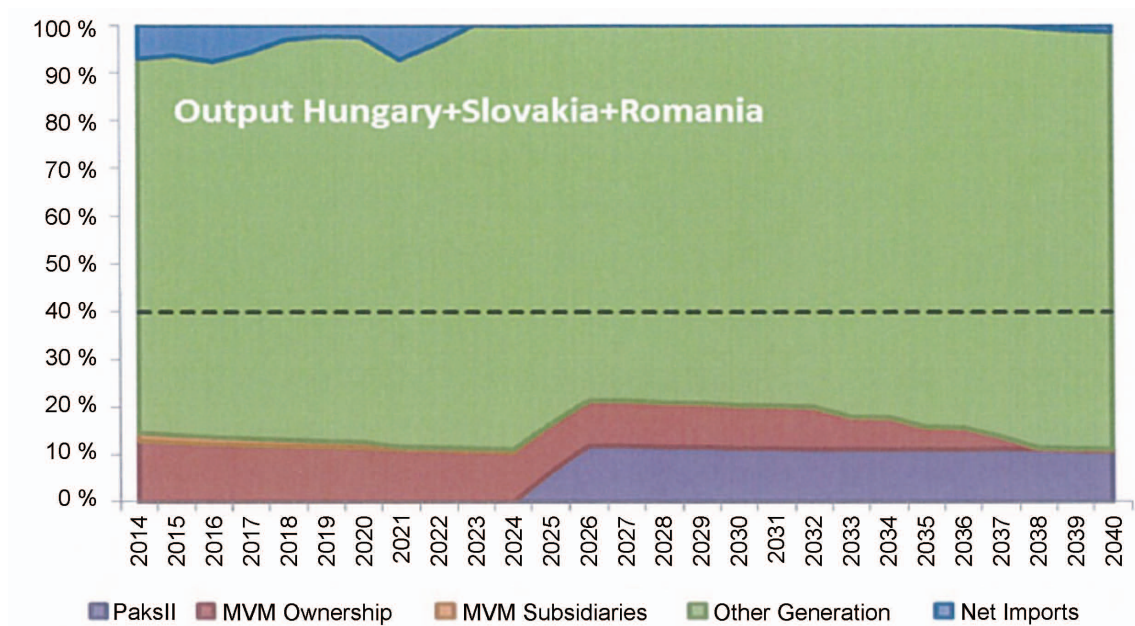


Source: NERA Study.

- (111) Hungary emphasises that it has assessed Paks II's possible effects in a wider market context. It argues on the basis of the NERA Study that, as Slovakia is the smallest of the neighbouring markets with which Hungary is currently market-coupled, the possible effects of Paks II would be the most perceptible in this country. It argues that Paks II's market presence in this coupled market would remain at the level of approximately 20 % until 2040.
- (112) The NERA Study also considers a possible wider coupled market (Hungary + Slovakia + Romania) arguing that these are the immediate neighbouring markets with which Hungary is currently market-coupled. On the basis of this, Hungary argues that even the combined market shares of MVM Group and Paks II (of between 10 and 20 %) in the coupled market of Hungary + Slovakia + Romania would be well below the threshold which would signify the possibility of dominance (see Figure 10).

Figure 10

**Combined market shares of MVM Group and Paks II by production (MWh) on the markets of Hungary + Slovakia + Romania**

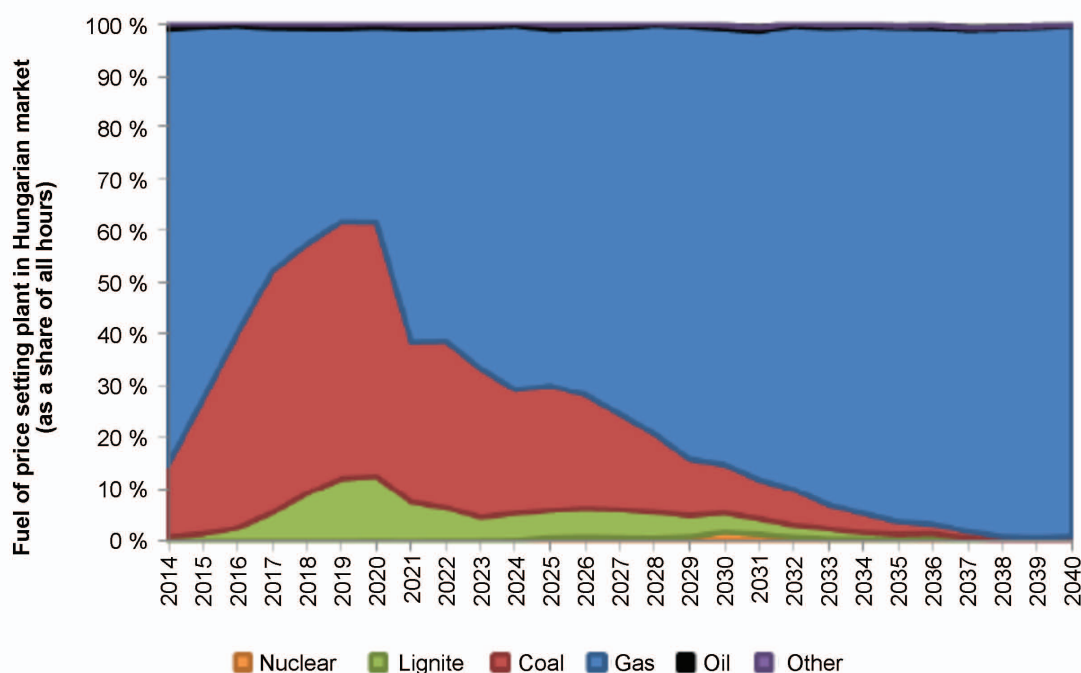


Source: NERA Study.

- (113) In addition, Hungary highlights that, both in summer and winter, the price setting technology would be lignite and coal fired power plants with higher marginal costs than Paks II, which means Paks II is expected to remain a price taker rather than a price maker even during the overlapping operating period of Paks NPP and Paks II when the probability of nuclear being the price setting technology will stay well below 5 % of all hours (see Figure 11).

Figure 11

## Price setting fuel in the Hungarian power market



Source: NERA Study.

- (114) Hungary also states in opposition to the Commission's findings in recital 144 of the Opening Decision, that the Paks II nuclear power plant will not cause any wholesale market liquidity risk by limiting the number of supply offers. It contends that as a separate generating unit, the new power plant should enhance liquidity and diversity of generation supply. Hungary also notes that Paks II does not currently have a customer base to sell power directly to without market trading.
- (115) Hungary relies upon a number of arguments presented by the United Kingdom in the Hinkley Point C case<sup>(42)</sup> on possible competition distortions and states that they would also apply to Paks II. Those arguments are set out as follows:
- (a) The measure would preserve the beneficiary's exposure to market forces and offer incentives to it to compete in the wholesale electricity market. Hungary maintains this argument and adds that it would offer no operating support in the form of Contracts for Differences ('CfD') for Paks II;
  - (b) The measure would not have any significant impact on interconnector flows and incentives to invest in those interconnectors with neighbouring countries. Hungary reiterates that the Hungarian electricity market is already a well interconnected market and that there are four interconnection projects under development;
  - (c) The measure would have no impact on price differentials between Hungary and neighbouring markets which are currently connected by way of interconnectors.
- (116) In addition, Hungary in its submission of 28 July 2016, provided additional information to address the concerns raised by the Commission in Section 3.3.7 of the Opening Decision regarding the overall balancing of any distortive effect of the measure on the internal market should the Commission find that the measure would comprise State aid.

<sup>(42)</sup> Commission Decision (EU) 2015/658 of 8 October 2014 on the aid measure SA.34947 (2013/C) (ex 2013/N) which the United Kingdom is planning to implement for support to the Hinkley Point C nuclear power station (OJ L 109, 28.4.2015, p. 44).

- (117) In this submission Hungary states that Paks II, its successors and affiliates shall be fully legally and structurally separated, shall be subject to independent power of decision within the meaning of paragraphs 52 and 53 of the Merger Jurisdictional Notice<sup>(43)</sup> and shall be maintained, managed and operated independent and unconnected from the MVM Group and all of its businesses, its successors and affiliates and other State controlled companies active in the generation, wholesale or retail of energy.
- (118) In addition, as regards the sale of electricity from Paks II, in the same submission Hungary shows that Paks II's power output trading strategy will be an arms-length commercial profit-optimising strategy which is carried out through commercial trading arrangements concluded through bids cleared on a transparent trading platform or exchange. Hungary also submits that the strategy for trading of Paks II's power output (excluding own consumption of Paks II) shall be devised as follows:
- (a) Tier 1: Paks II shall sell at least 30 % of its total electricity output on the day ahead, intraday and future markets of the Hungarian Power Exchange (HUPX). Other similar electricity exchanges can be used subject to the agreement or consent of the Commission's services to be granted or refused within 2 weeks from the request by the Hungarian authorities.
- (b) Tier 2. The rest of Paks II's total electricity output shall be sold by Paks II on objective, transparent and non-discriminatory terms by way of auctions. The conditions for such auctions shall be determined by the Hungarian energy regulator, similar to the auctioning requirements imposed on MVM Partner (decision 741/2011 of the Hungarian Regulator). Hungary confirms that the Hungarian energy regulator shall also oversee the conduct of these auctions. Hungary also confirmed that the auction platform for this Tier 2 shall be operated by Paks II and it shall be ensured that offers and bids are equally available to all licensed or registered traders on the same market terms. Hungary commits that the bid clearing system shall be verifiable and transparent and no restrictions shall be imposed on the final use for the electricity purchased.

### 3.3. FURTHER COMMENTS PUT FORWARD BY HUNGARY IN RESPONSE TO THE OPENING DECISION

- (119) Hungary states, that to the extent the project falls within the scope of the Euratom Treaty (e.g. Article 41 and Annex II, Articles 52 to 66 and Article 103), the Government of Hungary does not consider that TFEU and, in particular, the State aid rules in Article 107 and 108 TFEU are applicable to it. It alleges that the Euratom Treaty is *lex specialis* to TFEU. Therefore where the exercise of powers under the Euratom Treaty would be impeded by the exercise of powers deriving from TFEU, the provisions in the Euratom Treaty prevail. To support such a claim, Hungary relies upon the Commission Decision Kernkraftwerke Lippe-Ems GmbH<sup>(44)</sup>.
- (120) Hungary notes that although the Euratom Treaty does not establish a particular set of rules relating to State aid, point (d) of Article 6 and Article 70 of the Euratom Treaty illustrate that there is no general prohibition against State aid and that in specific cases subsidies from the Member States are encouraged.
- (121) Hungary stresses that the financing of the project in the nuclear industry should fall under a notification obligation within the meaning of Article 43 of the Euratom Treaty. It further argues that pursuant to Commission Regulation (EC) No 1209/2000<sup>(45)</sup> the data on the methods of financing should be provided in the event of any new project by the given Member State. Hungary argues that it had provided all the necessary information under Articles 41 and 43 of the Euratom Treaty and as the fuel supply agreement<sup>(46)</sup> was approved by the European Supply Agency in April 2015, Hungary believes that the Commission could not now claim that the financing of the project could be unlawful.

<sup>(43)</sup> Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (OJ C 95, 16.4.2008, p. 1).

<sup>(44)</sup> Commission Decision of 21 February 1994 relating to a procedure in application of the second paragraph of Article 53 of the Euratom Treaty (OJ L 122, 17.5.1994, p. 30), paragraph 22.

<sup>(45)</sup> Commission Regulation (EC) No 1209/2000 of 8 June 2000 determining procedures for effecting the communications prescribed under Article 41 of the Treaty establishing the European Atomic Energy Community (OJ L 138, 9.6.2000, p. 12).

<sup>(46)</sup> See recital 13(c).



- (122) Hungary compares the Euratom Treaty with the ECSC Treaty on the basis that they both are of sectorial nature and it argues that the ECSC Treaty contains a far reaching prohibition against State aid which was, in practice, aligned with Article 107 TFEU by virtue of Article 67 and Article 95 of the ECSC Treaty. Hungary states that in applying the rules on State aid laid down in the TFEU the Commission would misconstrue the regulatory goal pursued by the drafters of the Euratom Treaty which lacks any specific State aid provisions.
- (123) Hungary further notes that no other equity investment in the construction of a nuclear power plant in the Union has ever been subject to a State aid investigation by the Commission, including those at Flamanville or Hanhikivi. In Hungary's view the investment at Hinkley Point C was subject to State aid scrutiny only because it had specific financial characteristics (such as a State credit guarantee and the CfD) unlike other investments in Europe.

#### 4. COMMENTS FROM INTERESTED PARTIES

##### 4.1. COMMENTS ON THE EXISTENCE OF AID

- (124) The comments received by the Commission from the following third parties contained quantitative information and analysis in relation to the existence of measures:

- Submission by Hungarian Member of the European Parliament (MEP), Mr Benedek Jávor ('Jávor submission'),
- Submission by Green Peace ('GP submission') including a study prepared by its economic advisors, the Candole Partners ('Candole Study')<sup>(47)</sup>,
- Submission by EnergiaKlub ('EK submission') including a study prepared by Mr Balazs Felsmann ('Felsmann study')<sup>(48)</sup>.

##### The Jávor submission

- (125) The Jávor submission concentrates on owner costs which are costs that are not included in the EPC contract (see Section 2.5.2 of this Decision), and claims that those costs may be heavily underestimated. In particular, the submission makes the following claims:
- (a) As the EPC contract for Paks II was made on the basis of the 'Leningradskaya design'<sup>(49)</sup>, it is reasonable to believe that an additional investment in safety system will be required that would cost at least EUR 1 billion.
  - (b) The direct fresh water cooling system is insufficient to cool down the water in case of the parallel operation of Paks NPP and Paks II during hot summer days. This would put an extra burden on the environment, and would require investment in a more efficient cooling tower based cooling system which is about 40 % more expensive than a direct cooling system.
  - (c) The amount envisaged to be deposited in the Central Nuclear Fund is unlikely to be sufficient for the storage of radioactive waste and the decommissioning. In particular, the interim storage, the final depository for nuclear waste and the decommissioning would cost at least as much as EUR 150 million, EUR 1,54 billion and EUR 1,734 billion respectively.
  - (d) The grid upgrade required for the integration of the new nuclear power plant blocks, including investments both in the 400 kV cable-system and the 120 kV auxiliary high voltage cable can cost as much as EUR 1,6 billion.
  - (e) Investments needed to comply with the actual grid regulation, both in the form of a pumped storage power plant and additional generation units providing the security reserves, required by law to be equal to the biggest national electricity generating unit, would cost EUR 1,2 billion.

<sup>(47)</sup> See Candole Partners — NPP Paks II, Economic Feasibility Assessment, Feb. 2016, available at <http://www.greenpeace.org/hungary/Global/hungary/kampanyok/atomenergia/paks2/NPP%20Paks%20II%20Candole.pdf>.

<sup>(48)</sup> See Felsmann Balázs, 'Működhet-e Paks II állami támogatások nélkül? Az erőműtársaság vállalatgazdasági közelítésben', available at [https://energiaklub.hu/sites/default/files/paks2\\_allami\\_tamogatás\\_2015jun.pdf](https://energiaklub.hu/sites/default/files/paks2_allami_tamogatás_2015jun.pdf).

<sup>(49)</sup> A description of the Leningradskaya NPP can be accessed at: [http://atomproekt.com/en/activity/generation/vver/leningr\\_npp/](http://atomproekt.com/en/activity/generation/vver/leningr_npp/), accessed on 24 February 2017.

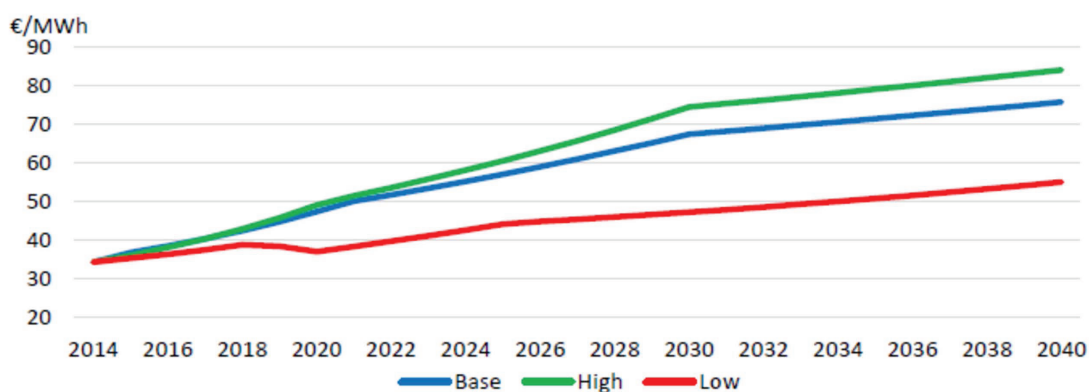
- (f) Losses from reduction of operation of one of the two neighbouring nuclear power plants for system balance reasons could imply a total financial loss of around EUR 1,2 billion.
- (g) Various taxes and duties not included in the EPC contract may add up to an additional EUR 1,8 billion.
- (126) The submission argues that the cost items listed in recital 125 should be added to the costs of the project, which in turn would dramatically reduce the project's IRR. It also points out that delays and shorter lifetime of the plant would further reduce the project's IRR.

### The Candole study

- (127) The Candole study uses the assumptions and information included in the Economic Study and looks at the viability of the Paks II project. In particular, it argues that the price forecasts used by the Economic Study may be overly optimistic and that more realistic price forecasts would make the project loss-making even if the operational assumptions of the Economic Study are accepted.
- (128) To illustrate this point, the Candole study develops its own long term electricity price forecast. In particular, it forecasts future long term electricity prices by using coal, oil and gas price forecasts from the 2015 edition of the International Energy Agency's World Energy Outlook (IEA WEO 2015) and calculates the marginal cost of production for various types of generators<sup>(50)</sup>. Furthermore, it also constructs separate forecast for different future scenarios considered in the IEA WEO 2015 publication, i.e. (i) 'New Policy Scenario', corresponding to policies and implementing measures affecting energy markets that had been adopted until a few months before the IEA WEO 2015 publication went to press, together with relevant declared policy intentions, (ii) 'Current Policies Scenario', corresponding to policies enacted within a few months before the Candole Study's publication went to press, and (iii) 'Low Oil Price Scenario' that explores the implications of sustained lower prices (coming from lower oil prices) on the energy system<sup>(51)</sup>. The following graph illustrates the derived long term electricity price forecasts for each of the three scenarios.

Figure 12

### Long-run electricity price forecast curves (EUR/MWh)



Source: Candole Partners.

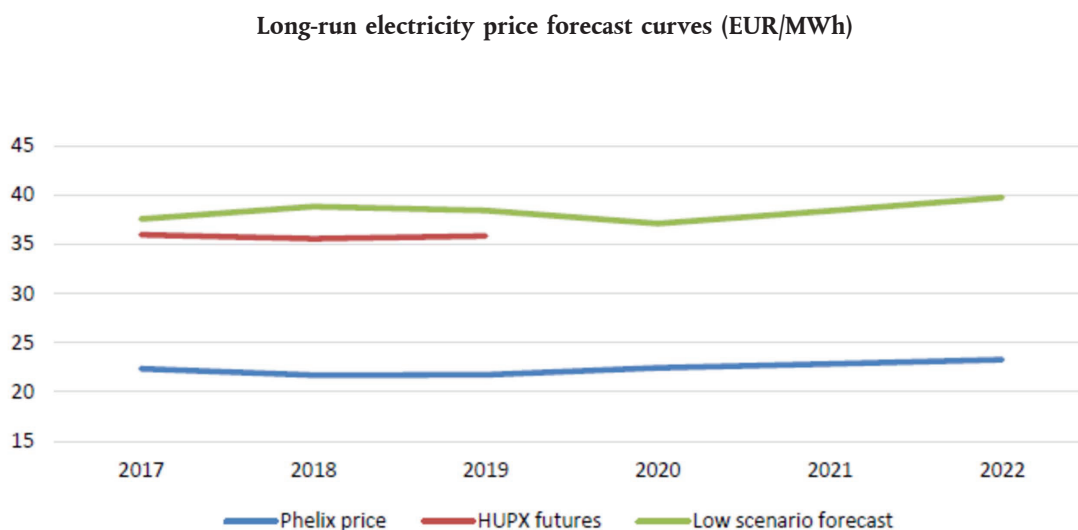
- (129) The figure illustrates that the Current Policies Scenario implies slightly higher future prices for electricity, whereas the Low Oil Price Scenario implies substantially lower future electricity prices than the central New Policies Scenario, the one used in the submissions by Hungary.

<sup>(50)</sup> For the IEA WEO 2015, see <http://www.worldenergyoutlook.org/weo2015/>

<sup>(51)</sup> The IEA WEO 2015 also considers a fourth scenario, the '450 Scenario' depicting a pathway to the 2 °C climate goal that can be achieved through the technologies that are close to becoming available at a commercial scale.

- (130) In addition to the forecasts in Figure 12, the Candole study also compares IEA WEO 2015 Low Oil Price Scenario-based long-term electricity price forecast with the future contracts traded (as of February 2016) in the German and Hungarian electricity exchanges. Those curves are presented in Figure 13 below.

Figure 13



Source: Candole Partners.

- (131) The figure points out that up to 2022, when German-Austrian contracts can be traded, that German futures contract prices are below the IEA WEO 2015 Low Oil Price scenario price forecast. The same is true for the Hungarian exchange futures contracts that can be traded up until 2019 <sup>(52)</sup>.
- (132) Based on those considerations, the Candole study argues that under long-term electricity price forecasts as shown in the Economic Study, the Paks II project would be loss-making even if the operational assumptions of the Economic Study are accepted <sup>(53)</sup>.

### The EK submission

- (133) The EK submission identifies potential shortcomings in the Commission's Opening Decision as well as problematic points in Hungary's Economic Study. It also highlights some risks that the project would face. Finally, it submitted the Felsmann study, as a quantitative analysis of the viability of the Paks II. The study calculates the net present value of the Paks II project by using the operating costs of the current Paks NPP and finds that in the majority of the considered scenarios the project would be loss-making.
- (134) In relation to the Opening Decision, the EK submission points out that some cost items had been left out from the assessment presented in the Opening Decision or were not considered in their entirety. For example, it claims that it is not clear to what extent the amount in the EPC contract included the potential extra costs of nuclear safety, the costs of grid development required by the integration of the two new reactors of Paks II into the system or the construction of an appropriate cooling system. The submission also raises doubts whether the costs of preliminary studies, permits, communication have been accurately reflected.

<sup>(52)</sup> The difference between German and Hungarian futures prices are argued to possibly come from the imperfect market coupling.

<sup>(53)</sup> There is an additional section in the Candole study that makes a comparison between the costs of Paks II and the operating costs of EPR reactors estimated by the French Court of Auditors (2002) published in Boccard, N. 'The Costs of Nuclear Electricity: France after Fukushima', available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2353305](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2353305).

- (135) Furthermore, the submission argues that the cost figures of EUR 2,1-2,7/MWh for waste and decommissioning may be underestimated as this figure is EUR 4,5/MWh for the current Paks NPP. In addition, it also highlights the negative impact of the project for future central government budgets, which it claims would conflict with the statistical accounting system and the debt-increasing rule of the Union<sup>(54)</sup>. Finally, the submission highlights the corruption risk, mostly associated with the size of the project and the information advantage of the supplier and owner<sup>(55)</sup>.
- (136) In relation to the Economic Study prepared by Hungary, the submission questions the high load factor (92 %) used in the calculations, especially during the operation in parallel of Paks NPP and Paks II, during periods of low demand as well as the validity of the price forecasts used in the study.
- (137) In relation to various types of risks for the project, the EK submission highlights the potential impact of project delays and of cost overruns as well as the necessity of further state supports during the lifetime of the project.
- (138) To support its concerns regarding the viability of the Paks II project, the EK submission makes reference to the Felsmann study. This study calculates the net present value of the Paks II project by using the operating costs of the current Paks NPP (that includes a major mid-term overhaul for the plant) and a number of alternative figures (i.e. 75 %, 85 % and 92 %) for the utilisation rate with some electricity price forecasts based on publicly available international sources (e.g. the US Energy Information Administration and the UK National Grid). The study finds that in a majority of the considered scenarios the project would be loss-making, implying the existence of State aid.

#### Government of Austria

- (139) Austria contends that the construction and operation of nuclear power plants is unprofitable, given all the related costs which must be internalised under the 'polluter pays' principle. Austria considers that the MEIP principle is not complied with as regards Hungary's investment in Paks II. Austria argues that there is no evidence that the economic studies submitted by Hungary to the Commission have been carried out with due diligence or that the costs considered for the calculations contain all possible costs in compliance with the 'polluters' pays' principle.
- (140) Austria also claims that the remaining conditions for the existence of State aid are met.

#### Other submissions on the existence of aid

- (141) Paks II argued that the Opening Decision incorrectly used a single price forecast curve, especially considering the long time span of the project. It is also noted in some of its observations that the Commission is incorrect to use the operation and maintenance costs (the 'O&M costs') of the current Paks NPP to justify O&M costs of the new Gen III+ units 5 and 6. Furthermore Paks II stresses that whilst their initial investment decision was made at the time of the signing of the EPC Contract and that such commitment was made only to the development stage of the expenditure as Paks II's final commitment to construction period expenditure occurs at a defined point in the future. Paks II states that up until this future point, the company may decide, where the economics of the project are varied due to external market changes, not to progress with the project, however this possibility is rather unlikely. Paks II also refers to the report prepared by Rothschild & Co for the Hungarian Government ('the Rothschild Study')<sup>(56)</sup> which concludes that the IRR range could reach 12 % which is significantly higher than the range of between 6,7-9 % referred to by the Commission in the Opening Decision. Finally, Paks II notes that the WACC and IRR ranges calculated by the Commission overlap and therefore the project can be expected to provide appropriate remuneration.

<sup>(54)</sup> This is referenced by the Romhányi Balázs, 'A Paks II beruházási költségvetés-politikai következményei', available at [https://energiaklub.hu/sites/default/files/a\\_paks\\_ii\\_beruhazas\\_koltsegvetes-politikai\\_kovetkezmenei.pdf](https://energiaklub.hu/sites/default/files/a_paks_ii_beruhazas_koltsegvetes-politikai_kovetkezmenei.pdf)

<sup>(55)</sup> This is referenced by the study Fazekas, M. et al, The Corruption Risks of Nuclear Power Plants: What Can We Expect in Case of Paks2?, available at [http://www.pakskontroll.hu/sites/default/files/documents/corruption\\_risks\\_paks2.pdf](http://www.pakskontroll.hu/sites/default/files/documents/corruption_risks_paks2.pdf)

<sup>(56)</sup> <http://www.kormany.hu/download/a/84/90000/2015%20Economic%20analysis%20of%20Paks%20II.pdf>

- (142) Enersense Group alleges that the WACC formula used by the Commission is not accurate insofar as the Commission used overly conservative factors in determining it. In its view, the appropriate cost of debt that should be applied to the WACC element of the MEIP assessment is 4,5 % pre-tax, or 3,6 % post tax with minor scheduled adjustments over time. It argues that as the Russian supplier provides approximately 80 % of the funding of the contract price, the return on investment should be based on a leverage of 80 % to reflect the source of funds of investment, in line with other nuclear power plants. Enersense Group states that when one assumes an 11 % cost of equity and a 3,6 % cost of debt post tax and apply an 80 % reduction on basis of leverage, the WACC should be 5,1 %. Furthermore it argues that this would rise to 6,2 % where a reduction on the basis of 65 % leverage was applied. As a conclusion it notes that the return on investment would be improved considerably by the choice of market based cost of debt and leverage factor.
- (143) Further arguments were put forward by interested parties that the WACC is reduced significantly once the plant is connected to the grid whilst the enterprise value increases. Therefore parts of or the entire plant could be sold at a price comparable with other nuclear power facilities currently in operation. It is argued that the Commission's calculations in the Opening Decision do not reflect such investment flexibility.
- (144) The Commission also received observations on the importance of fully assessing and including the opportunity costs of excluding nuclear technology in the national energy mix in the context of significant changes to the existing power generation capacity portfolio. According to those observations in addition to models on 'return on investment' or 'discount cash flow', it is important to consider that the Paks II project is a substantive investment in an existing sector which adds real value, not simply a 'portfolio investment' opportunity or by way of a short-term speculation. They argue that those features should also be reflected in the calculations of the Commission as to the project's viability.
- (145) Several observations refer to the conclusion in the Rothschild Study that the project can be viable solely based on market terms, even where it is underpinned by very pessimistic assumptions. Some also argue that the key assumptions as regards future electricity prices are quite moderate and that those prices are expected to increase after 2025. On that basis Paks II would not receive an advantage.
- (146) According to some observations the fact that the project is carried by way of an EPC agreement on a turnkey basis, that would make it attractive to any market economy investor and therefore Hungary would be investing also on market based terms.

#### 4.2. COMMENTS ON THE POSSIBLE COMPATIBILITY OF THE MEASURE WITH THE INTERNAL MARKET

##### 4.2.1. COMMENTS AS REGARDS THE OBJECTIVE OF COMMON INTEREST

- (147) Austria, IG Windkraft, Oekostorm AG and other third parties contend that subsidising the construction and operation of new nuclear power plants is not provided for, under the principles laid down in Article 107(3) TFEU as being compatible with the internal market. Nuclear power would not be a new, innovative or sustainable technology for electricity generation which could contribute to achieving a goal of the Union of increasing the proportion of energy generation by renewable technologies. Therefore, the project should not be able to receive temporary support until it achieves market maturity.
- (148) Austria claims that Article 2(c) and Article 40 of the Euratom Treaty do not allow for the promotion of new nuclear investments to be considered an objective of common interest due to the fact that no common interest within the meaning of Article 107(3) TFEU can be interpreted from the Euratom Treaty. In addition, such an objective would be in conflict with other objectives of the Union under TFEU, namely the precautionary principle under Article 191 and the sustainability principle under the Horizon 2020 programme<sup>(57)</sup>.
- (149) According to several submissions, the project would contribute to the Europe-wide objectives of deployment of nuclear installations as well as nuclear research which are also recognised by the Euratom Treaty.
- (150) Many observations argue that the fact that nuclear energy would provide a clean, low-carbon source of energy should be recognised by the Commission as a common objective of the Union that justifies the investment.

<sup>(57)</sup> <https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>

- (151) Some of the observations refer to Article 194(2) TFEU which permits Member States to determine their energy generation mix. The observations point out, that Hungary's envisaged energy generation mix forms part of its the National Energy Strategy and follows a nuclear-coal-green path. On this basis the investment could be justifiable.
- (152) The Commission also received comments which point out that nuclear energy provides a very long term, safe and reliable source of energy in the Union energy generation mix. Those comments stated that electricity generated from nuclear sources, typically at high capacity levels (between 85-90 %) could contribute significantly to a long term security of supply. Other interested parties submitted that, due to the significant gap in future installed capacity expected to occur by 2030 with the phasing out of the existing units at Paks NPP and due to the reliance on electricity imports, the project could be an ideal option to ensure security of supply for Hungary and reduce fuel dependency.
- (153) Arguments were submitted to the Commission that the completion of the project would contribute to growth in the region mainly by creating jobs. Additionally, some observations point out that there is a substantial opportunity for companies in the Union of all sizes to participate in the completion of the project thereby boosting the business supply chain. Those observations suggest that such envisaged growth is a common interest that could justify the completion of the project.

#### 4.2.2. COMMENTS AS REGARDS THE APPROPRIATENESS OF THE MEASURE

- (154) IG Windkraft and Energiaklub argue that the measure is inappropriate given the expense of the project when compared to the possible alternatives that would target the electricity gap in future installed capacity. A similar amount of subsidy could produce a much higher annual amount of electricity when invested in other sources of electricity, such as renewable technologies.

#### 4.2.3. COMMENTS AS REGARDS THE NECESSITY OF THE MEASURE AND THE INCENTIVE EFFECT

- (155) Austria claims that the Commission has incorrectly defined the relevant market in order to assess whether or not there may be an existence of a market failure, i.e. the nuclear power market in Hungary. Austria claims that the correct relevant market would be the liberalised internal electricity market of the Union. Austria further argues that there is no market failure in respect of electricity generation and supply on the internal market in electricity. On the contrary, electricity prices would be falling, due, in part, to sufficient generating capacities. Moreover, Hungary is well interconnected to the grids of neighbouring Member States.
- (156) Austria and IG Windkraft argue that where Hungary was to face a security of supply issue, nuclear power plants may not be the appropriate means to address that issue. They argue that more environmentally friendly, flexible and cheaper energy sources in small, decentralised units may be more appropriate. Austria further argues that nuclear power plants are sensitive to heat waves due to cooling requirements and that Member States are almost 100 % dependent on imported uranium ore.
- (157) Third parties have also argued that the market alone would deliver the construction of new generation capacities, in the electricity generation sector. The fact that Hungary is dependent on electricity imports would not constitute a market failure and, in particular, not one that a new nuclear power plant would address. The comments put forward show that imports of cheaper electricity from other Member States are a normal and acceptable effect of a functioning market and not a market failure. This simply indicates the ability to buy commodities at the lowest market price. According to the comments received, power prices are determined by many factors including commodity prices, supply and demand. In Europe, in particular, declines in the prices of electricity would be a reaction to chronic generation over capacities. Since this could be considered a reaction of an efficient functioning market, it could not be argued that the decrease in market energy prices as a result of imports would represent a market failure as a justification for the construction of new nuclear capacity.
- (158) According to the comments received, even where there was a market failure in the electricity generation sector, Hungary should consider more options in a transparent and non-discriminatory manner.



- (159) Other observations suggest that although the challenges for investment in nuclear power, including the large upfront capital investment and the need for public and political support are well known, recognising those difficulties is not equivalent to establishing that nuclear power development is associated with a market failure. The same observations highlight that whilst the Commission concluded that there was market failure in the case of Hinkley Point C, it should not be assumed that all nuclear investments could only be realised with subsidy regimes or that there are grounds to assume generic nuclear market failure.

#### 4.2.4. COMMENTS AS REGARDS THE PROPORTIONALITY OF THE MEASURE

- (160) Austria argued that since State aid must always be limited to the minimum amount required. In this instance, where the construction of the proposed project is being made without a call for tender, it could not be determined whether the total costs of the project would be limited to the minimum amount required.
- (161) Energiaklub claims that the Hungarian authorities did not investigate the minimum level of financial support that would make the project deliverable. Instead the Hungarian authorities sought to finance the project in its entirety, possibility also including operational costs as well. Energiaklub also stresses that according to the calculations which Hungary has provided, State aid would not only be limited to the implementation of the investment but it would also be granted to the operation of the project which may overcompensate Paks II.

#### 4.2.5. COMMENTS AS REGARDS THE EFFECT OF THE MEASURE ON THE INTERNAL MARKET

- (162) Austria claims that State aid for a technology, which is not in itself profitable within the liberalised internal market for electricity, leads to excessive distortions of competition. In addition, it may prevent new, sustainable and more cost-effective market participants from entering the market or force those market participants out of the market. Austria argues that NPPs are deployed to cover high base load capacity and that capacity is given priority when connected to a grid, since NPPs can only slightly vary their capacities. Whilst they have high construction and decommissioning costs, they have low operating costs which allows them to enter the merit order.
- (163) The Austrian authorities and IG Windkraft argue that the construction of the new NPPs will create a significant market power for the operators of the power plants at the Paks site by increasing market concentration and, possibly, leading to an abuse of a dominant position under Article 102 of the TFEU.
- (164) The MVM Group and Paks II argue that, following the 100 % sale of the shares of Paks II to the State by the MVM Group, the two companies became completely independent of one another. They highlight that the MVM Group has no control, directly or otherwise, over the management and operation of Paks II. They also stress that MVM Group and Paks II are two separate power generation companies, like any other competitors, and there is no reason to assume any coordination or activities or that the two companies would be combined. Moreover, the MVM Group argues that its own strategy includes possible investments that may compete with Paks II into the future.
- (165) Paks II argues that the project is intended to be replacement capacity for the current four units of Paks NPP. Those current units are expected to be phased out by the mid 2030's, whilst the new units 5 and 6 (the Paks II project) would not be operational until the mid-2020's. Paks II argues that therefore the evaluation of market shares and claims of dominance are unfounded and cannot be considered at this time.
- (166) Several interested parties stressed that that the energy market to be examined would be larger than the individual State's territory where there are a number of international competitors, given the large scale of Hungary's electricity imports and the country's very good interconnection level with neighbouring countries.
- (167) Some parties explicitly argue that the project could have a potential downward impact on regional electricity markets, such as Germany where the annual base load price would be expected to fall by up to 0,6 % by 2025, by up to 1,1 % by 2030 and by up to 1,2 % by 2040. On the other hand, some parties also argue that renewable installations in Germany would earn lower revenues due to the new reactors of Paks II and that the burden for taxpayers to finance German renewable aid schemes would increase whilst suppliers of 'grey electricity' could face a saving of up to 1,02 % by the year 2030.

#### 4.3. ADDITIONAL COMMENTS RAISED BY INTERESTED PARTIES

- (168) Several observations highlight that the details of the project were not entirely shared with the public in Hungary. They also argue that the decision on Paks II is technically unjustified, as there were no preparatory investigations made about how an investment in energy efficiency measures and renewable energies on the same scale would help security of supply. Those observers therefore make the point that given the lack of wide public and professional involvement, the project should not go ahead.
- (169) Certain submissions point to the potential danger of nuclear power plants. Some observations express concerns regarding Hungary's and Paks II's ability to deal with nuclear safety incidents, including the safe disposal of nuclear waste.
- (170) Some observations stressed the absence of a tender process in the appointment of the constructor of the new generating units, which they believed, would conflict with the provisions of Union law. In addition, MEP Jávör alleges that the presumed violation of Union public procurement rules is inherent and intrinsically linked to the measure as, he believes Russia would not have granted a loan to Hungary for the Paks II project without securing the investment for Rosatom which would avoid Union public procurement rules. He concludes that the assessment of whether the use of the Russian loan constitutes an unlawful State aid could not be separated from the avoidance of public procurement rules, they are intrinsically linked and their effect should to be assessed together.
- (171) Several comments were made objecting to the fact that the project is being carried out by way of a Russian loan. They argue that it would promote fuel and financial dependence whilst contravening the EU's Energy Security Strategy by curtailing Union market players from the development of a Union-wide energy network and infrastructure.
- (172) Some interested parties allege that where Hungary decided that it needed new electricity capacities for the future, it should have complied with Article 8 of the Directive 2009/72/EC of the European Parliament and of the Council<sup>(58)</sup>. In this instance there was no tendering procedure or any equivalent procedure in terms of transparency and non-discrimination providing for any new capacity. Thus, in their view, the Paks II investment could violate Union law.
- (173) Some parties argue that State aid is not appropriate to be used in cases where it would relieve the polluter of the burden of paying for the cost of its pollution within the spirit of the Community Guidelines on State aid for environmental protection<sup>(59)</sup>.

#### 4.4. RESPONSE OF HUNGARY TO THE COMMENTS RAISED BY INTERESTED PARTIES

- (174) Hungary submitted its response to third party comments on the State aid Opening Decision ('Response to third party comments') on 8 April 2016.
- (175) In particular, Hungary strongly disagrees with the comments received from the Government of Austria, Greenpeace Energy, Energiaklub and MEP Benedek Jávör, where the various third parties alleged that costs relating to safety and environmental regulations, debt financing, insurance, safety, waste disposal, decommissioning, transmissions connections and retrofit investments had not been included in Hungary's analysis, saying that those parties were misinformed and that their claims unfounded.
- (176) The response includes a detailed rebuttal of the comments submitted by MEP Benedek Jávör. In particular, Hungary points out that:

— the costs of all the necessary safety investments are included in the EPC contract;

— the choice of the direct cooling system is supported by the Environmental Impact Assessment of the project;

<sup>(58)</sup> Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (OJ L 211, 14.8.2009, p. 55).

<sup>(59)</sup> Community Guidelines on State aid for environmental protection (OJ C 82, 1.4.2008, p. 1).

- the cost figures related to waste management and decommissioning were computed by the Agency of Radioactive Waste Management on the basis of Act CXVI of 1996 on Atomic Energy;
  - the costs related to the grid connection for Paks II are included in the financial analysis of the project;
  - there will be no reduction in the operation of either of Paks NPP and Paks II during low demand hours as Paks II should be replacing older and existing generation capacities that would be phased out;
  - being a Generation III+ modern technology, it is safe to assume a relatively high (90+%) utilisation rate during the lifetime of Paks II;
  - the 60 years operational period is widely accepted internationally as it is a standard assumption even for the more inferior Generation III plants;
  - the project is VAT-neutral and as a large part of services will be provided by EU-localised suppliers, the presumption/calculation of custom duties is inaccurate.
- (177) Hungary argues that they conducted extensive sensitivity analysis to consider the impact of assumptions and variables such as plant lifetime, O&M costs, waste management and decommissioning costs, load factors, macroeconomic factors such as foreign exchange and inflation, different market price scenarios, delays, etc. on the business case and this sensitivity analysis would fully support its conclusion that the measure would not amount to State aid.
- (178) As regards the observations received on the possible compatibility of the measure, Hungary reiterates several arguments put forward in relation to the free choice and diversification of the generation mix, the need for replacement capacity, decarbonisation, job creation, affordability and claimed multiplier effects.
- (179) Hungary states that the argument of the Government of Austria that the Euratom Treaty objective regarding the 'development of nuclear energy in the Community' is 'already achieved and cannot be used in support of a common interest within the meaning of Article 107(3) TFEU due to the developed technically and numerous nuclear power plants that have been built in Europe' is flawed. The argument, in Hungary's view, confuses the objective of developing nuclear generation with the concept of technology which cannot be claimed to have been a static. Hungary argues that the Euratom Treaty continues to form part of the constitutional arrangement of the Union and that this has not been repealed. Finally, Hungary stresses that Austria and Greenpeace did not bring forward any case-law to suggest that the objectives of common interest matters are necessarily finite or limited in duration.
- (180) As regards the diversification of the energy generation mix, Hungary refutes Austria's and the Austrian Wind Energy Association's allegations about a Union-wide uranium dependency and stresses that there is wide diversity and availability of uranium from significant unmined sources. It also argues that the mere fact that a resource is finite would not mean that its use is unsustainable and replies upon commentaries made by energy economist Loreta Stankeviciute on behalf of the International Atomic Energy Agency (IAEA) <sup>(60)</sup> according to which 'nuclear energy compares favourably across many sustainability indicators'.
- (181) Hungary highlights that some of the arguments put forward in relation to the need for decarbonisation through the use of nuclear sources of energy are valid as renewable technologies have high costs and they are intermittent in the type of energy generation. It also argues that fixed renewable subsidised tariffs are inconsistent with allowing free market conditions and quotes Greenpeace who argued that fixed power purchase price agreements would be less advantageous in scenarios of lower market prices, though this is not how Paks II would sell its electricity.
- (182) Hungary recites several sources which claim that the measure will not unduly distort competition and highlights that the Commission did not have doubts as regards the compatibility of the measure with the internal market (as Greenpeace suggested) but rather on the question of the existence of aid.

<sup>(60)</sup> <https://www.oecd-neo.org/ndd/climate-change/cop21/presentations/stankeviciute.pdf>

- (183) In the same scope (possible distortions of competition), Hungary refutes the arguments put forward by Greenpeace that it would put in place a fixed tariff (similar to that of Hinkley point (C) in order to support the operation of Paks II in the long term.
- (184) Hungary contests the observations which claimed that the project would crowd out renewables investments in Hungary and neighbouring countries. It argues that the national energy strategy includes renewables alongside nuclear and that the future gap in installed capacity cannot be fulfilled with nuclear energy alone. Therefore the additional nuclear capacities would not prevent the development of renewable energy. Hungary notes that the market analysis included as part of Greenpeace's submission by Energy Brainpool assumes renewable deployment along with Hungary's national renewable target.
- (185) Hungary reiterates the views submitted by the MVM Group that no merger is envisaged between the MVM Group and Paks II and thus there will be no concentration of the market. It also reiterates the MVM Group's statement that MVM Group's business strategy includes possible investments that may be competing with Paks II in the future.
- (186) Hungary also reiterates the submissions that the market to be examined should be more widely interpreted than the state of Hungary because of the high level of interconnection. In that context the measure's effect would be negligible. Hungary also challenges the methodology of the analysis conducted by Energy Brainpool on behalf of Greenpeace regarding the potential impact of the project on regional electricity markets, such as in Germany. It argues that the approach used involves an assessment of the impact of the project in an exclusively domestic context without taking into account of the role played by imports of energy into Hungary and extrapolating that to Germany on the implicit assumption that the impact on the German electricity market would be the same as on Hungary's. Hungary also states that the analysis has flaws insofar as it assumes the existing level of interconnection capacity, while ignoring further interconnections which form part of the objectives of the Union.
- (187) As regards the observations pointing out safety issues, Hungary argues that there is significant knowledge and expertise in the country on the basis of the existing four nuclear units. It also notes that the Hungarian Atomic Energy Authority (who issues licenses for nuclear facilities) is already very familiar with the VVER technology and has developed a 2-year internal training programme on this technology. The programme involves members of the regulatory body who hold significant relevant academic and practical experience, training and developing new staff members with the tasks and duties they will undertake as part of the regulator.
- (188) In addition, Hungary emphasises that both the environmental authority and the regulator are independent of one another, which ensures a sound and objective safety framework. Hungary also notes that the relevant technical requirements of the project regarding nuclear safety were developed by combining Hungarian law, European utility requirements, IAEA and Western European Nuclear Regulators Association safety recommendations, as well as lessons learnt from the Fukushima accident.
- (189) As a response to the observations commenting on the apparent lack of transparency during the preparations of the project, Hungary explained that it achieved transparency as a result of the Parliamentary decision making process. The parliamentary process ensured access of all relevant information to all interested parties and authorities including the Commission. As part of the process all independent expert reports were published including the economic analyses of the project, and all environmental impact assessment materials were made available in multiple languages.
- (190) Hungary also refers to public consultations held between 17 March and 4 May 2015 by the government commissioner responsible for the project addressing the potential environmental effects of the construction and operation of Paks II. Hungary also notified all its neighbouring (EU and non-EU) third countries about the project and held nine public consultations in a number of countries on the project.

- (191) In relation to the observations which allege that the completion of the project breaches Directive 2014/24/EU of the European Parliament and of the Council<sup>(61)</sup> and Directive 2014/25/EU of the European Parliament and of the Council<sup>(62)</sup>, the Hungarian authorities explain that the IGA and the implementation agreements fall outside the scope of TFEU and Directives 2014/24/EU and 2014/25/EU. In addition, they state that even where TFEU would apply, the IGA and the Implementation Agreements would fall within the specific exemption in respect of international agreements as set out in Article 22 of the Directive 2014/25/EU or the technical exemption set out in Article 50(c) of that Directive and therefore should be exempt from the application of Union public procurement rules. Hungary explains that the IGA sets out clear procedures for the award of the Implementation Agreements, including specific requirements for the appointment of companies and the award of sub-contracts.
- (192) Hungary also refutes the observations which allege that it is in breach of Article 8 of Directive 2009/72/EC. Hungary argues that that Directive does not apply to the project because it falls within the exclusive remit of the Euratom Treaty, which takes precedence over the rules in the TFEU and any secondary legislation deriving therefrom. The Hungarian authorities also highlight that in their view, as the project would be State aid-free, the capacity tendering provisions of Directive 2009/72/EC would not apply.
- (193) Hungary finally refers to the case law of the Court of Justice of the European Union<sup>(63)</sup> which states that the existence or absence of a breach of Union law cannot be taken into account in the context of a State aid investigation. In view of this, Hungary believes that any possible breach of the Electricity Directive should be examined outside the scope of the formal State aid investigation. Hungary also refers to the Commission's State aid decision in Hinkley Point C stating that, instead of specified tenders, equivalent procedures in terms of transparency and non-discrimination can be used within the meaning of Article 8 of Directive 2009/72/EC. Hungary submits that the award of sub-contracts would be conducted in accordance with the principles of non-discrimination and transparency.

#### 4.5. ADDITIONAL COMMENTS RAISED BY HUNGARY IN ITS RESPONSE TO THE OBSERVATIONS FILED WITH THE COMMISSION

- (194) Hungary argues in its response to the observations filed with the Commission that the Commission's own Communication on a Nuclear Illustrative Programme (PINC)<sup>(64)</sup> indicates that billions of euro (estimated between EUR 650 billion and EUR 760 billion) would need to be invested in nuclear power between 2015 and 2050 in order to secure a safe future of energy supply on a Union-wide basis.

## 5. ASSESSMENT OF THE MEASURE

### 5.1. EXISTENCE OF AID

- (195) A measure constitutes State aid within the meaning of Article 107(1) TFEU, if it fulfils four cumulative conditions. Firstly, the measure must be funded by the State or through State resources. Secondly, the measure must confer an advantage to a beneficiary. Thirdly, the measure must favour certain undertakings or economic activities (i.e. there must be a degree of selectivity). And fourthly, the measure must have the potential to affect trade between Member States and to distort competition in the internal market.
- (196) In Section 3.1 of the Opening Decision, the Commission made preliminary findings that the measure may give an economic advantage to Paks II, that it would entail State aid as it was granted from State resources imputable to the Hungarian State, that the measure would be selective and that it may have the potential to affect the trade between Member States and to distort competition in the internal market. The Commission has not encountered any reasons to change its assessment in those respects during the formal investigation.

<sup>(61)</sup> Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65).

<sup>(62)</sup> Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.3.2014, p. 243).

<sup>(63)</sup> T-289/03 BUPA, paragraph 313.

<sup>(64)</sup> <http://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-177-EN-F1-1.PDF>



## 5.1.1. ECONOMIC ADVANTAGE

- (197) The Commission assessed whether the measure would entail an economic advantage to Paks II due to the fact that it would own and operate the two new nuclear power units fully financed by the Hungarian State. The Commission further assessed whether the existence of an economic advantage to Paks II could be excluded in the event that the Hungarian State's investment would be a market-based investment driven by a profit-making rationale.
- (198) In its assessment, the Commission agrees with Hungary in what concerns the use of the MEIP test to determine whether a certain investment would be market-based. This test considers whether a market investor would have invested in the project on the same terms and conditions as the public investor at the time when the decision to make the investment was taken (see also recitals 53 and 54).
- (199) This test acknowledges the existence of an economic advantage and hence the existence of State aid, when the expected IRR of the investment is lower than a market-based benchmark WACC for the same project as a rational private investor would not invest under such conditions.
- (200) The MEIP analysis requires that the evidence used in estimating the IRR and the WACC is contemporaneous with the investment decision to reproduce the information held by investors at that time. The Commission established a timeline of the decision making process as regards the Paks II project in order to determine which information was and would be available to investors at the moment of taking the decision to proceed with the project <sup>(65)</sup>.
- (201) As of the date of this decision, Paks II has still not irrevocably commissioned the construction works of the two new reactors <sup>(66)</sup> [...]. Therefore, the Commission considers that the data available as of February 2017 (hereinafter referred to as '2017 data'), would be the most relevant for the MEIP assessment and would be taken as a base case scenario.
- (202) However, negotiations regarding Paks II started more than 2 years earlier. To provide a robustness check for the results of the MEIP test, the Commission has also made a separate assessment as of the date of the initial investment decision, i.e. the time when the EPC contract was signed on 9 December 2014 (hereinafter referred to as '2014 data'). The Commission illustrates that the outcome of the same analysis but for an earlier time, i.e. the date of the initial investment, is consistent with the outcome obtained using 2017 data.
- (203) In order to assess whether the MEIP test is fulfilled, the Commission estimated the theoretical WACC for an investment with a similar risk profile to that of Paks II. The Commission then compared this estimated market WACC with the WACC of the project, first in the base case scenario using the 2017 data and then, for a robustness check, using the 2014 data, which is relevant for the initial investment decision.

5.1.1.1. *Commission's assessment of the WACC*

- (204) The Commission follows the two methodologies used by Hungary to estimate the WACC, i.e. the standard bottom-up approach that builds up a theoretical WACC by estimating all its components and the benchmarking analysis that draws upon references that may be relevant and comparable with Paks II. Notwithstanding the fact that identical methodologies were used, the Commission's outcome diverges from Hungary's conclusions due to the fact that the Commission questioned certain parameter values and references used by Hungary and rebutted their validity. Other parameters and references are accepted and taken at face value as proposed by Hungary. In its assessment the Commission will provide supporting evidence for any value that differs from the proposal of Hungary.
- (205) Both methodologies employed in the Commission's assessment use the 2017 data as a base case and the 2014 data for a robustness check.
- (206) Given the relatively high uncertainties inherent in financial estimations the Commission provides a range for the theoretical market benchmark WACC that should be used in the MEIP test.

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<sup>(65)</sup> Hungary did not establish a timeline in its submissions and used available figures from various points in time sometimes in an inconsistent manner. While the focus of the Hungarian submissions was an investment decision of December 2014, the Second clarifying letter submitted by Hungary also used equity risk premium figures from July 2015.

<sup>(66)</sup> The EPC Contract provides that the development of the new reactors is split into two phases with the first one consisting solely of [...] and the second one of [...].



- (207) In implementing both methodologies, the Commission took at face value the target through life average gearing of between 40-50 % proposed by Hungary in the MEIP Study and the Economic Study as being in line with reliable benchmarks. For the purpose of this decision, the reference to gearing is the ratio between debt and total capital of the project. Furthermore, the Commission also accepted the Hungarian corporate tax rate of 19 %.
- (208) Before providing its own assessment, the Commission noted the following weaknesses regarding the final WACC benchmark put forward by Hungary:
- (a) The ranges stemming from the two methodologies proposed by Hungary are not totally consistent. The interval [5,9-8,4 %] obtained in the benchmarking exercise in the Economic Study is wider than the one [6,2-7,0 %] derived in the bottom-up approach in the same study, including much higher values. Hungary does not show why the most accurate subset for the WACC should be limited to [6,2-7,0 %] which overlaps just with the lower part of the benchmarking interval.
  - (b) Moreover, the values of the various variables in Hungary's benchmarking analysis included in the MEIP study and the Economic Study are not consistent with the corresponding bottom-up approach variable values included in the same studies <sup>(67)</sup>.
  - (c) Regarding the bottom-up approach, the Commission mainly rebuts three of the parameters used by Hungary, namely the equity risk premium, the risk free rate and the debt premium. Firstly, there is no justification as to why the last 10 years' historical equity market performance (used both in the MEIP Study and the Economic Study) is the appropriate benchmark for the Hungarian equity risk premium. The arguments for not using historical risk premium relate to the market behaviour after the 2008-crisis that was found to be at odds with pre-crisis periods <sup>(68)</sup>. Secondly, the risk free rate submitted by Hungary in the Second clarifying letter (prior to the Opening Decision) is benchmarked with the 15-year HUF-denominated Hungarian government bond yield of 3,8 %, which was valid in November-December 2014. However, the Commission considers that, due to the large variation in the yield of the Hungarian government bond, it is more reasonable to calculate an average yield based on the monthly yield data available during the period of a whole calendar year preceding the investment decision. Thirdly, Hungary uses the OECD EUR-based Commercial Interest Reference Rate (CIRR) for a project of 18 years maturity as proxy for the debt premium of Paks II. However, as Hungary points out in the MEIP Study the OECD CIRR rate is computed based on rules under which export credits and trade-related aid can be used to finance nuclear projects. Potential State aid aspect of export credits may distort the market benchmark debt premium.
  - (d) Finally, the robustness of estimates is not discussed by Hungary in detail. The extra risk for nuclear power plants is neither factored explicitly into the estimates nor used in its sensitivity analysis. This is important because nuclear generation may entail different types of potentially larger risks as compared to other types of power generation technologies <sup>(69)</sup> <sup>(70)</sup>.

<sup>(67)</sup> For example, the equity risk premium is estimated to be 9,0 % in the benchmarking analyses included by Hungary in the cited studies as opposed to the 4,0 % for the estimated equity risk premium in the bottom-up methodology included in the same studies.

<sup>(68)</sup> See Damodaran, A. 'Equity risk premium (ERP): Determinants, estimation and implications — The 2016 Edition' (2016), section Estimation Approaches — Historical Premiums, pp. 29-34, available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2742186](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2742186) Furthermore, the case of the Hungarian Stock Exchange's historical index, with a close value of 24 561,80 on 2 May 2006 and a close value of 26 869,01 on 2 May 2016 (data downloaded from [https://www.bet.hu/oldalak/piac\\_most](https://www.bet.hu/oldalak/piac_most)), seems to support these doubts.

<sup>(69)</sup> According to the Moody's (2009) study, to the announcement of a nuclear power plant construction project by American generation companies implies an average downgrade of 4 notches. In turn, Damodaran in his databases estimates that a credit rating difference of 4 notches, e.g. A3 and Ba1, translates into a total equity risk premium of 2,0 % (Damodaran database, July 2016 version values).

<sup>(70)</sup> The size of such risk is reduced for Paks II as it only has limited exposure to construction risk.

**First methodology — bottom-up approach**

- (209) The bottom-up methodology uses the standard formulae (also used by Hungary) of the WACC and estimates its parameters:

$$WACC = \frac{D}{D+E} (1 - t) R_d + \frac{E}{D+E} R_e$$

where  $D$  and  $E$  denote debt and equity values,  $R_d$  and  $R_e$  denote the costs of debt and equity respectively and  $t$  is the corporate tax rate, having a value of 19 % for Hungary. This formula is based on expected values of its parameters.  $R_d$  and  $R_e$  are costs of debt and equity capital at the time of the investment decisions and not historical costs.

- (210) In turn, the cost of debt will be determined by the following formula (also used by Hungary):

$$R_d = R_f + (R_d - R_f)$$

where  $R_f$  denotes the risk-free rate in the market and  $(R_d - R_f)$  denotes the bond premium in the market.

- (211) In turn, the cost of equity will be determined by the standard CAPM formula (also used by Hungary) <sup>(71)</sup>:

$$R_e = R_f + \beta \times (E(R_m) - R_f)$$

where  $R_f$  denotes the risk-free rate in the market, denotes the equity market risk premium and  $\beta$  (beta) is a measure of the idiosyncratic, non-diversifiable risk of the project.

- (212) The Commission endorses the following values for the parameters used to compute the WACC:

- To proxy the risk free rate the Commission uses the interest rate of the HUF-denominated 15-year Hungarian Government bond as this was the longest duration bond issued by the Hungarian Government. The volatility of the monthly interest rate was very high in the period when the initial investment decision of Paks II decision was taken. Therefore, choosing a value corresponding to a month only may deliver a result that is not robust. It would not reflect the reality and the complexity of a decision of such a large scale, where a holistic set of information is sought by investors. For this reason, the Commission uses an average value over the 12 calendar months preceding the focus point in time, as opposed to Hungary choosing the interest rate for the month immediately preceding the investment decision <sup>(72)</sup>.
- For the reasons explained in recital 208(c) regarding the inappropriateness of historical market (equity) risk premiums as used by Hungary, the Commission calculated equity risk premium as the arithmetical average of equity risk premia from two sources that are widely recognised in the finance and business world.
- The main data source is the global equity risk premium database developed by Professor Aswath Damodaran of New York University ('Damodaran risk premium database') <sup>(73)</sup>,

<sup>(71)</sup> CAPM stands for the Capital Asset Pricing Model, the standard Financial Model to estimate the expected return of an asset, see <http://www.investopedia.com/terms/c/capm.asp>.

<sup>(72)</sup> The Commission looked at Government bond rates denominated in EUR and USD too, however, these Government bonds had a shorter duration and the last issuance date were May 2011 for the EUR-denominated bonds and March 2014 for the USD-denominated bonds. In times with so much variation in the rate of Government bonds the Commission decided not to include these bonds in the analysis. Furthermore, their inclusion would have increased the estimated value of the WACC, making their exclusion from the analysis a conservative choice.

<sup>(73)</sup> For figures relevant for December 2014, see labels Risk Premiums for Other Markets > 1/14 on webpage [http://people.stern.nyu.edu/adamodar/New\\_Home\\_Page/dataarchived.html](http://people.stern.nyu.edu/adamodar/New_Home_Page/dataarchived.html). For figures relevant for February 2017, see labels Risk Premiums for Other Markets > Download on webpage [http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datacurrent.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html). The databases by Damodaran are widely used and cited in the finance practice.

- A second database is a market risk premium database by Professor Fernandez of the IESE Business School of the University of Navarra <sup>(74)</sup>.

The findings are summarised in Table 6 below.

Table 6

**Equity risk premium — Hungary**

|                               | December 2014 | February 2017 |
|-------------------------------|---------------|---------------|
| Equity risk premium Damodaran | 8,84          | 8,05          |
| Equity risk premium Fernandez | 8,30          | 8,10          |
| Average equity risk premium   | 8,57          | 8,08          |

- For the estimate of beta, the Commission took at face value the proposal of Hungary in the MEIP submission, namely 0,92 <sup>(75)</sup>.
- The pre-tax cost of debt would be the Hungarian risk free rate (the average value over the 12 calendar months preceding the focus point in time) plus a commercial debt risk premium on top of government bonds of 2,26 %, which is a measure for the country's debt risk premium <sup>(76)</sup>.
- The gearing of the project was assumed to take on two values, 50 % and 40 %, as proposed by Hungary, both in the MEIP Study and the Economic Study.
- (213) The WACC-input figures identified in recital 212 and the derived WACC-ranges are collected in Table 7. A separate column is used for each time period relevant for the assessment.

Table 7

**Bottom-up WACC computation**

| INPUTS                      | December 2014 | February 2017 |
|-----------------------------|---------------|---------------|
| Risk free rate Hungary      | 5,30 %        | 3,45 %        |
| Equity risk premium Hungary | 8,57 %        | 8,08 %        |

<sup>(74)</sup> For 2014, see Fernandez, P., Linares P. and Acin, I. F., 'Market Risk Premium used in 88 countries in 2014: a survey with 8,228 answers, June 20, 2014, available at <http://www.valuewalk.com/wp-content/uploads/2015/07/SSRN-id2450452.pdf>. For 2016, see Fernandez, P., Ortiz, A. and Acin, I. F. 'Market Risk Premium used in 71 countries in 2016: a survey with 6,932 answers', May 9, 2016, available at [https://papers.ssrn.com/sol3/papers2.cfm?abstract\\_id=2776636&download=yes](https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2776636&download=yes).

<sup>(75)</sup> The other beta values put forward by Hungary in the MEIP study and the subsequent Second clarifying letter and the beta values corresponding to Utilities, Renewables and Power sectors respectively in the Damodaran database, are all higher than 1. Therefore, using a beta value of 0,92 is a conservative choice as it leads to a lower WACC-value than the other, higher values of beta.

<sup>(76)</sup> See <http://www.mnb.hu/statisztika/statistikai-adatok-informaciok/adatok-idosorok>, sequence 'XI. Deviza, penz es tokepiac' > 'Allampapir piaci referenciahozamok' for the former and [https://www.quandl.com/data/WORLDBANK/HUN\\_FR\\_INR\\_RISK-Hungary-Risk-premium-on-lending-lending-rate-minus-treasury-bill-rate](https://www.quandl.com/data/WORLDBANK/HUN_FR_INR_RISK-Hungary-Risk-premium-on-lending-lending-rate-minus-treasury-bill-rate) for the latter. In relation to the latter value, some caution is recommended due to the small size of the Hungarian corporate bond market. The data refers to 31 December 2014. There is no data available for more recent periods.

| INPUTS   | December 2014 | February 2017 |
|--|---------------|---------------|
| Beta   | 0,92          | 0,92          |
| Return on equity   | 13,19 %       | 10,88 %       |
| Commercial debt risk premium on top of Hungarian Govt bond returns | 2,26 %        | 2,26 %        |
| Before tax return on debt  | 7,56 %        | 5,71 %        |
| Corporate tax rate   | 19 %          | 19 %          |
| After tax return on debt   | 6,12 %        | 4,63 %        |
| Gearing (D/(D + E)) — Scenario I                                   | 50 %          | 50 %          |
| Gearing (D/(D + E)) — Scenario II                                  | 40 %          | 40 %          |
| WACC with gearing I  | 9,66 %        | 7,75 %        |
| WACC with gearing II   | 10,36 %       | 8,38 %        |
| WACC range   | 9,66-10,36 %  | 7,75-8,38 %   |

- (214) The WACC-elements presented in Table 7 imply a WACC range of [9,66-10,36 %] for December 2014 and [7,75-8,38 %] for February 2017 <sup>(77)</sup>. It must be noted, however, that the only sector specific input in those calculations is the industry beta (0,92). As a result, it is unlikely to include the full premium associated to the larger risk involved in nuclear projects (see footnote 68) and should therefore be viewed as a lower bound for the actual risk.

## Second methodology — benchmarking

- (215) The Commission agrees with Hungary that an alternative approach to find a relevant range for the market WACC would be to benchmark it against references that are comparable to Paks II project. However, for the reasons stated in recital (a) the Commission did not find the references and the ranges presented by the Hungarian authorities sufficiently robust. Therefore, the Commission has developed its own benchmarking analysis, which derives a sector and country specific benchmark WACC based on the Damodaran database <sup>(78)</sup> <sup>(79)</sup>, using both the 2017 and the 2014 data.

<sup>(77)</sup> These figures are higher than the ones derived by Hungary mostly because of the higher risk free rate and the higher equity risk premium used by the Commission (Hungary's choices are criticised in recital 208).

<sup>(78)</sup> For country specific WACC figures relevant for December 2014 see 'Data' > 'Archived data' > 'Cost of capital by industry' > 'Europe' > '1/14' on <http://pages.stern.nyu.edu/~adamodar/>. For country-specific WACC figures relevant for February 2017, see labels 'Data' > 'Current data' > 'Cost of capital by industry' > 'Europe' on <http://pages.stern.nyu.edu/~adamodar/>. For risk premium figures, see footnote 72. It must be also noted that this database is part of a global database and it includes European countries (labelled as Western Europe). However, countries are further grouped and Hungary is part of a subgroup called 'Developed Europe' — see worksheet 'Europe' or 'Industries sorted global' in Excel file <http://www.stern.nyu.edu/~adamodar/pc/datasets/indname.xls>

<sup>(79)</sup> Hungary also developed a brief benchmarking analysis based on the Damodaran data in the Second clarifying letter (in its Appendix 2). However, that piece of analysis is not relevant as it is based on posterior information to substantiate an investment decision taken in 2014.

(216) In particular, this approach follows the following three steps (figures for all three steps are computed separately both for December 2014 and February 2017):

- (a) The first step uses Damodaran's industry-level WACC database for Western Europe to identify the costs of debt and equity for industries that could be argued to be good proxies for the nuclear power generation industry <sup>(80)</sup>.

The proxies used for the nuclear power generation industry include the sectors 'Green and Renewables', 'Power' and 'Utilities (General)' for the 2017 database and the sectors 'Power' and 'Utilities (General)' for the 2014 database <sup>(81)</sup>. Any cost of debt and equity figures calculated based on those sectors can be considered as a conservative estimates for the nuclear power plant Paks for two reasons. Firstly, there is no distinction in the Damodaran database between regulated and non-regulated segments in those sectors. Paks II is in the non-regulated segment which implies higher risk, and therefore, higher costs of debt and equity values than regulated firms within the same sector. Secondly, due to their large size and scale, nuclear power plants are riskier than the average power generation or utility company <sup>(82)</sup>.

Table 8 sets out the pre-tax debt and equity costs taken directly from the Damodaran WACC database for Western Europe, as well as the sector level beta-values <sup>(83)</sup>. The table also includes the cross-industry average figure for these industries <sup>(84)</sup>.

Table 8

**Industry level costs of debt (pre-tax) and equity for western Europe**

| Year | Cost    | Green & Renewables | Power  | Utilities (General) | Generation and utilities (average) |
|------|---------|--------------------|--------|---------------------|------------------------------------|
| 2014 | Debt    | —                  | 5,90 % | 5,40 %              | 5,65 %                             |
|      | Equity  | —                  | 9,92 % | 9,84 %              | 9,88 %                             |
|      | $\beta$ | —                  | 1,09   | 1,08                |                                    |
| 2017 | Debt    | 4,41 %             | 3,96 % | 3,96 %              | 4,11 %                             |
|      | Equity  | 9,31 %             | 9,82 % | 9,82 %              | 9,65 %                             |
|      | $\beta$ | 1,01               | 1,08   | 1,08                |                                    |

<sup>(80)</sup> The figures in these tables are adjusted by applying the Hungarian corporate tax rate of 19 % to debt.

<sup>(81)</sup> Data on the sector 'Green and Renewables' was not available for the 2014 database. In 2016 this sector had a higher WACC than the average of the other two sectors included, indicating that its inclusion would have increased the value of the 2014 WACC estimate if it was available.

<sup>(82)</sup> See footnote 68.

<sup>(83)</sup> The figures in this table use beta values taken from the Damodaran industry level WACC database.

<sup>(84)</sup> A simple average, rather than a weighted average using the number of firms included in each segment, is taken in this case as the focus is on proxy segments rather than proxy firms. Taking a weighted average would not make a difference for 2016 whereas it would lead to slightly higher values for 2014, implying in turn higher WACC values. Therefore, the choice of simple rather than weighted average is a conservative one in the present context.

- (b) The second step uses Damodaran's risk premium database to calculate the average debt and equity risk premia that Hungary requires over the other western European countries belonging to the subgroup 'Developed Europe' (see footnote 77) as set out in Table 9 which has companies operating in sectors considered in Table 8 and that are included in the industry-level WACC database<sup>(85)</sup>. This will be added to the debt and equity cost figures presented in the first step (a).

Table 9

**Risk premia for Hungary**

(%)

| Year | Risk premium                  | Developed Europe | Hungary | Difference |
|------|-------------------------------|------------------|---------|------------|
| 2014 | Country risk premium (bonds)  | 0,99             | 2,56    | 1,57       |
|      | Country risk premium (equity) | 1,48             | 3,84    | 2,36       |
| 2017 | Country risk premium (bonds)  | 1,06             | 1,92    | 0,86       |
|      | Country risk premium (equity) | 1,30             | 2,36    | 1,06       |

- (c) In the third step, the respective difference in country risk premia for Hungary identified in the second step (b) are added to the cost of debt and equity obtained in the first step (a), resulting in cost of debt and equity figures for Hungary<sup>(86)</sup>. Subsequently the WACC is derived for the two levels of gearing proposed by the Hungarian authorities. Table 10 summarises the results.

Table 10

**Cost of debt, equity and WACC (\*) for Hungary**

(%)

| Year | Cost          | D/<br>(D + E) | Green &<br>Renewables | Power | Utilities (General) | Generation and<br>utilities (average) |
|------|---------------|---------------|-----------------------|-------|---------------------|---------------------------------------|
| 2014 | Debt pre-tax  |               |                       | 7,47  | 6,97                | 7,22                                  |
|      | Debt post-tax |               |                       | 6,05  | 5,65                | 5,85                                  |
|      | Equity        |               |                       | 12,50 | 12,40               | 12,45                                 |
|      | WACC          | 50            |                       | 9,28  | 9,02                | 9,15                                  |
|      | WACC          | 40            |                       | 9,92  | 9,70                | 9,81                                  |

<sup>(85)</sup> A key element of the estimation is that Damodaran defines the equity risk premium for a country as the sum of a mature market premium and an additional country risk premium, based upon the country's default spread and scaled up (by 1,5 in 2014 and 1,39 in 2016) to reflect the higher risk of the equity in the market. For more details, see the 'Explanation and FAQ' worksheet of Damodaran's country-specific equity risk premia database, available at <http://www.stern.nyu.edu/~adamodar/pc/datasets/ctryprem.xls>

<sup>(86)</sup> Note that the Hungary-specific extra equity risk premium calculated in point (ii), will need to be multiplied by the beta values presented in Table 8: in order to be incorporated in the cost of equity derived in point (iii).



(%)

| Year | Cost          | D/<br>(D + E) | Green &<br>Renewables | Power | Utilities (General) | Generation and<br>utilities (average) |
|------|---------------|---------------|-----------------------|-------|---------------------|---------------------------------------|
| 2017 | Debt pre-tax  |               | 5,27                  | 4,82  | 4,82                | 4,97                                  |
|      | Debt post-tax |               | 4,27                  | 3,91  | 3,91                | 4,03                                  |
|      | Equity        |               | 10,38                 | 10,97 | 10,97               | 10,77                                 |
|      | WACC          | 50            | 7,32                  | 7,44  | 7,44                | 7,40                                  |
|      | WACC          | 40            | 7,93                  | 8,15  | 8,14                | 8,07                                  |

(\*) The WACC formula uses post-tax cost of debt.

- (217) This methodology suggests a project WACC for Paks II in the range of between 9,15-9,81 % for the initial investment decision date in December 2014 and a range of between 7,40-8,07 % for February 2017. This range is based on the gearing values of between 40-50 % as set out in the MEIP Study. It also must be noted that the lower boundary of 9,15 % for the WACC for 2014 would probably need to be adjusted upward where data on 'Green and renewables' was available for 2014. Also, the explicit incorporation of an extra risk premium for nuclear power plants (see footnote 68) would increase both ranges.

### Conclusion on the WACC

- (218) The two methodologies used to estimate a market level benchmark for the WACC lead to overlapping intervals. The overall values for 2017 are on average lower than those for 2014, reflecting mainly the markets' evaluation of the Hungarian risk free rate. The relevant intervals are summarised in Table 11.

Table 11  
Summary on WACC

(%)

|                       | December 2014 | February 2017 |
|-----------------------|---------------|---------------|
| Bottom-up approach    | 9,66-10,36    | 7,75-8,38     |
| Benchmarking approach | 9,15-9,81     | 7,40-8,07     |
| Overall range         | 9,15-10,36    | 7,40-8,38     |
| Midpoint              | 9,76          | 7,89          |

- (219) Table 11 indicates WACC figures in the range of between 9,15-10,36 % for the initial investment decision of December 2014 and a figure in the range of between 7,40-8,38 % for February 2017. All those WACC-values should be viewed as conservative because they do not include the potential risk premium that nuclear power plant projects require <sup>(87)</sup>.

<sup>(87)</sup> Furthermore, the lower boundary of 9,15 % for 2014 would probably need to be adjusted upward if data on 'Green and renewables' was available for 2014.

#### 5.1.1.2. *The Commission's assessment on the IRR of the project*

- (220) In its assessment of the IRR, the Commission used the Financial Model submitted by Hungary. In particular, the Commission accepted the methodology used in the Financial Model as well as the inputs of the Model, except for the electricity price forecast, for the considered central scenario. However, the Commission notes:
- (a) The value of the IRR is very sensitive to the chosen price forecast for the computation. For example, applying the November 2014 EUR/USD exchange rate<sup>(88)</sup> rather than the October 2015 exchange rate (the choice of the Hungarian Government) to derive the EUR-based IEA price forecast of 2014 (that was based on forecast data in the IEA WEO 2014) decreases the project IRR by more than 0,8 %. This requires a re-assessment of the price forecast underlying the computation of the IRR of the project.
- (b) The value of the IRR is also sensitive to (i) the load factor (or utilisation rate) of the nuclear power plant's units, (ii) the various cost items related to the project, including both owner costs during the construction period as well as subsequent O&M cost during the operation period and to (iii) potential delays in construction. The impact of changes in these factors need to be carefully assessed, i.e. beyond some small deviations examined by Hungary in the Financial Model, in a sensitivity analysis providing robustness check for the main results.
- (221) Therefore, in order to ensure more accurate estimation results for the IRR of the project as well as for the accompanying sensitivity analysis and robustness checks, the Commission performed certain refinements in the components used for the IRR estimation. In particular, the Commission revised and completed the price forecasts submitted by Hungary. In addition, besides using the values of costs and load factor proposed by Hungary for the central scenario of the Financial Model, the Commission also incorporated information submitted by interested parties to improve the accuracy of the results. Finally, the Commission performed a thorough sensitivity check of the results, by simulating changes in all the relevant parameters of the model.
- (222) Similarly to the WACC, the relevant IRR ranges were computed both based on information available in February 2017 (the 2017 data) and at the time of the initial investment decision on the 9 December 2014 (the 2014 data).

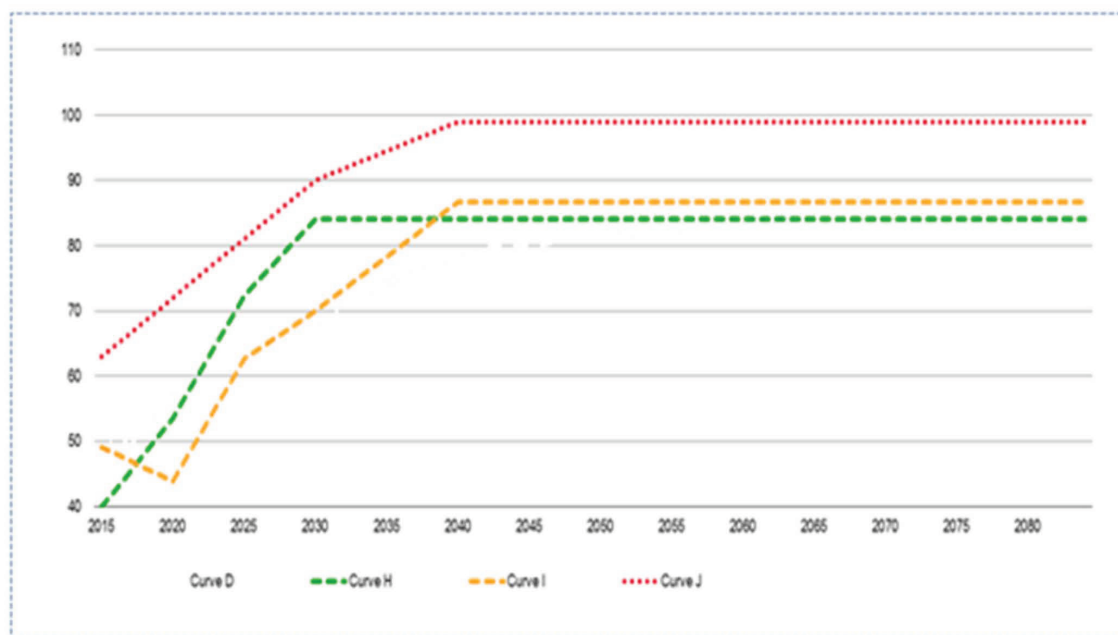
#### **Price forecasts**

- (223) The starting points of the Commission's assessment of price forecasts are the price forecast curves presented in Figure 16 of the Economic Study submitted by Hungary, together with the IEA WEO (2014) based price forecast used by the Commission in the Opening Decision. In order to cover the entire expected operating period of the units of Paks II, the Commission extended those graphs to include only those that only covered the periods up to 2030 and 2040 respectively by keeping the forecasted price levels constant as at their termination (i.e. 2030 and 2040) values. Those price forecasts are illustrated in Figure 14.

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<sup>(88)</sup> The date when the IEA price forecast of 2014 was issued.

Figure 14

Long-run electricity price forecast curves (EUR/MWh) <sup>(1)</sup>

<sup>(1)</sup> Curve D is considered as confidential information/business secret.  
Source: Economic Study and the Financial Model (see recital 69).

- (224) Curve D in Figure 14 was used in the Opening Decision by the Commission to compute the project IRR. Furthermore, Curve H represents a 2014 BMWi (German Economic Ministry) Market Study forecast, Curve I represents a 2014 BMWi Reference scenario forecast, Curve J represents the IEA WEO (2014) electricity price forecast with the conversion from USD figures to EUR figures having been made with the approximate average EUR/USD exchange rate for September 2015 of 0,9 <sup>(89)</sup>. The IRR-computations submitted by Hungary were principally based on those curves, H, I and J.
- (225) The Commission performed the following adjustments to the curves presented in Figure 14. Curve J was corrected on the basis of on the average EUR/USD exchange rate available at the time of the IEA WEO (2014) USD-based forecasts published in November 2014. At the time, the average EUR/USD exchange rate over the preceding 3 months was 0,79. Curve L in Figure 15 also makes that adjustment <sup>(90)</sup>.

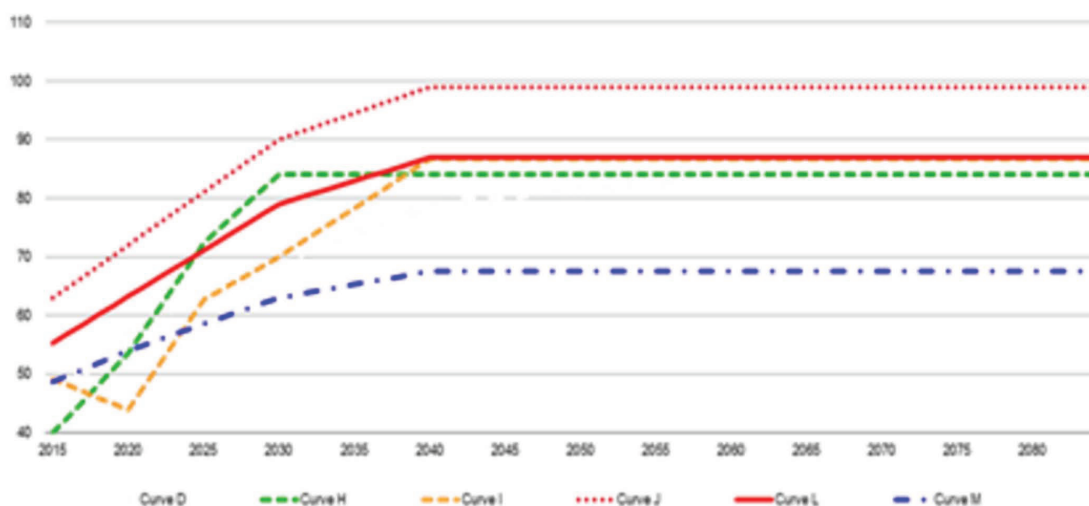
<sup>(89)</sup> No details of the used exchange rates were provided by the Hungarian Government. The applied value of 0,9 can be deducted from the Financial Model. The average monthly exchange rate was 0,89 for September 2015. This EUR/USD exchange rate value (together with the other values used in this document) were taken from the website of the ECB at [http://sdw.ecb.europa.eu/quickview.do;jsessionid=B13D3D3075AF28A4265A4DF53BE1ABC0?SERIES\\_KEY=120.EXR.D.USD.EUR.SP00.A&start=01-07-2014&end=15-11-2016&trans=MF&submitOptions.x=46&submitOptions.y=5](http://sdw.ecb.europa.eu/quickview.do;jsessionid=B13D3D3075AF28A4265A4DF53BE1ABC0?SERIES_KEY=120.EXR.D.USD.EUR.SP00.A&start=01-07-2014&end=15-11-2016&trans=MF&submitOptions.x=46&submitOptions.y=5).

<sup>(90)</sup> Due to the large variation in the EUR/USD exchange rate, the Commission chose an average exchange rate through the 3 months preceding the initial investment decision date of 9 December 2014, which also includes the publication of the IEA WEO (2014). Alternatively, one could use annual average exchange rates. The annual average exchange rate preceding December 2014 is 0,75, which would lead to a slightly lower IRR value, making the choice of 3-month average exchange rate instead a conservative choice for the current analysis.

- (226) Furthermore, in order to estimate an accurate IRR for February 2017, the Commission plots the price forecasts included in the International Energy Agency's World Energy Outlook 2016 (IEA WEO 2016) publication released on 16 November 2016 <sup>(91)</sup>. As the original figures were provided in USD, the Commission used the 3-month (mid-August 2016 to mid-November 2016) average EUR/USD exchange rate of 0,9 relevant for that publication date to construct the EUR-based figures <sup>(92)</sup> <sup>(93)</sup>. Curve M in Figure 15 below shows this price forecast.

Figure 15

### Long-run electricity price forecast curves (EUR/MWh) <sup>(1)</sup>



<sup>(1)</sup> Curve D is considered as confidential information/business secret.

Source: Economic Study and the Financial Model (see recital 69) and computations by the Commission.

- (227) This figure provides two main insights. Firstly, in applying the correct exchange rate for the conversion of USD values into EUR values, the price forecast for Europe of the IEA WEO 2014 becomes approximately 12 % lower (Curve L lies below Curve J). Secondly, the IEA WEO price forecast published in November 2016 is on average slightly more than 20 % lower than the price forecast published in the same publication 2 years earlier (Curve L and Curve M). This can be attributed to the falling electricity prices in 2014 and 2016 and the required forecast adjustments <sup>(94)</sup>. Accordingly, any assessment made as regards the 2016 forecast and any related IRR calculation should take into account this drop in price forecasts and should focus on Curve M in Figure 15 <sup>(95)</sup>.

<sup>(91)</sup> See <http://www.worldenergyoutlook.org/publications/weo-2016/>.

<sup>(92)</sup> See the wholesale electricity price figures in Table 6.13 on page 267 of the IEA WEO 2016.

<sup>(93)</sup> Again, the relevant annual average exchange rate is 0,89 for this case, making the choice of a 3-month average exchange rate a more conservative one for the current analysis.

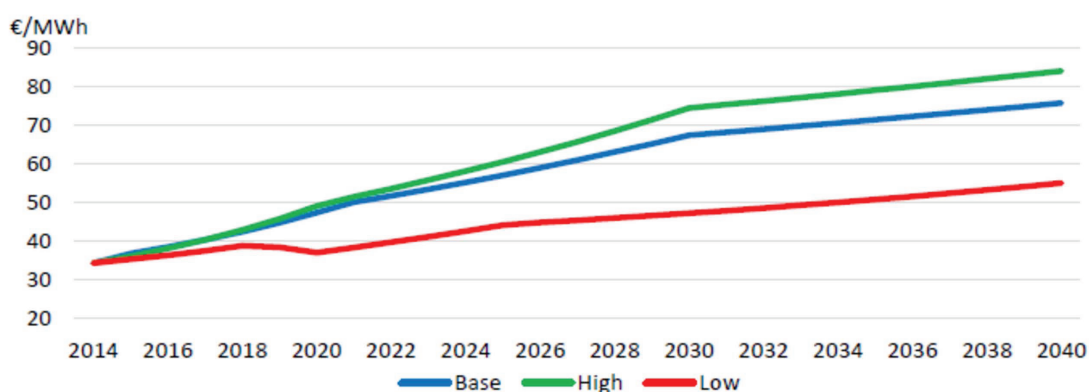
<sup>(94)</sup> A similar downward adjustments to electricity price forecasts between 2014 and 2015 was also undertaken by the UK National Grid — See, for example, page 46 of the 2014 UK Future Energy Scenarios by the UK National Grid, available at <http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/FES/Documents-archive/> and page 36 of the 2015 UK Future Energy Scenarios by the UK National Grid, available at <http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/FES/Documents-archive/>, denoting an average decrease of 12 % for the electricity price forecasts over the 2016-2035 forecast period. No such comparison was found for the BMWi data.

<sup>(95)</sup> In its quantitative analysis, the Commission accepts the assumptions made by Hungary about electricity prices increasing until 2040 and staying constant afterwards. This is a conservative choice. Alternatively, one could build price forecast scenarios taking into account more explicitly the large scale deployment of renewables on wholesale electricity prices, when low prices as currently experiences would be the norm with high but weather-dependent scarcity prices. Such a scenario would result in future prices that are close to present prices, implying lower return on the investment than the ones explicitly considered in the subsequent sections.

- (228) In relation to the IEA WEO-based price forecasts it must be noted that they were based on the evaluation of the 'New Policies Scenario' <sup>(96)</sup>. A comprehensive assessment should also include the other scenarios considered by the IEA WEO, such as the 'Current Policies Scenario' and the 'Low Oil Price Scenario' as was carried out by the Candole study in relation to the IEA WEO 2015 price forecasts <sup>(97)</sup>. This is important because choosing a different policy option leads to different price forecast paths as shown in Figure 12 and reproduced in Figure 16 below.

Figure 16

### Long-run electricity price forecast curves (EUR/MWh)



Source: Candole Partners.

- (229) The Base, High and Low cases in Figure 16 correspond to the New Policy Scenario, the Current Policies Scenario and the Low Oil Policies Scenario in the IEA WEO 2015 (also see recital 128). It can be seen from Figure 16 that the Current Policies Scenario predicts slightly higher prices for electricity in the future than the New Policies Scenario, whereas the Low Oil Price scenario predicts substantially lower electricity prices in the future than the central New Policies Scenario (forecasts made in 2015). A comprehensive sensitivity analysis for the computation of the project IRR for Paks II must take this into account <sup>(98)</sup>.
- (230) Furthermore, for an accurate interpretation and assessment of the long-term price forecast figures prepared by different institutions, those figures should be linked to the future electricity contract prices signed in power exchanges, even if the latter refers to much shorter time horizons as illustrated in Figure 12. The price curves in Figure 13, comparing German and Hungarian futures price contracts with the lowest IEA WEO price forecasts (the one corresponding to the Low Oil Price scenario), suggest that even the most recent IEA WEO 2015 price forecasts may be too optimistic as they may overestimate future electricity prices. This fact also needs to be taken into account in determining the IRR of the Paks II project as well as any supporting sensitivity analysis.

### Load factor, various cost items and delays

- (231) Due to its large size, the complexity of the construction works and its long-life operation time, nuclear power plants are exposed to uncertainties regarding the load factor, the construction time and various cost items, amongst others. This, in turn has a substantial impact on the IRR of the project.

<sup>(96)</sup> See recital 128 for a definition of the 'New Policy Scenario'.

<sup>(97)</sup> See recital 128 and footnote 53: The Current Policies Scenario takes into account only policies enacted by a few months before the publication went to press. The 450 Scenario depicts a pathway to the 2 °C climate goal that can be achieved through the technologies that are close to becoming available at a commercial scale. Finally, the Low Oil Price Scenario explores the implications of sustained lower prices (coming from lower oil prices) on the energy system.

<sup>(98)</sup> The Commission did not undertake such comprehensive quantitative analysis due to lack of high quality relevant data. Nonetheless, it can be seen that the price curve corresponding to the Low Oil Price Scenario would lead to a substantially lower IRR value than the price curve corresponding to the New Policies Scenario.

- (232) The difficulty in assessing such uncertainties lies in the fact that Paks II is a Generation III+ nuclear power plant design and there are currently none in operation<sup>(99)</sup>. Therefore, any benchmarking is hypothetical. The technological difference between Generation III and Generation III+ nuclear power plants are sufficiently large to contend that the uncertainties mentioned in recital 231 do not concern Paks II.

#### *Load factor*

- (233) The IRR estimates of the Hungarian Government are based on the assumption of an average load factor of [90-95]% (\*) for Paks II. This is a much higher figure than the 72 % average annual load factor for all nuclear power plants in the world as highlighted in 'The World Nuclear Industry — Status Report 2015' (WNISR2015)<sup>(100)</sup>. In turn, the IEA WEO 2014, in its Outlook for Nuclear Power, notes that '[b]etween 1980 and 2010, the average global capacity factor for reactors increased from 56 % to 79 %. This has been a result of better management, which has significantly shortened outage periods for planned maintenance and refuelling. The best-performing reactors achieve capacity factors of around 95 %. As plants age, however, such high levels may be difficult to reach as more frequent inspections and testing of components is required.'<sup>(101)</sup>
- (234) It should be noted that such high load level figures can be easily jeopardised by incidents during the lifetime of the plant. For example, the incident in 2003 in Unit 2 of Paks NPP decreased the average load factor for the 1990-2015 period by almost five percentage points, from 85,3 % to 80,7 %.
- (235) A further challenge for the two new reactors of Paks II in maintaining a load factor in excess of 90 % is that it is envisaged to operate at the same time as some of the Paks NPP units. The environmental impact of the close proximity of the two nuclear power plants on the Danube river during hot summer days may require a decrease of production for one of the plants. As it is assumed that the two new reactors of Paks II will constantly operate with a high load factor, this would result in decreased production and decreased revenues for Paks NPP, an economic cost that needs to be taken into account when evaluating the economic viability of the Paks II project.

#### *Costs*

- (236) Costs over the lifetime of a long-term project can substantially deviate from the forecasted long run values presented during a project's initial business plan. The typical reasons for this are the failure to incorporate all the relevant cost items in the business plan or using overly optimistic assumptions and cost estimates.
- (237) Due to the complexity of those projects, the actual cost of constructing nuclear power plants is often much higher than forecasted. For example, the construction costs of the AREVA EPR Generation III+ power plants in France and Finland were almost triple the initial costs included in the construction contract<sup>(102)</sup>. The Westinghouse AP1000 reactors being built in China and the US also experience considerable cost overruns of around 20 % or more and the costs of the Rosatom AES-2006 nuclear power plant in Belarus experiences an almost doubling of the initial construction costs<sup>(103)</sup>.
- (238) While in principle fixed price turnkey contracts may provide protection for the owner for increased construction costs, they often do not cover the entire costs of the new reactors. Accordingly, owner costs, including cost of obtaining the required permits, cost of connection to the grid, cost of waste management and decommissioning and

<sup>(99)</sup> See Section 2.3.

(\*) *The load factor is considered as business secret and replaced by a wider load factor range.*

<sup>(100)</sup> See p. 25 of the WNISR2015.

<sup>(101)</sup> See p. 350 of the IEA WEO 2014.

<sup>(102)</sup> See <http://www.world-nuclear-news.org/NN-Flamanville-EPR-timetable-and-costs-revised-0309154.html> and [http://www.theecologist.org/News/news\\_analysis/2859924/finland\\_cancels\\_olkiluoto\\_4\\_nuclear\\_reactor\\_is\\_the\\_epr\\_finished.html](http://www.theecologist.org/News/news_analysis/2859924/finland_cancels_olkiluoto_4_nuclear_reactor_is_the_epr_finished.html).

<sup>(103)</sup> See p. 66 of the WNISR2015.



environmental costs are not fixed and may increase. In turn, the supplier may decide not to absorb extra costs beyond certain limits and may suggest that the increase in costs is due to changes requested by the owner. Such a dispute may end up in arbitration and in the court, thus further increasing the costs related to the investment.

- (239) The business plan for the Paks II nuclear power plant seems to also contain some cost assumptions that could be considered optimistic. Submissions by interested parties suggest that the provisional figures may be too optimistic for the following items:

- Cooling of the nuclear power plant: the Financial Model assumes a fresh water cooling system as supported by the Hungary, rather than a more expensive cooling tower based cooling system that MEP Jávör argues is needed; the Environmental Impact Assessment Study (EIAS) of the project does not present a detailed quantitative cost-benefit analysis of the two systems. There may also be a need to install a more expensive cooling tower during the parallel operation of the two plants<sup>(104)</sup>.
- Connection to the grid: the Financial Model includes a total figure of HUF [43 000-51 000] (\*) million or EUR [124-155] million (\*), which falls short of the figure of EUR 1,6 billion submitted by MEP Jávör; neither party submitted detailed information about how those figures were computed.
- Cost of reserve: the Financial Model does not include an item that could be assigned to the costs of the impact of the Paks II nuclear power plant on the Hungarian electricity system, for example additional reserve requirements; additional reserves will be required by law due to the large size of the individual units of Paks II, according to MEP Jávör.
- Costs of insurance: insurance that covers large-scale accidents that nuclear power plants can cause, beyond design basis accidents (BDBAs), could cost more than HUF [15 000-20 000] (\*) million or EUR [45-60] (\*) million shown in the Financial Model<sup>(105)</sup>.
- Cost of maintenance: no major refurbishment costs during the lifetime of the nuclear power plant are anticipated; refurbishment costs may be needed because of premature ageing of some of the nuclear power plant's elements or because of incidents or accidents occurring during the lifetime of the plant<sup>(106)</sup>.

- (240) The Commission notes that any deviation motivated by the concerns listed in recital 239 from the figures provided by Hungary as presented in Paks II's business plan (and the Financial Model) would lead to a decrease in the value of the IRR of the project<sup>(107)</sup>.

#### *Potential delays*

- (241) The construction of nuclear power plants is prone to delays and this increases construction times<sup>(108)</sup>. The primary reasons for delays in construction include design issues, a shortage of skilled labour, the loss of expertise, supply chain issues, poor planning and first-of-a-kind (FOAK) problems<sup>(109)</sup> <sup>(110)</sup>.

<sup>(104)</sup> See Section 6.3 of the EIAS, available at <http://www.mvmpaks2.hu/hu/Dokumentumtarolo/Simplified%20public%20summary.pdf>.  
(\*) The figures in the Financial Model are considered as business secret and replaced by wider ranges.

<sup>(105)</sup> The costs of such BDBAs can easily exceed EUR 100 billion and potentially reaching values at the magnitude of many hundreds or even thousands of bn Euros (see pp. 20-24 of 'The true costs of nuclear power' by Wiener Umwelthanwaltschaft and Österreichische Ökologie-Institut, available at <http://wua-wien.at/images/stories/publikationen/true-costs-nuclear-power.pdf>). With a BDBA happening once every 25 years (1986 (Chernobyl) and 2011 (Fukushima)) and almost 400 nuclear reactors operating across the globe, there is a probability of  $2 \times (1/400) = 0,5\%$  that of a BDBA happening to one of the two reactors Paks II in the first 25 years of its operation. The cost of an insurance covering for such a damage is typically much higher than the expected value of the damage associated to such an accident, i.e. than  $0,5\% \times \text{EUR } 100 \text{ bn} = \text{EUR } 500 \text{ m}$  (taking the more conservative estimate for the value of the damage caused by a BDBA actually happening).

<sup>(106)</sup> The Felshmann study identifies such a major refurbishment for Paks I. While the Hungarian Government excludes the need of similar refurbishments for Paks II, the grounds of such exclusion are not clear.

<sup>(107)</sup> The Commission did not undertake a detailed quantitative analysis of the impact of any such deviations because of the lack of high quality relevant data. Instead, some of the information presented in recital 239 was used to motivate the sensitivity analysis underlying the determination of the project IRR (see recitals 245 and 246 in the next section).

<sup>(108)</sup> See p. 33 of the WNISR2015.

<sup>(109)</sup> See pp. 58-60 of the WNISR2015.

<sup>(110)</sup> The IEA WEO 2014 also notes that first-of-a-kind designs can take much longer to build and involve much higher costs than more mature designs because of the lack of experience and learning — see p. 366.

- (242) Regarding delays in the construction period, the first two Generation III+ power plants that were actually commissioned and built, the Oikiluoto-3 plant in Finland (start of construction: 2005) and the Flamanville power plant in France (start of construction: 2007) both experienced delays of more than 5 years each <sup>(111)</sup>. Both power plants are Areva EPR-models.
- (243) Rosatom's four Generation III+ AES-2006 projects in Russia, for which construction started between 2008 and 2010, also experienced delays, as it is outlined in Table 3 in recital 99. For example, the construction of one of the two V-491 units (the Paks II design) in Leningrad phase II at St. Petersburg (whose commissioning was originally due in October 2013) was interrupted when a steel structure for containment collapsed on 17 July 2011 <sup>(112)</sup> thus its commissioning is now expected in mid-2017, whereas the other unit was expected to be commissioned by 2016 and is currently scheduled to be switched online in 2018 only <sup>(113)</sup>. The construction of another unit in Niemen in Kaliningrad was suspended in 2013 <sup>(114)</sup>.
- (244) As a result, the recent history of building Generation III+ power plants suggests that delays during construction are not uncommon <sup>(115)</sup>. This, in turn, has an impact on the IRR. This impact can only be mitigated to a certain extent by stipulating damages payments under certain circumstances.

### Computation of the IRR

- (245) The Commission used the Financial Model submitted by Hungary to compute ranges for the appropriate IRR values for December 2014 and February 2017. In particular, the Commission:
- relied on the cost figures included in the Financial Model by the Hungarian Government as a starting point;
  - updated the price forecast curves in the Financial Model along the lines discussed in the Price forecasts subsection (see recitals 223-230) — price forecast curves H, I and L were used to compute the IRR for December 2014 and price forecast curve M was used to compute the IRR for February 2017;
  - developed a Monte Carlo-based sensitivity analysis to obtain relevant ranges for the IRR-figures corresponding to the two points in time namely December 2014 and February 2017 <sup>(116)</sup>.
- (246) The Monte Carlo-based sensitivity analysis was used to estimate deviations of the IRR from its central value following small changes in the values of the various inputs of the model. The following deviations from the inputted values by Hungary were assumed:
- Small symmetric deviations for future inflation, foreign exchange rate, operation costs, fuel costs, maintenance capex, waste management and decommissioning costs, expected lifetime and price forecast curve used <sup>(117)</sup>;

<sup>(111)</sup> For delays for the Olkiluoto-3 plant, see <http://www.world-nuclear-news.org/C-Olkiluoto-EPR-supplier-revises-compensation-claim-1002164.html>. For delays for the Flamanville plant, see <http://www.world-nuclear-news.org/NN-Flamanville-EPR-timetable-and-costs-revised-0309154.html>

<sup>(112)</sup> See p. 64 of the WNISR2015.

<sup>(113)</sup> See <http://www.world-nuclear.org/information-library/country-profiles/countries-o-s/russia-nuclear-power.aspx>

<sup>(114)</sup> See p. 63 of the WNISR2015 as well as press articles <http://www.osw.waw.pl/en/publikacje/analyses/2013-06-12/russia-freezes-construction-nuclear-power-plant-kaliningrad> and <http://www.bsrrw.org/nuclear-plants/kaliningrad/>

<sup>(115)</sup> In fact, Hungary itself is expecting delays (see recital 99).

<sup>(116)</sup> This is a more robust sensitivity analysis than the ones included by Hungary in the Financial Model (see recital 177) as that one only looks at the impact on the WACC and IRR of changes in one underlying variable only. Instead, the Monte Carlo analysis allows the identification of the impact of changes in the value of more than just one underlying variable.

<sup>(117)</sup> These deviations were drawn from normal distributions with the mean equal to the baseline values included in the Financial Model and the standard deviation equal with the deviations included in the sensitivity analysis in Financial Model — 95 % of the values drawn from these normal distributions fall within a distance of 2 times the chosen standard deviation of the distribution. The chosen mean-standard deviation pairs were the following: (i) inflation ([0-2] %\*; 0,25 %), (ii) foreign exchange rate (HUF/EUR) [300-310]\*; 10 %), (iii) price sensitivity (each individual curve; EUR 2,5/MWh) and (iv) plant lifetime (60; 5). For the various periodic cost items, (i) operational costs, (ii) fuel costs, (iii) maintenance capex and (iv) decommissioning and waste management costs a standard deviation of 10 % from the respective periodic value was chosen.

\* In this footnote, the chosen methods in the Financial Model are considered as business secret and replaced by wider ranges.

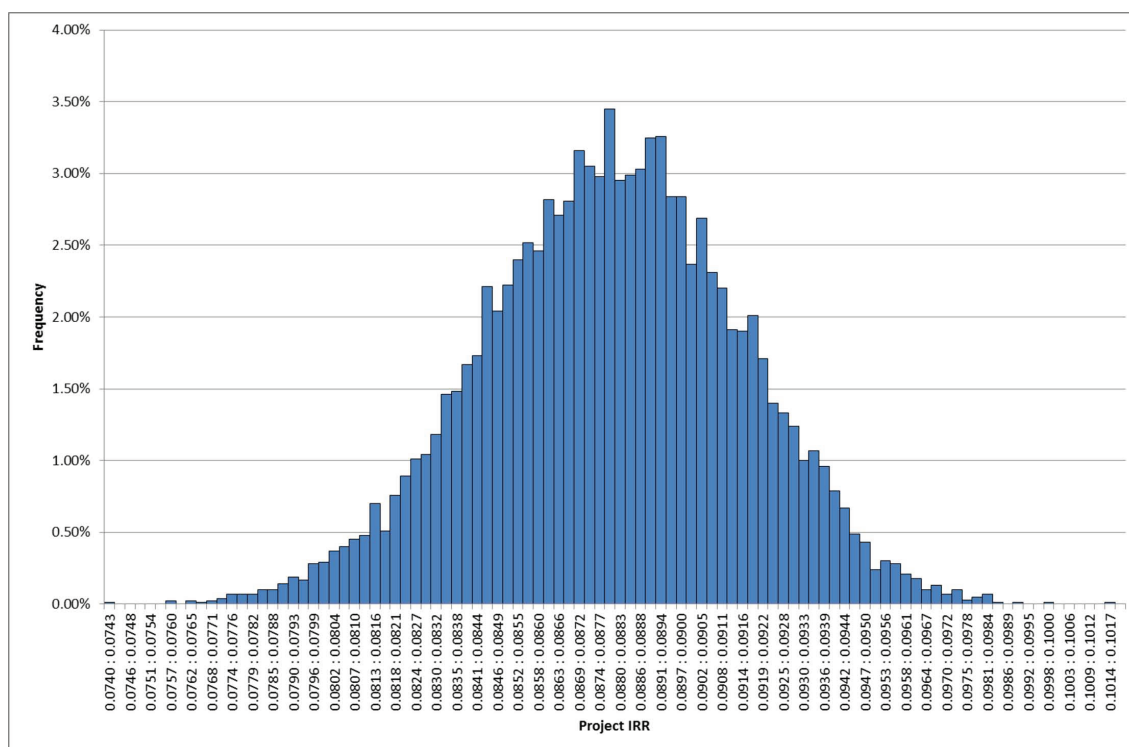
- Small asymmetric deviations for future down time rates — downward deviations are constrained by full (100 %) capacity utilisation and are taken to be smaller than upward deviations from the baseline value of [5-10] % <sup>(\*\*)</sup> (i. e. [90-95] % <sup>(\*\*)</sup> capacity utilisation) <sup>(118)</sup>;
- Project delays were not included in the Monte Carlo analysis because of the incomplete way of treatment of delays in the Financial Model (see recital 249 below).

Figure 17 and Figure 18 below show the distributions of the project's IRR values for the two periods of the assessment. In each case, the outcome is based on 10 000 simulations <sup>(119)</sup>.

- (247) For December 2014, the distribution of the estimated IRR is centred on 8,79 %, whereas 90 % of the computed IRR values fall inside the interval [8,20 %; 9,36 %].

Figure 17

#### IRR values for December 2014



Source: Computations by the Commission.

- (248) For February 2017, the distribution of the estimated IRR is centred around 7,35 % and 90 % of the computed IRR values fall inside the interval [6,79 %; 7,90 %] <sup>(120)</sup>:

<sup>(\*\*)</sup> The baseline value and the capacity utilisation are considered as business secret and are replaced by wider ranges.

<sup>(118)</sup> As the baseline down time rate is small at [5-10] <sup>(\*\*)</sup> %, upward deviations, i.e. larger down time rates, can be potentially higher than downward deviations, i.e. smaller down time rates. A triangular distribution with endpoints of 5 % and 12 % (corresponding to load factors of 88 % and 95 %) and central peak-point at [5-10] <sup>(\*\*)</sup> % (the baseline value) was chosen.

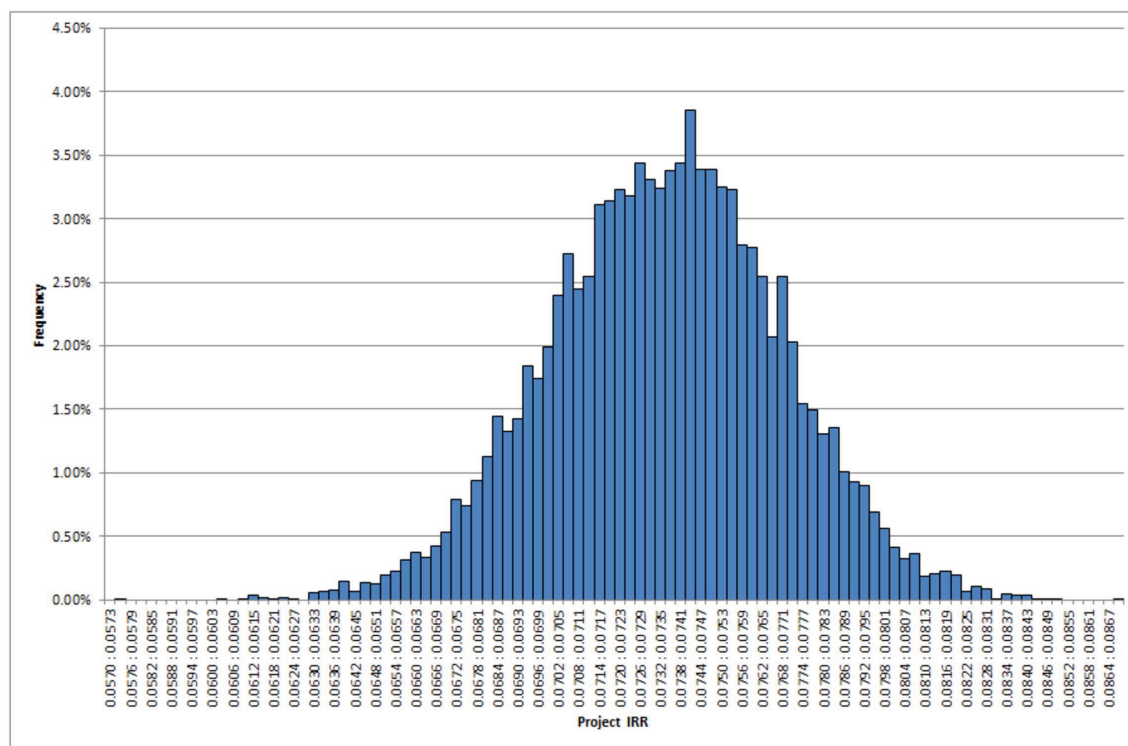
<sup>(119)</sup> In this footnote, the baseline value is considered as business secret and replaced by a wider range.

<sup>(120)</sup> It must be noted that no correlation was assumed during these runs between the various variables.

For both years, the IRR values estimated by the Commission are lower than the ones submitted by Hungary mostly because of the lower future price forecasts and also because of a more general sensitivity analysis (see recital 246).

Figure 18

## IRR values for February 2017



Source: Computations by the Commission.

- (249) It must be noted that the impact of potential delays is not included in the IRR-computations underlying Figure 17 and Figure 18. The main reason for this is the incomplete treatment of delays by the Financial Model. In particular, the Financial Model allows for the following types of delays:
- delays, which had already occurred before the start of construction work (labelled ‘during construction’ in the Financial Model);
  - delays occurred after the construction work has been finished (labelled ‘post contract price expenditure’ in the Financial Model).
- (250) The Commission notes that those two delay scenarios included in the Financial Model are basic ones and cannot be used to adequately model the true impact of most common types of delays, for example when delays of various lengths occur in different stages of the construction period <sup>(121)</sup>.
- (251) The IRR ranges for the two points in time relevant in the assessment are summarised in Table 12 below. The estimated IRR is lower for February 2017 due to a decrease in the electricity price forecast between 2014 and 2017. However, both estimates can be considered conservative given that certain qualitative elements described in recitals 238 and 239 and flaws in the estimates of the Hungarian authorities could not be quantitatively incorporated in the Financial Model.

<sup>(121)</sup> Furthermore, such delays would most likely be coupled with cost overruns. In particular, cost overruns can occur in spite of the fixed price turnkey nature of the EPC contract for two reasons: (i) the fixed price only refers to the suppliers' costs but not to the owners' costs, and (ii) if the supplies is debating some cost escalations being its own responsibility a possible legal dispute will definitely increase the project costs.

Table 12  
IRR summary

|          | December 2014 | February 2017 |
|----------|---------------|---------------|
| Range    | 8,20-9,36     | 6,79-7,90     |
| Midpoint | 8,79          | 7,35          |

(%)

#### 5.1.1.3. *The Commission's assessment of the LCOE.*

- (252) For the sake of completeness and in order to reflect all the information submitted by Hungary (see recitals 69 and 81-82), the Commission also briefly considered the economic viability of Paks II by using the LCOE measure (see Section 3.1.1.3).
- (253) In assessing the LCOE for a Hungarian nuclear power plant such as that of Paks II, the Commission used the OECD/IEA/NEA 2015 study (see recital 81) as a starting point. In that study, the LCOE for a Hungarian nuclear power plant is estimated to be EUR 80,95/MWh for an interest rate of 7 % and EUR 112,45/MWh for an interest rate of 10 %, given a load factor of 85 %<sup>(122)</sup>. As those figures were published in August 2015, they can only be used for the assessment of the LCOE in 2017 but not in 2014.
- (254) The Commission notes that increasing the load factor to [90-95] %(\*), the central load factor figure in Hungary's submissions, the LCOE figures in the previous recital change to EUR 74/MWh and EUR 103/MWh respectively<sup>(123)</sup>.
- (255) Based on the above, the Commission concludes that the LCOE of a Hungarian nuclear power plant is higher than EUR 74/MWh, which is in turn higher than the price forecast of EUR 73/MWh computed in 2015 or the EUR 68/MWh price forecast computed in 2016<sup>(124)</sup>.

#### 5.1.1.4. *Conclusions on the economic advantage*

- (256) The Commission uses the WACC and IRR estimates derived in the Sections 5.1.1.1 and 5.1.1.2 to assess whether the MEIP is fulfilled. Table 13 below summarises the relevant information for both points in time:

Table 13  
Comparison of the WACC and IRR

|            | December 2014 | February 2017 |
|------------|---------------|---------------|
| WACC range | 9,15-10,36    | 7,40-8,35     |

(%)

<sup>(122)</sup> The figures of EUR/MWh were derived by applying the average monthly EUR/USD exchange rate of 0,9 for August 2015 (the month of the OECD/IEA/NEA publication) for the USD/MWh figures in the publication.

(\*) The load factor is considered as business secret and replaced by a wider load factor range.

<sup>(123)</sup> These adjustment in the LCOE-value can be obtained by multiplying every term in the denominator of the LCOE-formula  $LCOE = \frac{\text{Sumt}(\text{Costst} \times (1 + r) - t)}{\text{Sumt}(\text{MWht} \times (1 + r) - t)}$  (see footnote 32) by 93/85.

<sup>(124)</sup> The price forecast of EUR 73/MWh is obtained by multiplying the wholesale electricity price value of EUR 81/MWh for 2040 in Figure 8.11 on p. 327 of the IEA WEO 2015 with the average monthly EUR/USD exchange rate of 0,9 for September-November 2015, the date of the IEA WEO 2015 publication. Similarly, the price forecast of EUR 68/MWh is obtained by multiplying the wholesale electricity price value of EUR 75/MWh for 2040 in Figure 6.13 on p. 267 of the IEA WEO 2016 with the average monthly EUR/USD exchange rate of 0,9 for September-November 2016, the date of the IEA WEO 2016 publication.

(%)

|   | December 2014 | February 2017 |
|---|---------------|---------------|
| IRR range   | 8,20-9,36     | 6,79-7,90     |
| WACC midpoint   | 9,76          | 7,88          |
| IRR central value                                     | 8,79          | 7,35          |
| Percentage of IRR-simulated cases when IRR<min (WACC) | 85            | 55            |

(257) Table 13 offers the following key insights:

- The IRR central value is substantially lower than the midpoint of the WACC range (8,79 % versus 9,66 % and 7,35 % versus 7,88 %), in both periods;
- The IRR central value is even lower than the lower boundary for the WACC range (8,79 % versus 9,15 % and 7,35 % versus 7,40 %) in both periods;
- The IRR falls below the relevant WACC range for a majority of cases, namely the estimated IRR values from the Monte Carlo simulation are lower than the lower boundary of the WACC range for a majority of cases (85 % for December 2014 and 55 % for February 2017) <sup>(125)</sup> <sup>(126)</sup>.

(258) The Commission emphasises that those results are conservative given that:

- The Commission does not have the means to accurately assess the possibility of additional costs, in particular of the magnitude suggested by the comments it received from Interested Parties following the publication of the Opening Decision; the variations in costs that were included in the Monte-Carlo simulations were of a much smaller magnitude than the ones suggested in the comments;
- The price forecasts for low future oil price scenarios put forward in the comments received by the Commission were not included in the sensitivity analysis, nor was any correction made to take into account the deviation of future electricity contract prices signed in power exchanges from the considered price forecasts;
- No risk premium for nuclear power plants in excess of standard risk premia for power generation and utilities was included;
- For 2014, no estimates for WACC for the 'Green and renewables' sector were available in the WACC-benchmark analysis.

This suggests that in reality, the potential difference between the IRR values and the WACC values corresponding to each of the points in time is very likely to be even larger.

<sup>(125)</sup> One needs to also take into account that the distribution of WACC values is most likely not uniform in the indicated range. Instead, it is more likely to be centred around the midpoint of the interval, i.e. more likely taking values close to the midpoint of the range and less likely taking closer to the endpoints of the range, indicating that the overlap between the IRR figures and the WACC figures is even smaller than the ones suggested by the figures in the last row of Table 13.

<sup>(126)</sup> It must be noted that this overlap was only computed for statistical purposes. A market economy investor would typically compare the central values (or ranges) of the WACC and IRR intervals. The reason for this is that the overlap of the two ranges covers the somewhat extreme conditions when the IRR is high and at the same time the WACC is low. As both measures are connected to the same market conditions and the same one particular project, i.e. Paks II, they tend to move together (i.e. a high IRR value within the IRR-range most likely coincides with a high WACC-value within the WACC-range is realized), potentially ruling out the simultaneous realization of a low WACC value together with a high IRR value.



- (259) In addition, the underlying calculations for the estimation of the project IRR, combined with the estimated WACC values, can also be used to quantify the net present value (NPV) of the total losses expected to accrue over the lifetime of the project if it was financed by a market economy investor. In particular, the project is expected to produce losses of EUR 600 million in the baseline case of a 7,88 % market WACC and a 7,35 % IRR, the mean values for the 2017 data <sup>(127)</sup>.
- (260) Furthermore, besides the WACC-IRR comparison, the brief analysis of the LCOE also confirmed that the levelised costs of electricity produced by Paks II would not be covered by the forecasted prices.
- (261) Based on those results, the Commission concludes that the project would not produce sufficient returns to cover the costs of a private investor who could only obtain financing at market prices. Even though the February 2017 data is the most relevant for running the MEIP test, the results derived from the analysis of this data are valid even when the analysis is made using data available at the time of the initial investment decision in December 2014.
- (262) Based on the assessment developed in this, the Commission concludes that a private investor would not have invested in the project under the same terms and conditions. Therefore, since Paks II benefits fully from a new asset with an economic value, the Commission finds that the measure entails an economic advantage for Paks II.

#### 5.1.2. TRANSFER OF STATE RESOURCES AND IMPUTABILITY

- (263) As explained in the Opening Decision, Hungary would finance the construction of the project with State funds, of which 80 % is a loan from the Russian Federation and 20 % is Hungary's own funds. Hungary would directly finance all investments which are necessary for the commission, design and construction of power units 5 and 6, as set out in the Financing IGA. Therefore, the Commission concludes that the measure would entail a transfer of resources by the Hungarian State.
- (264) The Commission also recalls that the measure is imputable to the Hungarian State as Hungary has taken the decision to invest in the project and it will decide on the disbursement of the necessary funds for the payment of the EPC Contract Purchase Price and the equity financing of the two new reactors of Paks II.

#### 5.1.3. SELECTIVITY

- (265) A measure is deemed selective if it favours only certain undertakings or the production of certain goods. The Commission reiterates that the measure is selective because it concerns only one undertaking insofar as Hungary appointed Paks II under Government Resolution 1429/2014 (VII. 31.), as the Hungarian Authorised Organisation will be the owner and operator of the new nuclear generation units. Therefore, the advantage is deemed to be selective.

#### 5.1.4. EFFECT ON TRADE AND DISTORTION OF COMPETITION

- (266) As it was pointed out by the Commission in the Opening Decision, the electricity market has been liberalised in the Union and electricity producers are engaged in trade between Member States. In addition, the Hungarian electricity infrastructure is relatively strong, containing robust interconnections (equal to 30 % of domestic installed capacity) with its neighbouring Member States. Although Hungary is a net importer, Figure 5 in recital 49 illustrates that Hungary also exports electricity not only to the coupled Czech-Slovak-Hungarian-Romanian day-ahead market (operational since 2014) but also to Austria and Croatia.
- (267) The notified measure would enable the development of significant capacity which might otherwise have been subject to private investment by other market operators using alternative technologies, from either Hungary or other Member States. Furthermore, as electricity is traded across borders, any selective advantage to a company has the potential to affect trade within the Union.

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<sup>(127)</sup> These estimates of this NPV are conservative since they do not take into account the impact of certain types of delays (see recitals 99, 246 and 0) and the factors listed in recitals 239 and 258 that could substantially increase costs or decrease future revenues, and therefore, they are likely to substantially underestimate the eventual losses. Any deviations on these factors would further increase the net losses of the project.

- (268) Therefore, the Commission reiterates that the measure threatens to distort competition.

#### 5.1.5. CONCLUSION ON THE EXISTENCE OF STATE AID

- (269) Given that the Commission concludes that the measure entails an economic advantage for Paks II and that the rest of the elements for the existence of State aid are present, the Commission concludes that in the project, the Hungarian State is granting aid to Paks II which is State aid within the meaning of Article 107(1) TFEU.

#### 5.2. LEGALITY OF THE AID

- (270) As found in the Opening Decision (see recital 116), the Commission maintains its assertion that although a series of agreements have already been signed and the initial investment decision has already been taken, the final investment decision by which Paks II commissions irrevocably the construction works of the two new reactors is still to be taken and no payments have been made as of yet under the EPC Contract. Therefore by notifying the measure before its implementation, the Hungary has fulfilled its stand-still obligation in accordance with Article 108(3) TFEU.

#### 5.3. COMPATIBILITY

- (271) Given that the measure was found to entail State aid, the Commission has further examined whether the measure could be considered compatible with the internal market.
- (272) The Commission notes that Hungary considers that the measure does not constitute State aid, nonetheless it submitted arguments as regards the compatibility of the measure with the internal market as a response to the Opening Decision and to the observations of third parties received by the Commission following the publication of the Opening Decision (see Section 3.2).

##### 5.3.1. LEGAL BASIS FOR ASSESSMENT

- (273) As explained in Section 3.3.1 of the Opening Decision, the Commission may declare a measure compatible directly under Article 107(3)(c) TFEU if the measure contributes to the achievement of a common objective, it is necessary and proportionate for the attainment of that objective and it does not adversely affect trading conditions to an extent contrary to the common objective.
- (274) The measure needs to satisfy the following conditions: (i) it aims to facilitate the development of economic activities or economic areas in accordance with point (c) of Article 107(3) TFEU; (ii) it is targeted at bringing about a material improvement that the market alone cannot deliver (for example addressing a market failure); (iii) the proposed measure is an appropriate policy instrument to address the objective of common interest; (iv) it has an incentive effect; (v) it is proportional to the needs based on which it is deployed; and (vi) it does not unduly distort competition and trade between Member States.
- (275) In their response to the Opening Decision, the Hungarian authorities argued that State aid rules, and in particular the general prohibition from granting State aid, do not apply to measures falling under the Euratom Treaty.
- (276) The Commission acknowledges that the investment at hand is an industrial activity falling within the scope of the Euratom Treaty (see Annex II thereof); however, this very fact does not render Articles 107 and 108 TFEU inapplicable when assessing the financing method of such activity.
- (277) In fact, whilst Article 2(c) of the Euratom Treaty creates an obligation on the Union to facilitate investments in the field of nuclear energy and Article 40 of the Euratom Treaty obliges the Union to publish illustrative programmes in order to facilitate the development of nuclear investments, the Euratom Treaty does not foresee any specific rules to control the financing, by a Member State, of such investments. According to Article 106a(3) of the Euratom Treaty, the provisions of the TFEU shall not derogate from the provisions of the Euratom Treaty.
- (278) Indeed, Articles 107 and 108 TFEU do not derogate from any of the provisions of the Euratom Treaty, as no different State aid control rules are foreseen in the Euratom Treaty, nor the State aid control performed by the Commission pursuant to Articles 107 and 108 TFEU impedes the fulfilment of the objective of promotion of new nuclear investments enshrined in the Euratom Treaty.

## 5.3.2. COMPLIANCE WITH UNION LAW OTHER THAN STATE AID RULES

- (279) Numerous interested parties raised comments regarding the compliance of the measure under Directives 2014/24/EU and 2014/25/EU (especially with Directive 2014/25/EU due to the sector specific rules) and Article 8 Directive 2009/72/EC (the Electricity Directive); the Commission, therefore, has assessed to what extent a (possible) incompatibility with the provisions of Directives 2014/24/EU and 2014/25/EU and Article 8 Directive 2009/72/EC concerning the direct award to an undertaking for the construction of the two new reactors of Paks II could impact the State aid assessment under Article 107(3)c TFEU.
- (280) According to the settled case-law, 'when the Commission applies the State aid procedure, it is required, in accordance with the general scheme of the Treaty, to ensure that provisions governing State aid are applied consistently with specific provisions other than those relating to State aid and, therefore, to assess the compatibility of the aid in question with those specific provisions. However, such an obligation is imposed on the Commission only where the aspects of aid are so inextricably linked to the object of the aid that it is impossible to evaluate them separately. (...) If the Commission were required to adopt a definitive position, irrespective of the link between the aspect of the aid and the object of the aid at issue, in a procedure relating to State aid, on the existence or absence of an infringement of provisions of EU law distinct from those coming under Articles 107 TFEU and 108 TFEU, (...) that would run counter to, first, the procedural rules and guarantees — which in part differ significantly and imply distinct legal consequences — specific to the procedures specially established for control of the application of those provisions and, second, the principle of autonomy of administrative procedures and remedies. (...) Accordingly, although the aspect of aid at issue is inextricably linked to the object of that aid, the Commission must assess its compatibility with provisions other than those relating to State aid in the context of the procedure provided for in Article 108 TFEU and that assessment may result in a finding that the aid concerned is incompatible with the internal market. By contrast, if the aspect at issue can be separated from the object of the aid, the Commission is not required to assess its compatibility with provisions other than those relating to State aid in the context of the procedure provided for in Article 108 TFEU' <sup>(128)</sup>.
- (281) In light of the above, as regards the notified measure, its assessment on compatibility could be affected by a possible incompliance with Directive 2014/25/EU if it produced additional distortion of competition and trade on the electricity market (market on which the beneficiary of the aid — Paks II — will be active).
- (282) On this point, the Commission notes that Directive 2014/25/EU is of relevance as regards the direct award of construction works for the two new reactors to one specific undertaking. In the case at hand, while JSC NIAEP, an undertaking active in the nuclear construction sector, has been directly granted the construction works of the two reactors by the IGA, JSC NIAEP is not the beneficiary of the aid. Indeed, the beneficiary of the aid is Paks II, a market participant in the electricity market, which will own and operate the two new nuclear reactors. As already stated in the Opening Decision, JSC NIAEP is not deemed a potential beneficiary of the measure at hand.
- (283) Thus, a possible inobservance of public procurement rules in the case at hand might produce distortive effects on the market of nuclear construction works. However, the object of the investment aid to Paks II is to enable it to generate electricity without bearing the investment costs for the construction of nuclear installations. Therefore, no additional distortive effect on the competition and trade on the electricity market has been identified that would be created by the non-compliance with Directive 2014/25/EU, as regards the direct award of the construction works to JSC NIAEP.
- (284) Therefore, in absence of 'indissoluble link' between the possible infringement of Directive 2014/25/EU and the object of the aid, the compatibility assessment of the aid may not be affected by this possible infringement.
- (285) In any event, Hungary's compliance with Directive 2014/25/EU has been assessed in a separate procedure by the Commission where the preliminary conclusion on the basis of available information is that the procedures laid down in Directive 2014/25/EU would be inapplicable to the entrustment of construction works of two reactors on the basis of its Article 50(c).

<sup>(128)</sup> ECJ, 'Castellnou Energía v European Commission', T-57/11, ECLI:EU:T:2014:1021, paragraphs 181-184.

- (286) As regards the possible breach of Article 8 of Directive 2009/72/EC, the Commission considers that the requirement of applying a tendering procedure or any procedure equivalent in terms of transparency and non-discrimination for providing new capacity is not an absolute one. In fact, the first sentence of Article 8(1) requires Member States to provide in domestic law for possibility to use tendering procedure for new capacity. Hungary has complied with this requirement by transposing this requirement within its Act on Electricity<sup>(129)</sup>. In addition, in accordance with the second sentence of Article 8(1), a tendering procedure must not be required if the generation capacity to be built on the basis of the authorisation procedure laid down in Article 7 of Directive 2009/72/EC were sufficient to ensure security of supply. This is the case at hand: the project has been authorised (following the authorisation procedure described in Article 7) precisely to cover, inter alia, the gap in the envisaged future domestic total installed capacity and the Commission does not have elements available showing that the installed capacity would be insufficient. Thus the tendering or equivalent procedure requirement pursuant to Article 8 Directive 2009/72/EC does not seem to apply to the project at hand. In light of the above, the Commission does not have sufficient element to point at a possible applicability of Article 8 of Directive 2009/72/EC.
- (287) Therefore, the Commission considers that the assessment of the notified measure under State aid rules is not affected by the compliance with other provisions of Union law.

### 5.3.3. OBJECTIVE OF COMMON INTEREST

- (288) As explained in Section 3.3.2 of the Opening Decision, the measure must aim to achieve a well-defined objective of common interest. When an objective has been recognised by the Union as being in the common interest of the Member States, it follows that it is an objective of common interest.
- (289) The Commission noted that the measure entails specific support for nuclear technology. In this regard, the Commission noted that Article 2(c) of the Euratom Treaty provides that the Union shall 'facilitate investment and ensure, particularly by encouraging ventures on the part of undertakings, the establishment of the basic installations necessary for the development of nuclear energy in the Community'.
- (290) The Commission considered that the investment aid to Paks II envisaged by Hungary aimed at promoting nuclear energy could, therefore, be viewed as pursuing the objective of common interest by promoting new nuclear investments.
- (291) Several interested parties have submitted comments claiming that the investments in nuclear energy by Hungary under the Euratom Treaty cannot be considered an objective of common interest.
- (292) The Commission, however, finds that the provisions of the Euratom Treaty were expressly confirmed by the Treaty of Lisbon and therefore, the Euratom Treaty cannot be considered an outdated or antiquated Treaty without applicability. The parties to the Lisbon Treaty considered that it is necessary that the provisions of the Euratom Treaty continue to have full legal effect<sup>(130)</sup>. The preamble of the Euratom Treaty recognises that the conditions necessary for the development of a powerful nuclear industry should be created. As recognised in previous Commission decisions<sup>(131)</sup>, the Commission concludes that the promotion of nuclear energy is a key objective of the Euratom Treaty, and therefore the Union. As set out in the preamble to the Euratom Treaty, the Commission is an institution of the Euratom Community and is obliged to 'create the conditions necessary for the development of a powerful nuclear industry which will provide extensive energy resources'. This obligation should be taken into account in exercising its discretion to authorise State aid in accordance with Article 107(3)(c) and Article 108(2) TFEU.
- (293) Furthermore, although the development of nuclear energy is not mandatory for Member States, and some Member States have chosen not to construct and develop nuclear power plants, the promotion of nuclear investments can be considered to be an objective of common interest for the purposes of State aid control. In fact, many objectives acceptable and recognised under State aid rules and in practice, such as regional development, are relevant to only one or a few Member States.

<sup>(129)</sup> See paragraph 8 of Act LXXXVI. of 2007 on the Act of Electricity.

<sup>(130)</sup> Protocol No 2 to the Treaty of Lisbon.

<sup>(131)</sup> See Commission Decision 2005/407/EC of 22 September 2004 on the State aid which the United Kingdom is planning to implement for British Energy plc (OJ L 142, 6.6.2005, p. 26) and Commission Decision (EU) 2015/658 of 8 October 2014 on the aid measure SA.34947 (2013/C) (ex 2013/N) which the United Kingdom is planning to implement for support to the Hinkley Point C nuclear power station (OJ L 109, 28.4.2015, p. 44).

- (294) The Commission therefore concludes that the measure envisaged by the Hungarian authorities pursues the objective of promoting new nuclear investments as enshrined in the Euratom Treaty.
- (295) Following the Opening Decision, the Hungarian authorities submitted updated information from TSO studies which take imports and the evolution of demand into account. According to the study issued by MAVIR referred to in recital 50, the Hungarian market requires at least 5,3 GW of additional new electricity generation capacity by 2026 and somewhat more than 7 GW by the end of the forecast period in 2031. The Commission therefore finds that the measure aimed at promoting nuclear energy pursues an objective of common interest enshrined in the Euratom Treaty, while also contributing to security of electricity supply.

#### 5.3.4. NECESSITY OF THE AID AND MARKET FAILURE

- (296) The Commission recognised in the Opening Decision that nuclear energy is characterised by extremely high fixed sunk costs, and by very long time periods during which such costs need to be amortised. This suggests that investors considering entering the nuclear energy generation sector will find themselves exposed to considerable levels of financing risks.
- (297) The Commission requested information regarding potential new nuclear investments (without State support), the timelines (given the specifics of the Hungarian electricity market), their expected development, as well as market modelling in that respect in order to assess whether there were any market failures that could affect new investments in nuclear projects in Hungary and what those projects would be.
- (298) As explained in recital 129 of the Opening Decision, in order to determine whether State aid is necessary, the Commission has to determine whether the measure is targeted towards a situation where the measure could bring about a material improvement that the market alone cannot deliver, for example by remedying a well-defined market failure.
- (299) The existence of a market failure is part of the assessment as to whether State aid is necessary for achieving the objective of common interest pursued. In the case at hand, Hungary pursues the promotion of new nuclear investments as enshrined in the Euratom Treaty in order to address the gap in the overall national installed capacity it will soon be facing. Therefore, the Commission has to assess whether State aid is necessary for achieving the objective of promoting new nuclear investments.
- (300) In this respect, the Commission recalls the comments of interested parties as regards whether the Commission should assess if investments in electricity generation in general are characterized by a market failure. Some interested parties note that no market failure would exist for such investments and that the current low wholesale electricity price would merely be a response to the normal functioning of the market. Other interested parties put forward the argument that the Commission should define the relevant market on which the existence of a market failure is assessed as the liberalised internal market in electricity. Moreover, if there was a market failure on this relevant market, it would not be best addressed by a nuclear power plant.
- (301) However, in its assessment of the necessity of the aid, the Commission examines whether the objective in the common interest could be achieved without State intervention or whether a market failure prevents this. In assessing the necessity of the aid, it is not necessary for the Commission to first define a relevant market. To establish whether a market failure exists, the Commission must first determine what objective in the common interest is being pursued by the Member State. The common interest objective of this measure does not concern the internal market in electricity in general or investments in electricity generation in general; rather it concerns the promotion of new nuclear investments, as enshrined in the Euratom Treaty, which are, of course, undeniably part of the electricity market and will help deal with Hungary's future gap in its overall installed capacity. Secondly, the Commission must investigate whether the free interplay of supply and demand on the electricity market in general ensures that that objective of new nuclear developments can be achieved without State intervention. The definition of a particular market is not necessary in that regard.



- (302) The Commission has therefore assessed whether a market failure exists as regards the objective of promoting new nuclear investments in Hungary and whether it is a general feature of the Hungarian market or a specific feature related to nuclear energy alone.
- (303) In Section 5.1.1.4 of this Decision, the Commission concluded that the project would not produce sufficient returns to cover the costs of a private investor who could only obtain financing at market prices as the expected IRR of the investment is lower than a market-based benchmark WACC for the project and a rational private investor would therefore not invest under such conditions without additional State support.
- (304) Having regard to investments in nuclear energy, Hungary acknowledges that that technology is characterised by extremely high front loaded investment costs and by very long waiting times before investors are remunerated.
- (305) The Opening Decision already contained a description of the Hungarian electricity market and the rationale behind the decision of Hungary to pursue a new nuclear power plant project, in particular given that it is estimated that the existing power plants will soon retire. As explained in recital 14 of the Opening Decision, the Feasibility Study developed by MVM Group exploring the implementation and financing of a new nuclear power plant was based on assumptions that in Hungary, 6 000 MW of the 8-9 000 MW gross installed capacity was anticipated to disappear by 2025 due to the shutdown of obsolete power plants.
- (306) As explained in recitals 15 and 45 of the Opening Decision the Hungarian TSO, MAVIR, projected a significant gap in the future overall installed capacity in Hungary<sup>(132)</sup>. Pursuant to the latest information available, as referred to in recital 50 of this decision, the new estimates point to an overall capacity need of over 7 GW by 2031. According to the Hungarian authorities, current local power production will therefore increasingly fail to satisfy the growing energy demand, and thus, Hungary will inevitably experience a gap between electricity demand and supply and an increasing dependence on power imports and increasing power prices for end consumers if no new investments in power generation facilities are made. The 2,4 GW Paks II project will contribute to fulfilling this requirement.
- (307) The Hungarian authorities had further pointed to MAVIR's finding that despite the large capacity gap identified, relatively little new capacity is being built in Hungary, as explained in recital 46 of the Opening Decision and Table 2 of recital 51 of this Decision. The Commission therefore questions whether any market failure applicable to new nuclear investments in Hungary is specific for such types of investment.
- (308) The Commission notes that new nuclear investments in Europe are characterised by uncertainties and in some cases, State support measures could be planned. The Commission has looked into the information submitted by Hungary as regards new nuclear projects in Finland, France and Slovakia which were claimed to be funded on market basis. Hungary claims that market funding of those projects would exclude the existence of a market failure for nuclear projects (at least for some Member States). The Commission notes, however, that in Slovakia, France and in the case of Olkiluoto 3 in Finland, the decisions to invest for the projects were made before the economic crisis in 2008 and before the Fukushima disaster, two events which may have significantly affected the parameters for investment. Furthermore, the investments in Finland are based on the Mankala business model<sup>(133)</sup> where the Finnish investors obtain all electricity output at cost price. The Mankala model gives the opportunity for the many shareholders who are part of the investing cooperative to share the risks involved, rather than have one or few major shareholders assume the entire risk of pursuing a project of constructing a nuclear power plant.
- (309) Hungary argued that Paks II should be compared with the Hanhikivi-1 project in Finland which is a project to be built by Fennovoima. The Commission notes that the Hanhikivi-1 project, besides having a Mankala business model, also has a shareholding of 34 % belonging to the constructor of the plant, Rosatom. The Commission is not in

<sup>(132)</sup> A magyar villamosenergia-rendszer közép- és hosszú távú forrásoldali kapacitásfejlesztése (Medium- and long-term development of generation assets of the Hungarian electricity system): [https://www.mavir.hu/documents/10258/15461/Forr%C3%A1selemz%C3%A9s\\_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6f84a](https://www.mavir.hu/documents/10258/15461/Forr%C3%A1selemz%C3%A9s_2016.pdf/462e9f51-cd6b-45be-b673-6f6afea6f84a) (Mavir, 2016).

<sup>(133)</sup> Mankala is a widely used business model in the Finnish electricity sector, whereby a limited liability company is run like a zero-profit-making cooperative for the benefit of its shareholders. Available at: <http://www.ben.ee/public/Tuumakonverentsi%20ettekanded%202009/Peter%20S.%20Treialt%20-%20Mankala%20principles.pdf>, accessed on 26 October 2015.



a position to compare the two projects which appear to have a different risk profile, at least in terms of shareholding. Hungary, as an investor, would assume the risk of the Paks II project alone, whereas the Mankala investors will share the burden. Moreover, the constructor of the plant, as direct shareholder in the Hanhikivi-1 project, may behave differently in the Paks II project where it is held liable solely by the EPC contract not as an investor or shareholder.

- (310) Therefore, nuclear projects that are already being constructed would appear not to represent good benchmarks for assessing whether any market failures exist in new nuclear investments.
- (311) In addition, Hungary submitted information about plans in other Member States to develop new nuclear power plants: Lithuania, Romania, Bulgaria and Czech Republic. Those plans appear, however, to be either governed by uncertainty, still under negotiation as regards the necessary support measures and financing structure<sup>(134)</sup> or envisage covering price risk by way of contracts for difference<sup>(135)</sup>. Given that those plans do not yet seem to have materialised, they do not seem to constitute a valid indicator for assessing the existence of a market failure.
- (312) A study performed by ICF Consulting Services for the Commission Directorate for Economic and Financial Affairs on the Impact Assessment of the Euratom Loan Facility<sup>(136)</sup> ('the ICF study') finds that nuclear projects have certain unique characteristics which can make their financing particularly challenging. Those features include: the high capital cost and technical complexity of nuclear reactors which present relatively high risks during licensing, construction and operation; the long payback period; the often controversial nature of nuclear projects which gives rise to additional political, public and regulatory risks; and the need for clear approaches and financing schemes for radioactive waste management and decommissioning. Beyond the traditional challenges associated with financing, the ICF study finds that nuclear power plant developers face heightened scrutiny and conservatism from prospective financiers, due to current market conditions, namely the continuing effects of the global financial crisis of 2008, the Fukushima accident, Eurozone troubles, and Basel III. The challenges in financing have placed a renewed focus on project risk<sup>(137)</sup>. The ICF study finds, on the basis of the opinions expressed by stakeholders consulted during that study, that the financing challenges derive less from the lack of availability of private sector finance but rather from the fact that the risks associated with such investments are too high compared to the alternative investment opportunities (namely in conventional and renewable energy infrastructure). The ICF study concludes that financing nuclear technology is consequently unattractive, resulting in a gap between the level of investment required and what the market is willing to provide.
- (313) The financial risks related to new nuclear developments comprise: development and project preparation risk, construction risk, market and revenue risk, policy risks and regulatory risks. The ICF study finds that the risks specific to nuclear energy, by comparison with other types of electricity generation, concern safety standards required for nuclear which means higher construction costs and higher operation costs compared to other energy technologies and the average life cycle of a nuclear power plant which is significantly longer than comparable infrastructure investments, thus giving rise to associated financial risks. This finding is in line with the findings of the Commission in the assessment of State aid to Hinkley Point C<sup>(138)</sup>.
- (314) In the opinion of the stakeholders consulted for the study, market risks are the main obstacle preventing investments in nuclear. As regards market risks, the ICF study finds that compared to conventional energy sources which can be operational and generate revenue within 3 years, nuclear power plants take longer to construct and become operational in order to generate revenue. A longer plant lifetime also means that returns are earned over the longer

<sup>(134)</sup> As regards Czech Republic see: <http://www.world-nuclear.org/info/country-profiles/countries-a-f/czech-republic/>, accessed on 26 October 2015, as regards Lithuania see: <http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Lithuania/>, accessed on 26 October 2015, as regards Bulgaria see: <http://www.world-nuclear.org/info/Country-Profiles/Countries-A-F/Bulgaria/>, accessed on 21 June 2016.

<sup>(135)</sup> As regards Romania see: <http://economie.hotnews.ro/stiri-companii-20436128-nuclearelectrica-solicita-actionarilor-aprobarea-memorandumului-intelegere-care-semna-companie-chineza-pentru-construirea-unitatilor-3-4-cernavoda.htm>, accessed on 21 June 2016.

<sup>(136)</sup> Study from 2 November 2015, not yet published, p. 35.

<sup>(137)</sup> Study from 2 November 2015, not yet published, p. 35.

<sup>(138)</sup> SA.34947 (2013/C) (ex 2013/N) — United Kingdom — Support to the Hinkley Point C Nuclear Power Station.

term, as opposed to the short to medium term on investments in conventional energy sources. Since it is difficult to accurately forecast energy prices over a long timescale, investors rely on projections of future fossil fuel prices, the penetration of renewables in the sector and the access of renewables to the grid conditions and the future carbon price<sup>(139)</sup>. While fossil fuel prices are set by the market and are intrinsically uncertain, the carbon price is, to some degree, determined by policy. The ICF study finds that there is uncertainty as to whether the carbon price will be sufficiently high in the future to ensure the competitiveness of non-fossil technology, including nuclear energy.

- (315) In addition, the Commission takes note that there is generally great uncertainty about electricity prices in the long run since future prices in upstream markets for gas, coal and oil, as well as the future policies on renewables, nuclear and emission trading, will all influence future electricity prices and are very difficult to predict. That conclusion is also supported by the status of similar projects in the Union, where the certainty of revenue flow and ensuring an output for the electricity was crucial in taking investment decisions. Moreover, the current trend towards lower electricity prices in Europe and an increased need in electricity markets for the flexible generation of energy adds to the uncertainty regarding the future revenue flow of a nuclear power plant which produces an inflexible base-load.
- (316) The ICF study also identifies an additional element of market risk covering the creditworthiness of the developer/utility responsible for the project and the Member State financially supporting the project. Creditworthiness affects the costs of finance and could make it too high for private investments.
- (317) The ICF study also finds that the lengthy financial and initial design lifespan of nuclear power plants may make them open to risks deriving from public and political support shifts, thus affecting the commercial and financial viability of nuclear projects. Investors, therefore, look for reassurance and certainty that once built, the energy contract or estimated operational life of the plant will be fulfilled. Investor concerns are also linked to regulatory standards which can change during the life cycle of a nuclear power plant and could require additional capital investments or an increase in operational costs. Investors are wary of financing such projects unless sufficient contingency for safety improvements is made. This is particularly important when a nuclear power plant reaches the end of its normal life and is undergoing life extension, requiring a new license for which additional conditions must be met<sup>(140)</sup>. Stakeholders consulted indicated that the political and regulatory risk was the third most important obstacle to investment in nuclear power plants.
- (318) The study finds that market liberalisation can also have a negative impact on the level of investment in nuclear energy compared to other energy technologies due to the larger investment required. The regulatory framework in each Member State has a role to play as it affects the ability of the utility provider to generate profits and therefore affects the value of the company and its ability to finance nuclear development from its balance sheet or through long term loans from financial institutions. Another financing obstacle for new nuclear investments regards the latest Basel III committee rules on capital markets which increase the capital which must be held by banks to underpin long-term loans such as loans for the development of nuclear power plants<sup>(141)</sup>.
- (319) Those findings would be in line with the submissions of the Hungarian authorities who argue that private sector companies, as well as State budgets, have a limit with regard to the financial exposure they can take on individual projects with large funding requirements, long construction periods and risks regarding delivery and commission in the absence of protection against construction that runs over time or budget. Investment track record is higher in the oil and gas sector than amongst utilities, especially following the recent deterioration in those companies' valuations. If they do invest, it is also customary for utilities to invest alongside their peers in order to share risks.

<sup>(139)</sup> Study from 2 November 2015, not yet published, p. 37.

<sup>(140)</sup> Study from 2 November 2015, not yet published, p. 38.

<sup>(141)</sup> Study from 2 November 2015, not yet published, p. 39.

- (320) Modelling performed for the purposes of the ICF study shows that overall, nuclear power plant investments lack competitiveness up to 2030, but this lack of competitiveness decreases decidedly from 2040 onwards. In the worst case scenario of an adverse economic climate, however, new investments will be nearly absent over the whole period <sup>(142)</sup>. It is also found by the ICF study that the market provides more competitiveness after 2030 as carbon and energy prices continue to increase after 2030. The ICF study uses sensitivity modelling to assess the evolution of the carbon price and its influence of investments in nuclear power plants. That study finds that none of the carbon price scenarios would hypothetically succeed in making nuclear profitable in the period 2020-2025.
- (321) Moreover, information from credit rating services <sup>(143)</sup> made public shows that the construction of new nuclear power plants is generally credit negative while exiting the nuclear sector has been proven to be credit positive for utilities.
- (322) The modelling and findings of the ICF study apply also fully to the market situation in Hungary which, as explained above in recitals 305 and 306, is expected to face a significant gap in the future overall installed capacity in Hungary. Considering the elements set out in this Section 5.3.4, the Commission therefore finds that there is a financing market failure affecting new nuclear investments which applies also to new nuclear investments in Hungary.
- (323) It could, of course, be argued that in this Decision, the main risks related to the development, project preparation and construction are mitigated, at least to a certain extent, by the turn-key EPC Contract. However, this still does not mitigate market and revenue risks as well as policy and regulatory risks as regards the Paks II project. The measure appears, therefore, to be necessary for achieving the objective of promoting new nuclear investments in Hungary.

#### 5.3.5. APPROPRIATE INSTRUMENT

- (324) The Commission must determine in its assessment whether the proposed measure is an appropriate policy instrument to address the objective of common interest of the promotion of nuclear energy.
- (325) The measure takes the form of an investment measure granted by the Hungarian State to Paks II for the development of the project. Hungary confirmed that it would not plan to grant any operating support to Paks II during its operation and that State aid would only cover the investments costs for the completion of the project.
- (326) Following the Opening Decision, Hungary did not provide any information on potential alternative instruments that could incentivise new investments in nuclear energy.
- (327) Other policy instruments and schemes, such as preferential loans or tax reductions would, in the Commission's view, not be sufficient to achieve the same result, given the specifics of the project and the magnitude of the necessary financial and other resources as well as the potential market failure identified.
- (328) Consequently, the Commission considers that the measure would constitute an appropriate instrument for the construction of the two new reactors of Paks II.

#### 5.3.6. INCENTIVE EFFECT

- (329) In order for the measure to have an incentive effect, it must change the behaviour of the undertaking concerned in such a way that it engages in additional activity which it would not carry out without the measure or which it would carry out in a restricted or different manner.
- (330) The Commission notes that Paks II is a company which was incorporated by the State for the single objective to develop and operate Units 5 and 6 of the nuclear power plant. As described in recitals 12, 26 and 27 above, the Hungarian State decided to provide the financial contribution to Paks II in order to carry out this objective.

<sup>(142)</sup> Study from 2 November 2015, not yet published, p. 60.

<sup>(143)</sup> Moody's Investor Service, Nuclear Generation's Effect on Credit Quality, available at: [https://www.oecd-neo.org/ndd/workshops/wpne/presentations/docs/2\\_2\\_LUND\\_OECD\\_Sept%2019\\_Lund\\_Moodys\\_Nuclear\\_Generations\\_effect\\_on\\_Credit\\_Quality.pdf](https://www.oecd-neo.org/ndd/workshops/wpne/presentations/docs/2_2_LUND_OECD_Sept%2019_Lund_Moodys_Nuclear_Generations_effect_on_Credit_Quality.pdf), accessed on 13 July 2016.

- (331) In this respect, the Commission notes that the project would not go ahead either as the required financial and other resources would neither be available nor accessible to the beneficiary, who has no other revenue generating activities and whose capital structure is provided and designed entirely by the State. This was confirmed in the formal investigation, where the Commission found that the project would not produce sufficient returns without the support of the Hungarian State (see analysis in Section 5.1.1 of this Decision).
- (332) Therefore, the State aid incentivises the achievement of the objective of common interest by way of the development of the nuclear power plant.

#### 5.3.7. PROPORTIONALITY

- (333) To assess the proportionality of a measure, the Commission must ensure that a measure is limited to the minimum that enables the successful completion of the project for the attainment of the common objective pursued.
- (334) In the case in hand, the beneficiary would receive a financial contribution for the construction of generation assets without facing any risk linked to refinancing costs which other market operators would face.
- (335) Various observations received by the Commission argue that as the project will be carried out without a call for tender, it cannot be determined whether measure to cover the total costs would be limited to the minimum required to realise the project.
- (336) The Commission notes that State aid rules do not require a tender to estimate costs and revenues. A tender is only one of several means by which an estimation can be carried out. Therefore the fact that Hungary did not select Paks II as the beneficiary of the measure as a result of a tendering process does not, in and of itself, constitute overcompensation.
- (337) As regards the allegations that the Hungarian authorities did not investigate the minimum support for making the project accomplishable and chose to finance the project in its entirety, the Commission indeed considers that due to the market failure present, the entirety of the financing for the construction of the two new reactors of Paks II is to be regarded as State aid as confirmed in Section 5.1 of this Decision.
- (338) As regards the possible overcompensation of the beneficiary because of the measure, the Commission recalls its economic analysis in Section 5.1 which draws the conclusion that the project would not be profitable on its own as the expected IRR would not exceed the market WACC as the generated revenues are expected to fall short of covering the initial and subsequent costs of the project, even under fairly optimistic scenarios. In its assessment, the Commission estimated the level of IRR based on market price forecasts and other parameters considered market conform. When determining this gap between the cost of capital and the returns, the Commission has therefore fully taken into consideration the contribution which commercial revenues (sale of electricity) are expected to make to the viability of the project. In fact, the expected costs of the project have been compared with the expected returns whereas no additional State resources are envisaged by Hungary.
- (339) Due to the fact that the cost of capital for the project is higher than the expected returns, the Commission is of the view that the State aid granted by Hungary is, in its entirety, necessary and proportionate for the construction of the project and that overcompensation is excluded in this respect. As it was confirmed by Hungary, no additional support is granted for the phase of operation.
- (340) In this regard, as explained in recitals 96 and 97, Hungary committed that Paks II will use the State resources only for the project and any surplus generated would be channelled back to the State budget. In the view of the Commission, that commitment rules out any use of state resources giving rise to additional profits for Paks II going beyond what is necessary to ensure the economic viability of the beneficiary and ensures that the aid is limited to the minimum.
- (341) Other observations stress that State aid would not only be limited to the implementation of the investment but that it would also be granted in the operational phase, which could lead to an overcompensation of Paks II. In this regard the Commission recalls that Hungary has indicated that it would not provide any additional State support to the notified measure in question. Additionally, the Commission recalls that according to the additional information submitted by Hungary on 28 July 2016, any new support to Paks II would, in any event, be subject to State aid approval.

- (342) The Commission examined whether any overcompensation could occur if the beneficiary of the measure, realised, during the operation of reactors, returns which turn out to be higher than those estimated by the Commission in its IRR calculations (see Section 5.1). In particular, the Commission examined what would happen if Paks II could reinvest any profits that are not paid to the State in the form of dividends to develop or purchase additional generation assets and thus strengthen its position on the market. To this extent, the Commission notes that pursuant to the additional information submitted by Hungary on 28 July 2016 (see recital 96), the beneficiary cannot reinvest in the extension of Paks II's own capacity or lifetime or in the installation of additional generation capacities, other than those of reactors 5 and 6 which are subject to this Decision.
- (343) Bearing in mind the elements set out in this Section 5.3.7, the Commission is of the opinion, particularly in light of the additional information of the notification referred to in recitals 96 and 97, that the beneficiary should recompense the State for having made available the plant and should not retain extra profits beyond what is strictly necessary to ensure its economic operation and viability. Consequently the measure is proportionate.

#### 5.3.8. POTENTIAL DISTORTIONS OF COMPETITION AND EFFECT ON TRADE AND OVERALL BALANCING

- (344) For the measure to be compatible with the internal market, the negative effects of the measure in terms of the distortion of competition and impact on trade between Member States must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest. In particular, once the objective of the measure has been established, it is mandatory to minimise the potential negative effects of the measure on competition and trade.
- (345) In the Opening Decision, the Commission identified three ways of possible distortions of competition. First, an increase of possible market concentration as a result of the merged future ownership and operation of the currently running Paks NPP and Paks II. Secondly, the Commission had doubts as to whether the new base-load capacities characterised by a high load factor may serve as a barrier to entry for new market players and displace further down the merit curve a certain amount of existing higher cost generation capacity. In this respect, the Commission has examined the following parameters: (i) the measure's potential effects in the Hungarian market; (ii) the measure's potential cross-border effects (iii) the potential effects of the parallel operation of Paks NPP and Paks II. Finally, a potential distortion was detected insofar the Commission suspected that Paks II might cause a certain wholesale market liquidity risk by limiting the number of supply offers available in the market.

##### 5.3.8.1. *Increase of possible market concentration*

- (346) Following the Commission's expressed doubts on possible market concentration in the Opening Decision, some allegations by interested parties also refer to a possible merger of Paks II and the operator of the currently running four units in Paks NPP. This was denied by the MVM Group and Paks II as well as the Hungarian State.
- (347) The Commission notes that the Hungarian electricity generation market is characterised by a relatively high market concentration with the current nuclear power station Paks NPP (MVM Group) providing some 50 % of domestic generation. Such market concentrations could be detrimental to efficient market competition as it may serve as a barrier to entry for new market players and may pose a liquidity risk by limiting the number of supply offers available.
- (348) The two new nuclear reactors of Paks II are planned to become operational at a time when the existing four nuclear reactors have not yet been phased out. The Commission pointed out in the Opening Decision that unless the operators of Paks NPP and Paks II are held entirely separately and can be considered independent and unconnected this could have a distortive impact on the Hungarian market.
- (349) The Commission accepts that Paks II is currently legally independent from the MVM Group. However, the Commission was concerned that such legal separation was insufficient or that it might not be maintained without additional guarantees in this respect. The Commission was also concerned of future possible links of Paks II with State controlled companies active in the field of energy which could have reinforced their influence on the Hungarian energy market.



- (350) Firstly, the Commission notes that the objective of the Hungarian measure is the gradual replacement of the existing nuclear capacities at Paks NPP between 2025 and 2037. It is indeed expected that there would be a period of time when all the four reactors currently in use would run in parallel with those of Paks II; this period shall be limited to a period between 2026 and 2032, however, and with the retirement of all its nuclear capacities by 2037, MVM Group's market share would significantly decrease.
- (351) Secondly, the Commission recalls (see recital 102) that Hungary submitted that the MVM Group and Paks II are independent and unconnected on the following grounds:
- (a) They are managed by different government departments (the MVM Group by the Ministry of National Development through the Hungarian National Asset Management Inc. and Paks II by the Prime Minister's Office);
  - (b) There are no shared or common directorships on the governing board of each company;
  - (c) There are existing safeguards to ensure that commercially sensitive and confidential information are not exchanged between the companies;
  - (d) The decision making powers of each company are separate and distinct from one another.
- (352) This was also reiterated by the MVM Group who stressed that MVM Group and Paks II are two separate power generation companies, like any other competitors, and there is no reason to assume any coordination or activities or that the two companies would be combined. Moreover, the MVM Group argues that its own strategy includes possible investments that may compete with Paks II into the future.
- (353) Thirdly, the Commission recalls the additional information submitted by Hungary and referred to in recital 117, according to which Paks II, its successors and affiliates will be fully legally and structurally separated within the meaning of paragraphs 52 and 53 of the Merger Jurisdictional Notice, and will be maintained, managed and operated independent and unconnected from the MVM Group and all of its businesses, its successors and affiliates and other State controlled companies active in the generation, wholesale or retail of energy.
- (354) The Commission is satisfied that this additional information addresses all its concerns as regards possible future concentrations and links between incumbent energy entities on the Hungarian electricity market. There is no possibility for Paks II to be now linked to either MVM Group or other energy State controlled companies and thus there is no possibility for it to increase its market influence during the operation of the currently running four units in Paks NPP and beyond.

#### 5.3.8.2. *Barrier to entry for new market players*

- (355) As regards the Commission's doubts on whether the new capacities may serve as a barrier to entry for new market players, some observations stressed that NPP's are deployed to cover high base load capacity that is given priority when being fed into the grid and thanks to their low operating costs they are also better positioned on the supply side of the market.
- (356) The Commission has analysed the competition impact of the measure on other market players in the Hungarian market as well as in neighbouring markets. It has also looked specifically at the term of the parallel operation of the currently running four units of Paks NPP and Paks II, i.e. the envisaged period between 2026 and 2032.
- (a) *The measure's potential effects in the Hungarian market*
- (357) The Commission recalls that the operation of units 5 and 6 of Paks II is intended to compensate for the loss in capacity when units 1-4 of Paks NPP which will retire gradually until the end of 2032, 2034, 2036 and 2037 respectively, without envisaged prospect of further lifetime extension (see recital 10). The two new units 5 and 6 of Paks II are meant to start operation in 2025 and 2026 respectively. This evolution of nuclear capacities is also assumed in the study issued by MAVIR in 2016 (see recital 20).



- (358) The Commission recalls that the electricity currently generated by Paks NPP provides 36 % of Hungary's overall electricity consumption, which will decrease in view of the expected growth in demand mentioned in recital 50, and the production output of Paks II is expected to produce a similar output once Paks NPP has been phased out.
- (359) Taking into account the capacity replacement nature of the Paks II project, the Commission notes that once all four units of Paks NPP have been phased out in 2037, the forecast future gap in overall national installed capacity envisaged by the TSO, as explained in recital 50, would return to previous levels (see also Figure 7 of recital 108), i.e. the 2,4 GW capacity of Paks II will not lead to long term increase in the total level of installed nuclear capacity in Hungary.
- (360) The Commission also notes that the list of ongoing investments or approved new investments in electricity generating installations is rather short (see Table 2 in recital 51). Considering these data, the Commission considers that Hungary will remain a significant net importer following the phase out of the four units of the currently running Paks NPP.
- (361) As explained above in recital 93, Hungary submitted that, according to NERA's analysis, in the absence of the notified measure, the 2,4 GW capacity provided by Paks II would instead be provided by commercial OCGTs and CCGTs. Even with Paks II, there will be room in the market for new gas or other capacity. The NERA Study suggests that despite replacing most of the capacity of the Paks II plant with new gas capacity in Hungary, Hungary would remain heavily dependent on electricity imports.
- (362) As regards the deployment of possible technologies besides Paks II, the Commission recalls Hungary's claim that the current and historical entry decisions of renewable plant depend crucially on government subsidy programmes, rather than market prices (see recital 107(a)). The Commission acknowledges that Hungary's National Energy Strategy <sup>(144)</sup> foresees renewable energy in its energy mix in accordance with the Union's 2020 climate and energy package <sup>(145)</sup>, the national renewable targets sets out in the Renewables Energy Directive <sup>(146)</sup> and the key targets of 2030 climate and energy framework <sup>(147)</sup>. The Commission notes that the variable costs <sup>(148)</sup> of renewable technologies are traditionally lower due to their fuel-independent nature than those of nuclear technology. In addition, in view of the mentioned European and national renewable targets and obligations, Hungary is not an exception from deploying support mechanisms in order to bring online new power plants which generate electricity from renewable sources. The Commission notes that a part of Hungary's renewable scheme called METÁR has been operational since January 2017 <sup>(149)</sup>, whereas other parts of the scheme related to larger producers from renewable sources are currently pending for State aid approval before the Commission.
- (363) The Commission recalls that according to the study issued by MAVIR in 2016 (see recital 20), the current coal (lignite) generation fleet (see Figures 1 and 2 of recital 43) will have gradually retired between 2025 and 2030 which would allow additional installations to come online, especially as the intermittent technologies mentioned in recital 362 would require the coexistence of complementary, flexible capacities too.
- (364) The Hungarian measure is designed as an investment support and once the generating units have started operating, no further operating support will be granted to Paks II, therefore it will be exposed to market risks.

<sup>(144)</sup> See recital 20.

<sup>(145)</sup> [http://ec.europa.eu/clima/policies/strategies/2020/index\\_en.htm](http://ec.europa.eu/clima/policies/strategies/2020/index_en.htm)

<sup>(146)</sup> Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16).

<sup>(147)</sup> [http://ec.europa.eu/clima/policies/strategies/2030/index\\_en.htm](http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm)

<sup>(148)</sup> Variable costs of an electricity generating unit are those which typically determine the final price of one unit of electricity generated.

<sup>(149)</sup> Reported to the Commission under SA.47331 (2017/X) pursuant to the General Block Exemption Regulation (Commission Regulation (EU) No 651/2014 of 17 June 2014) declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (OJ L 187, 26.6.2014, p. 1).

- (365) Electricity prices are mainly determined by the marginal costs of the generators participating in a certain market. Renewables technologies have low marginal costs as most of them can operate without fuel costs. Nuclear technology also has low running costs and follows the renewables in the ranking of the so called merit order. Although due to their fuel costs, coal plants run typically at a more expensive marginal cost rate than nuclear power plants, however, for low carbon permit prices, the running costs of a coal plant are typically lower than those of a CCGT plant. This means that technologies of higher operating costs can increase prices, therefore the presence of nuclear power in the energy mix, in itself, is not expected to increase the electricity price in Hungary and nuclear power will be a price taker rather than a price maker.

*(b) The measure's potential cross-border effects*

- (366) Both Hungary and several interested parties pointed out that the energy market to be assessed is larger than the individual State's territory, mainly given the very good interconnection level and that the measure entails competition distortions that affect, at least, Member States close to Hungary.
- (367) The Commission notes that, as shown by Figure 5 in recital 49 of this Decision, the import-export balance of Hungary's electricity trade is negative towards almost all the neighbouring Member States. The Commission also takes note of the fact that Hungary is an overall net importer, Figure 1 in recital 43 shows that approximately 30 % of the country's demand derived from imports in 2015 amounting to around 13 TWh. The Commission recalls that, as it was explained in Figure 2 in recital 43 of the Opening Decision, the level of import was at the same height in 2014.
- (368) The Commission considers that Hungary is a highly integrated electricity market within the European Union, with interconnection capacity standing at approximately 75 per cent of total installed domestic generation capacity. In addition, as shown in Tables 4 and 5, of recital 105, interconnection capacities will significantly increase by 2030 which would allow trade flows to continue to reach the Hungarian price region.
- (369) What is explained above in recital 365 is viewed true in a cross-border context as well. The construction of Paks II will create a downward price pressure on the Hungarian market in future because the marginal cost of power produced by Paks II is relatively low cost compared to the alternative OCGT and CCGT capacity that would otherwise be constructed in NERA's view. However, the NERA study has demonstrated that Paks II will remain a price taker, and prices in Hungary will continue to be set at higher levels by other plants. Therefore imports to Hungary will continue to be profitable.
- (370) The Commission has taken into account the submissions of Hungary regarding Paks II's possible effects in a wider market context. As it is explained in recital 112, NERA's assessment on the immediate neighbouring markets with which Hungary is currently market-coupled (Hungary + Slovakia + Romania) shows that the combined market shares of MVM Group and Paks II in the coupled market of Hungary + Slovakia + Romania would not exceed 20 % (see Figure 10 of recital 112).
- (371) As regards other neighbouring markets, the effects of the new Paks II are expected to be less significant due to the lack of market coupling with those price zones as well as the more limited (existing and planned) interconnection capacities towards those Member States (see Tables 3 and 4).

*(c) The potential effects of the parallel operation of Paks NPP and Paks II*

- (372) As explained in recitals 98-99 as well as in recitals 241-244 the construction of nuclear power plants is prone to delays for several reasons which increase construction times. The Commission acknowledges that there is already a significant delay in the implementation of the project compared to the original schedule, [...]. Additionally, as it is visible from Table 3 in recital 99, the technology offered by JSC NIAEP suffers an average of 2 years in delays in Russia, the home market of the contractor, where it has built the majority of its plants. These delays are significantly higher when the project is carried out outside Russia (in India, up to 7 years). Hungary submits that Paks II is expected to be the first nuclear power plant with VVER III+ technology commissioned in the EU, where the highest

nuclear safety requirements shall be fulfilled and the technically non-exempted part of the project shall be procured in line with EU procurement requirements. It is reasonably expected that this might cause additional delays. Therefore, in the Commission's view, the length of the originally identified 6 years parallel operation period of all four units of Paks NPP and both units of Paks II is expected to decrease significantly. In addition, a certain overlap of the operation of the existing and the new units — realistically rather limited in time for the reasons just set out, while creating an obvious impact on the domestic market, may be considered proportionate in view of the objectives of security of supply and the need to carefully prepare the decommissioning of the units of Paks NPP, taking into account that the nuclear generation capacities constitute more than 50 % of the domestic electricity generation in Hungary.

- (373) In any event, the Commission recalls the findings of the NERA Study (see in particular Figure 7 of recital 108) which shows that even during the parallel operation of Paks NPP and Paks II (between 2025 and 2037) the expected growing national peak demand will not be solely satisfied from domestic power plants as the additional renewable and gas capacities' overall power output together with those of nuclear will remain below the projected domestic demand (indicated with a black line in Figure 7). The study considers that this is mainly because Hungary is currently in a supply deficit and must import significant amounts of electricity. NERA explains that this deficit is identified to widen further between 2015 and 2025 as electricity demand in Hungary is expected to grow significantly until 2040 and Hungary's second largest constantly functioning power plant (Mátra Power Plant — see Figures 1 and 2 in recital 43) is expected to close between 2025 and 2030, as envisaged by the TSO's study (see recital 20).
- (374) Consequently the system will require domestic or imports capacities additional to the mentioned nuclear, renewable and gas fired ones to meet the domestic demand as well as to ensure system stability against expected capacity shortages. Additional capacities are also required for the mandatory reserve creation prescribed by ENTSO-E (see recital 50).
- (375) In addition, the Commission recalls that, as explained in recital 105, Hungary's already high level of interconnection with neighbouring countries will continue to increase as a result of new interconnectors which will become operational between 2016 and 2021 between Slovakia (2 × 400 kV and 1 × 400 kV) and Slovenia (1 × 400 kV), i.e. long before the two new units of Paks II will have come online. The Commission considers that these new interconnectors referred to by Hungary are likely to improve the availability of cross-border commercial flows, in particular those from imports.
- (376) As described in recital 369, the Commission also took into account the findings of the NERA Study according to which nuclear technology is expected to remain a price taker rather than a price maker even during the overlapping operating period of Paks NPP and Paks II when the Probability of nuclear being the price setting technology will stay below 5 % in all hours (see Figure 11 of recital 113).

#### 5.3.8.3. *Wholesale market liquidity risk*

- (377) As seen in Section 2.6, the most common transactions of the Hungarian wholesale power sector are concluded via bilateral PPAs and the HUPX has not yet triggered an adequate level of liquidity. The Commission had initial doubts insofar as, in a scenario where a dominant supplier (MVM Partner) and a significant amount of new generation capacity (Paks II) are owned by the same entity (Hungarian State), markets could become less liquid as the players involved could limit the number of supply offers available in the market.
- (378) The Commission also considered that depending on the way the electricity produced by the new reactors is sold on the market, liquidity could be significantly affected and the costs borne by downstream rivals may be increased by restricting their competitive access to an important input (input foreclosure). This could happen if the electricity produced by Paks II would be sold primarily by way of long term contracts to only certain suppliers, thus moving Paks II's market power in the generation market to the retail market.
- (379) The exclusion of links of Paks II with State-owned operators in the retail market, as explained in recital 353 helped to address some of the Commission's concerns.

- (380) The Commission notes that Hungary confirmed, as explained in recital 118, that Paks II's power output trading strategy would be an arms-length commercial profit-optimising strategy which is carried out through commercial trading arrangements concluded through bids cleared on a transparent trading platform or exchange.
- (381) In particular, Hungary confirmed that such a trading strategy (excluding its own consumption of Paks II) would be devised as follows:
- (a) Paks II would sell at least 30 % of its total electricity output on the day ahead, intraday and future markets of the HUPX. Other similar electricity exchanges may be used subject to the agreement or consent of the Commission's services which is to be granted or refused within 2 weeks from the request by the Hungarian authorities.
  - (b) The rest of Paks II's total electricity output shall be sold by Paks II on objective, transparent and non-discriminatory terms by way of auctions. The conditions for such auctions shall be determined by the Hungarian energy regulator, similar to the auctioning requirements imposed on MVM Partner. The Hungarian energy regulator shall also oversee the conduct of those auctions.
- (382) The Commission also notes that Hungary would ensure that offers and bids are equally available to all licensed or registered traders on the same market terms in the auction platform to be operated by Paks II and that the bid clearing system of that platform is verifiable and transparent. No restrictions would be imposed on the final use for the electricity purchased.
- (383) Therefore, it has been ensured that the electricity produced by Paks II will be available on the wholesale market for all market players in a transparent manner and that there is no risk that the electricity produced by Paks II would be monopolised in long term contracts posing a risk to market liquidity.
- (384) Consequently, the Commission considers that, as the measure is currently designed market liquidity risks which could possibly arise are minor.

#### **5.3.8.4. Conclusion on competition distortions and overall balancing**

- (385) Following a careful assessment in Section 5.3 of this Decision, the Commission acknowledges that the measure is aimed at promoting new investments in nuclear energy, therefore it pursues an objective of common interest enshrined in the Euratom Treaty, while it also contributes to security of supply.
- (386) The aid will be granted in a proportionate way. Hungary will ensure that Paks II compensates the State for the new generating units and Paks II will not retain extra profits beyond what is strictly necessary to ensure its economic operation and viability. The Commission also notes that the profits generated by the beneficiary will not be used to reinvest in Paks II's capacity extension or to purchase or construct new generating capacities without State aid approval.
- (387) The Commission also examined whether the measure could serve as a barrier to entry for other types of generating capacities, especially in the limited period of the parallel operation of Paks NPP and Paks II. It is of the view that any barrier to entry is limited due to the fact that the gap in future overall installed capacity identified by the TSO would permit the penetration of other generating technologies (both renewable and non-low-carbon sources) irrespective of whether Paks II is constructed or not.
- (388) The Commission also examined the possible cross-border effects of the measure, however Paks II's similar size to the currently running four units of Paks NPP is not expected to play a strong cross-border role, even in view of the good interconnection level of Hungary as Hungary will remain to be a net importer with one of the highest prices in the region. In addition to the expected remaining import/export deficit in Hungary, the Commission considers that Paks II's effects on electricity price regions falling outside those directly neighbouring Hungary would be limited due to the distance and network constraints which render electricity generated in Hungary even more expensive for more distant regions.
- (389) The Commission also took note of the finding that during the parallel operation of Paks NPP and Paks II, which is expected to be shorter than originally envisaged, the expected growing national peak demand will not be solely satisfied from domestic power plants.

- (390) The Commission reiterates that other possible market distortions, such as the increase of possible market concentration as well as the lack of market liquidity have been minimised on account of the confirmations made by Hungary on 28 July 2016.
- (391) Therefore the Commission concludes that all the potential distortions of competition are limited and offset by the identified common objective pursued to be attained in a proportionate manner, in particular taking into account the confirmations made by Hungary on 28 July 2016.

## 6. CONCLUSION

- (392) In light of those considerations, the Commission finds that the measure notified by Hungary involves State aid which, as amended by Hungary on 28 July 2016, is compatible with the internal market pursuant to Art 107(3)(c) TFEU,

HAS ADOPTED THIS DECISION:

### *Article 1*

The measure which Hungary is planning to implement to financially support the development of two new nuclear reactors that are fully financed by the Hungarian State for the benefit of the entity MVM Paks II Nuclear Power Plant Development Private Company Limited by Shares ('Paks II') which would own and operate those nuclear reactors, amounts to State aid.

### *Article 2*

The measure is compatible with the internal market, subject to the conditions set out in Article 3.

### *Article 3*

Hungary shall ensure that Paks II shall use any of the profits deriving from the activity of units 5 and 6 of Paks II nuclear power plant ('Paks II NPP') for only the following purposes:

- (a) The Paks II project ('the project'), which is defined as the development, financing, construction, commissioning, operation and maintenance, refurbishment, waste management and decommissioning of two new nuclear power units with VVER reactors 5 and 6 at Paks II NPP, Hungary. Profits shall not be used to fund investments in activities that are not within the scope of that defined project.
- (b) The payment of the profits to the Hungarian State (for example by way of dividends).

Hungary shall ensure that Paks II refrains from (re-)investing in the extension of Paks II's own capacity or lifetime and the installation of additional generation capacities, other than those of reactors 5 and 6 of Paks II NPP. Should such new investment be made, they would be subject to separate State aid approval.

Hungary shall ensure that Paks II's power output trading strategy will be an arms-length commercial profit-optimising strategy which is carried out through commercial trading arrangements concluded through bids cleared on a transparent trading platform or exchange. The strategy for the trading of Paks II's power output (excluding own consumption of Paks II) shall be as follows:

Tier 1. Paks II shall sell at least 30 % of its total electricity output on the day ahead, intraday and future markets of the Hungarian Power Exchange (HUPX). Other similar electricity exchanges can be used subject to the agreement or consent of the Commission's services to be granted or refused within 2 weeks from the request by the Hungarian authorities.

Tier 2. The rest of Paks II's total electricity output shall be sold by Paks II on objective, transparent and non-discriminatory terms by way of auctions. The conditions for such auctions shall be determined by the Hungarian energy regulator, similar to the auctioning requirements imposed on MVM Partner (decision 741/2011 of the Hungarian Regulator). The Hungarian energy regulator shall also oversee the conduct of these auctions.

Hungary shall ensure that the auction platform for Tier 2 is operated by Paks II and that offers and bids are equally available to all licensed or registered traders on the same market terms. The bid clearing system shall be verifiable and transparent. No restrictions shall be imposed on the final use of the electricity purchased.

In addition, Hungary shall undertake that Paks II, its successors and affiliates are fully legally and structurally separated and subject to independent power of decision within paragraphs 52 and 53 of the Merger Jurisdictional Notice <sup>(150)</sup> and shall be maintained, managed and operated independent and unconnected from the MVM Group and all of its businesses, its successors and affiliates and other State controlled companies active in the generation, wholesale or retail of energy.

*Article 4*

Hungary shall submit to the Commission annual reports on the fulfilment of the undertakings referred to in Article 3. The first report shall be submitted 1 month after the closing date of the first financial year of commercial operation of Paks II.

Done at Brussels, 6 March 2017.

*For the Commission*

Margrethe VESTAGER

*Member of the Commission*

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<sup>(150)</sup> Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (OJ C 95, 16.4.2008, p. 1).



**COMMISSION DELEGATED DECISION (EU) 2017/2113**  
**of 11 September 2017**  
**amending Annex V to Directive 2005/36/EC of the European Parliament and of the Council as**  
**regards evidence of formal qualifications and the titles of training courses**  
*(notified under document C(2017) 6054)*  
**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications <sup>(1)</sup>, and in particular Article 21a(4) thereof,

Whereas:

- (1) Annex V to Directive 2005/36/EC contains lists of the evidence of formal qualifications of doctors of medicine, nurses responsible for general care, dental practitioners, veterinary surgeons, midwives, pharmacists and architects.
- (2) Commission Delegated Decision (EU) 2016/790 <sup>(2)</sup> updated Annex V to Directive 2005/36/EC following notifications from Member States of amendments to their legislative, regulatory and administrative provisions on the issuing of evidence of the formal qualifications in question. Since the adoption of that Decision, several Member States have notified the Commission of further such amendments. The Commission considers that the amended provisions are in conformity with the conditions set out in Title III, Chapter III of the Directive. Annex V to the Directive should therefore be updated.
- (3) For reasons of clarity and legal certainty, all relevant points of Annex V to Directive 2005/36/EC on the evidence of formal qualifications and the titles of training courses should be replaced.
- (4) Directive 2005/36/EC should therefore be amended accordingly,

HAS ADOPTED THIS DECISION:

*Article 1*

Annex V to Directive 2005/36/EC is amended in accordance with the Annex to this Decision.

*Article 2*

This Decision is addressed to the Member States.

Done at Brussels, 11 September 2017.

*For the Commission*

Elżbieta BIENKOWSKA

*Member of the Commission*

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<sup>(1)</sup> OJ L 255, 30.9.2005, p. 22.

<sup>(2)</sup> Commission Delegated Decision (EU) 2016/790 of 13 January 2016 amending Annex V to Directive 2005/36/EC of the European Parliament and of the Council as regards the evidence of formal qualifications and the titles of training courses (OJ L 134, 24.5.2016, p. 135).

## ANNEX

Annex V to Directive 2005/36/EC is amended as follows:

1. Points 5.1.1 to 5.1.4 are replaced by the following:

*‘5.1.1. Evidence of formal qualifications in basic medical training*

| Country                     | Evidence of formal qualifications  | Body awarding the qualifications  | Certificate accompanying the qualifications  | Reference date |
|-----------------------------|--|---|--|----------------|
| België/Belgique/<br>Belgien | Diploma van arts/Diplôme de docteur en médecine<br><br>Diplôme de “médecin”/Master in de geneeskunde   | — Les universités/De universiteiten<br><br>— Le Jury compétent d’enseignement de la Communauté française/De bevoegde Examencommissie van de Vlaamse Gemeenschap |  | 20.12.1976     |
| България                    | Диплома за висше образование на образователно-квалификационна степен “магистър” по Медицина и професионална квалификация “Магистър-лекар”  | Университет   |  | 1.1.2007       |
| Česká republika             | Diplom o ukončení studia ve studijním programu všeobecné lékařství (doktor medicíny, MUDr.)  | Lékařská fakulta univerzity v České republice   |  | 1.5.2004       |
| Danmark                     | Bevis for kandidatuddannelsen i medicin (cand.med.)<br><br>Bevis for bestået lægevidenskabelig embedseksamen (cand.med.)   | Universitet<br><br>Styrelsen for Patientsikkerhed<br><br>Medicinsk universitetsfakultet   | — Autorisation som læge, udstedt af Sundhedsstyrelsen og<br><br>— Tilladelse til selvstændigt virke som læge (dokumentation for gennemført praktisk uddannelse), udstedt af Sundhedsstyrelsen<br><br>— Autorisation som læge og tilladelse til selvstændigt virke som læge | 20.12.1976     |
| Deutschland                 | — Zeugnis über die Ärztliche Prüfung<br><br>— Zeugnis über die Ärztliche Staatsprüfung und Zeugnis über die Vorbereitungszeit als Medizinalassistent, soweit diese nach den deutschen Rechtsvorschriften noch für den Abschluss der ärztlichen Ausbildung vorgesehen war | Zuständige Behörden   |  | 20.12.1976     |

| Country    | Evidence of formal qualifications  | Body awarding the qualifications   | Certificate accompanying the qualifications   | Reference date |
|------------|--|--|---|----------------|
| Eesti      | Arstikraad<br>Degree in Medicine (MD)<br>Diplom arstiteaduse õppekava läbimise kohta   | Tartu Ülikool  |   | 1.5.2004       |
| Ελλάς      | Πτυχίο Ιατρικής  | — Ιατρική Σχολή Πανεπιστημίου,<br>— Σχολή Επιστημών Υγείας, Τμήμα Ιατρικής Πανεπιστημίου |   | 1.1.1981       |
| España     | Título de Licenciado en Medicina y Cirugía<br>Título de Licenciado en Medicina<br>Título de Graduado/a en Medicina   | — Ministerio de Educación y Cultura<br>— El rector de una Universidad                    |   | 1.1.1986       |
| France     | Diplôme de fin de deuxième cycle des études médicales  | Universités  |   | 20.12.1976     |
| Hrvatska   | Diploma “doktor medicine/doktorica medicine”   | Medicinski fakulteti sveučilišta u Republici Hrvatskoj                                   |   | 1.7.2013       |
| Ireland    | Primary qualification  | Competent examining body   | Certificate of experience   | 20.12.1976     |
| Italia     | Diploma di laurea in medicina e chirurgia  | Università   | Diploma di abilitazione all'esercizio della medicina e chirurgia  | 20.12.1976     |
| Κύπρος     | Πιστοποιητικό Εγγραφής Ιατρού  | Ιατρικό Συμβούλιο  |   | 1.5.2004       |
| Latvija    | ārsta diploms  | Universitātes tipa augstskola  |   | 1.5.2004       |
| Lietuva    | 1. Aukštojo mokslo diplomas, nurodantis suteiktą gydytojo kvalifikaciją<br>2. Magistro diplomas (medicinos magistro kvalifikacinis laipsnis ir gydytojo kvalifikacija) | Universitetas  | 1. Internatūros pažymėjimas, nurodantis suteiktą medicinos gydytojo profesinę kvalifikaciją<br>2. Internatūros pažymėjimas (medicinos gydytojo profesinė kvalifikacija) | 1.5.2004       |
| Luxembourg | Diplôme d'Etat de docteur en médecine, chirurgie et accouchements  | Jury d'examen d'Etat   | Certificat de stage   | 20.12.1976     |

| Country       | Evidence of formal qualifications   | Body awarding the qualifications                                      | Certificate accompanying the qualifications   | Reference date |
|---------------|---|---|---|----------------|
| Magyarország  | Okleveles orvosdoktor oklevél (dr. med)   | Egyetem   |   | 1.5.2004       |
| Malta         | Lawrja ta' Tabib tal-Medicina u l-Kirurgija   | Universita' ta' Malta   | Ċertifikat ta' reġistrazzjoni mahruġ mill-Kunsill Mediku  | 1.5.2004       |
| Nederland     | Getuigschrift van met goed gevolg afgelegd artsexamen   | Faculteit Geneeskunde   |   | 20.12.1976     |
| Österreich    | Urkunde über die Verleihung des akademischen Grades Doktor der gesamten Heilkunde (bzw. Doctor medicinae universae, Dr.med.univ.) | Medizinische Fakultät einer Universität, bzw Medizinische Universität |   | 1.1.1994       |
| Polska        | Dyplom ukończenia studiów wyższych na kierunku lekarskim z tytułem "lekarza"  | szkoły wyższe   | Świadectwo złożenia Lekarskiego Egzaminu Państwowego <sup>(1)</sup> <sup>(3)</sup><br>/Świadectwo złożenia Lekarskiego Egzaminu Końcowego <sup>(2)</sup> <sup>(3)</sup> | 1.5.2004       |
| Portugal      | Carta de Curso de licenciatura em medicina<br>Certificado de mestrado integrado em medicina                                       | Universidades   | Certificado emitido pela Ordem dos Médicos  | 1.1.1986       |
| România       | Diplomă de licență de doctor medic<br>Diploma de licență și master <sup>(4)</sup>   | Universități<br>Ministerul Educației Naționale <sup>(4)</sup>         |   | 1.1.2007       |
| Slovenija     | Diploma, s katero se podeljuje strokovni naslov "doktor medicine/doktorica medicine"  | Univerza  | Potrnilo o Opravljenem Strokovnem Izpitu za Poklic Zdravnik/Zdravnica   | 1.5.2004       |
| Slovensko     | DIPLOM všeobecné lékařstvo doktor všeobecného lékařstva ("MUDr.")   | Univerzita  |   | 1.5.2004       |
| Suomi/Finland | Lääketieteen lisensiaatin tutkinto/Medicine licentiatexamen   | Yliopisto   |   | 1.1.1994       |
| Sverige       | Läkarexamen   | Universitet eller högskola  | Bevis om legitimation som läkare, utfärdat av Socialstyrelsen   | 1.1.1994       |

| Country        | Evidence of formal qualifications | Body awarding the qualifications | Certificate accompanying the qualifications | Reference date |
|----------------|-----------------------------------|----------------------------------|---|----------------|
| United Kingdom | Primary qualification             | Competent examining body         | Certificate of experience                   | 20.12.1976     |

<sup>(1)</sup> Until 2012.

<sup>(2)</sup> As of 2013.

<sup>(3)</sup> Until 1 October 2017, the evidence of formal qualifications should also be accompanied by a certificate of completion of a postgraduate internship ("staż podyplomowy").

<sup>(4)</sup> As of 2011.

#### 5.1.2. Evidence of formal qualifications of specialised doctors

| Country                    | Evidence of formal qualifications   | Body awarding the qualifications                                       | Reference date |
|----------------------------|---|--|----------------|
| België/Belgique/<br>Belgie | Bijzondere beroepstitel van geneesheer-specialist/Titre professionnel particulier de médecin spécialiste  | Minister bevoegd voor Volksgezondheid/Ministre de la Santé publique    | 20.12.1976     |
| България                   | Свидетелство за призната специалност  | Университет  | 1.1.2007       |
| Česká republika            | Diplom o specializaci   | Ministerstvo zdravotnictví   | 1.5.2004       |
| Danmark                    | Bevis for tilladelse til at betegne sig som speciallæge   | Sundhedsstyrelsen<br>Styrelsen for Patientsikkerhed                    | 20.12.1976     |
| Deutschland                | Fachärztliche Anerkennung   | Landesärztekammer  | 20.12.1976     |
| Eesti                      | Residentuuri lõpetamist tõendav tunnistus<br>Residentuuri lõputunnistus eriarstiabi erialal   | Tartu Ülikool  | 1.5.2004       |
| Ελλάς                      | Τίτλος Ιατρικής Ειδικότητας   | 1. Περιφέρεια<br>2. Νομαρχιακή Αυτοδιοίκηση<br>3. Νομαρχία             | 1.1.1981       |
| España                     | Título de Especialista  | Ministerio de Educación y Cultura                                      | 1.1.1986       |
| France                     | 1. Certificat d'études spéciales de médecine accompagné du diplôme d'Etat de docteur en médecine<br>2. Attestation de médecin spécialiste qualifié accompagnée du diplôme d'Etat de docteur en médecine<br>3. Diplôme d'études spécialisées ou diplôme d'études spécialisées complémentaires qualifiant de médecine accompagné du diplôme d'Etat de docteur en médecine | 1. Universités<br>2. Conseil de l'Ordre des médecins<br>3. Universités | 20.12.1976     |
| Hrvatska                   | Diploma o specijalističkom usavršavanju   | Ministarstvo nadležno za zdravstvo                                     | 1.7.2013       |

| Country      | Evidence of formal qualifications   | Body awarding the qualifications  | Reference date |
|--------------|---|---|----------------|
| Ireland      | Certificate of Specialist doctor  | Competent authority   | 20.12.1976     |
| Italia       | Diploma di medico specialista   | Università  | 20.12.1976     |
| Κύπρος       | Πιστοποιητικό Αναγνώρισης Ειδικότητας   | Ιατρικό Συμβούλιο   | 1.5.2004       |
| Latvija      | “Sertifikāts” – kompetentu iestāžu izsniegts dokuments, kas apliecina, ka persona ir nokārtojusi sertifikācijas eksāmenu specialitātē                                       | Latvijas Ārstu biedrība<br>Latvijas Ārstniecības personu profesionālo organizāciju savienība  | 1.5.2004       |
| Lietuva      | 1. Rezidentūros pažymėjimas, nurodantis suteiktą gydytojo specialisto profesinę kvalifikaciją<br>2. Rezidentūros pažymėjimas (gydytojo specialisto profesinė kvalifikacija) | Universitetas   | 1.5.2004       |
| Luxembourg   | Certificat de médecin spécialiste   | Ministre de la Santé publique   | 20.12.1976     |
| Magyarország | Szakorvosi bizonyítvány   | Nemzeti Vizsgabizottság   | 1.5.2004       |
| Malta        | Ċertifikat ta' Speċjalista Mediki   | Kumitat ta' Approvazzjoni dwar Speċjalisti  | 1.5.2004       |
| Nederland    | Bewijs van inschrijving in een Specialistenregister<br><br>Diploma geneeskundig specialist  | — Medische Specialisten Registratie Commissie (MSRC) van de Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst<br><br>— Sociaal-Geneskundigen Registratie Commissie (SGRC) van de Koninklijke Nederlandsche Maatschappij tot Bevordering der Geneeskunst<br><br>— Registratiecommissie Geneeskundig Specialisten (RGS) van de Koninklijke Nederlandsche Maatschappij tot Bevordering der Geneeskunst <sup>(1)</sup> | 20.12.1976     |
| Österreich   | Facharzt Diplom   | Österreichische Ärztekammer   | 1.1.1994       |
| Polska       | Dyplom uzyskania tytułu specjalisty   | Centrum Egzaminów Medycznych  | 1.5.2004       |
| Portugal     | Titulo de especialista  | Ordem dos Médicos   | 1.1.1986       |



| Country        | Evidence of formal qualifications                                 | Body awarding the qualifications   | Reference date             |
|----------------|---|--|----------------------------|
| România        | Certificat de medic specialist                                    | Ministerul Sănătății   | 1.1.2007                   |
| Slovenija      | Potrđilo o opravljenem specialističnem izpitu                     | 1. Ministrstvo za zdravje<br>2. Zdravniška zbornica Slovenije  | 1.5.2004                   |
| Slovensko      | Diplom o špecializácii  | 1. Slovenská zdravotnícka univerzita<br>2. Univerzita Komenského v Bratislave<br>3. Univerzita Pavla Jozefa Šafárika v Košiciach | 1.5.2004                   |
| Suomi/Finland  | Erikoinlääkärin tutkinto/Specialläkar-examen                      | Yliopisto  | 1.1.1994                   |
| Sverige        | Bevis om specialkompetens som läkare, utfärdat av Socialstyrelsen | Socialstyrelsen  | 1.1.1994                   |
| United Kingdom | Certificate of Completion of training                             | Postgraduate Medical Education and Training Board<br><br>General Medical Council   | 20.12.1976<br><br>1.4.2010 |

<sup>(1)</sup> As of January 2013.

#### 5.1.3. Titles of training courses in specialised medicine

|                         | Anaesthetics                                 | General surgery                         |
|-------------------------|--|---|
|                         | Minimum period of training: 3 years          | Minimum period of training: 5 years     |
| Country                 | Title  | Title                                   |
| Belgique/België/Belgien | Anesthésie-réanimation/Anesthesie-reanimatie | Chirurgie/Heelkunde                     |
| България                | Анестезиология и интензивно лечение          | Хирургия                                |
| Česká republika         | Anesteziologie a intenzivní medicína         | Chirurgie                               |
| Danmark                 | Anæstesiologi                                | Kirurgi                                 |
| Deutschland             | Anästhesiologie                              | (Allgemeine) Chirurgie                  |
| Eesti                   | Anestesioloogia                              | Üldkirurgia                             |
| Ελλάς                   | Αναισθησιολογία                              | Χειρουργική                             |
| España                  | Anestesiología y Reanimación                 | Cirugía general y del aparato digestivo |

|               | Anaesthetics  | General surgery  |
|---------------|---|--|
|               | Minimum period of training: 3 years   | Minimum period of training: 5 years                                      |
| Country       | Title   | Title  |
| France        | Anesthésie-réanimation  | Chirurgie générale   |
| Hrvatska      | Anesteziologija, reanimatologija i intenzivna medicina  | Opća kirurgija   |
| Ireland       | Anaesthesia   | General surgery  |
| Italia        | Anestesia, rianimazione e terapia intensiva<br>Anestesia, rianimazione, terapia intensiva e del dolore <sup>(2)</sup> | Chirurgia generale   |
| Κύπρος        | Αναισθησιολογία   | Γενική Χειρουργική   |
| Latvija       | Anestezioloģija un reanimatoloģija  | Ķirurģija  |
| Lietuva       | Anesteziologija reanimatologija   | Chirurgija   |
| Luxembourg    | Anesthésie-réanimation  | Chirurgie générale   |
| Magyarország  | Aneszteziológia és intenzív terápia   | Sebészet   |
| Malta         | Anesteżija u Kura Intensiva   | Kirurġija Ġenerali   |
| Nederland     | Anesthesiologie   | Heelkunde  |
| Österreich    | Anästhesiologie und Intensivmedizin   | — Chirurgie<br>— Allgemeinchirurgie und Viszeralchirurgie <sup>(1)</sup> |
| Polska        | Anestezjologia i intensywna terapia   | Chirurgia ogólna   |
| Portugal      | Anestesiologia  | Cirurgia geral   |
| România       | Anestezie și terapie intensivă  | Chirurgie generală   |
| Slovenija     | Anesteziologija, reanimatologija in operativna intenzivna medicina  | Splošna kirurgija  |
| Slovensko     | Anestéziológia a intenzívna medicína  | Chirurgia  |
| Suomi/Finland | Anestesiologia ja tehohoito/Anestesiologi och intensivvård  | Yleiskirurgia/Allmän kirurgi   |

|                |                                     |                                     |
|----------------|-------------------------------------|-------------------------------------|
|                | Anaesthetics                        | General surgery                     |
|                | Minimum period of training: 3 years | Minimum period of training: 5 years |
| Country        | Title                               | Title                               |
| Sverige        | Anestesi och intensivvård           | Kirurgi                             |
| United Kingdom | Anaesthetics                        | General surgery                     |

<sup>(1)</sup> As of June 2015.

<sup>(2)</sup> As of February 2015.

|                         |                                     |  |
|-------------------------|-------------------------------------|--|
|                         | Neurological surgery                | Obstetrics and Gynaecology                           |
|                         | Minimum period of training: 5 years | Minimum period of training: 4 years                  |
| Country                 | Title                               | Title  |
| Belgique/België/Belgien | Neurochirurgie                      | Gynécologie — obstétrique/Gynaecologie — verloskunde |
| България                | Неврохирургия                       | Акушерство и гинекология                             |
| Česká republika         | Neurochirurgie                      | Gynekologie a porodnictví                            |
| Danmark                 | Neurokirurgi                        | Gynækologi og obstetrik                              |
| Deutschland             | Neurochirurgie                      | Frauenheilkunde und Geburtshilfe                     |
| Eesti                   | Neurokirurgia                       | Sünnitusabi ja günekoloogia                          |
| Ελλάς                   | Νευροχειρουργική                    | Μαιευτική-Γυναικολογία                               |
| España                  | Neurocirugía                        | Obstetricia y ginecología                            |
| France                  | Neurochirurgie                      | Gynécologie — obstétrique                            |
| Hrvatska                | Neurokirurgija                      | Ginekologija i opstetricija                          |
| Ireland                 | Neurosurgery                        | Obstetrics and gynaecology                           |
| Italia                  | Neurochirurgia                      | Ginecologia e ostetricia                             |
| Κύπρος                  | Νευροχειρουργική                    | Μαιευτική — Γυναικολογία                             |
| Latvija                 | Neiroķirurgija                      | Ginekoloģija un dzemdniecība                         |
| Lietuva                 | Neurochirurgija                     | Akušerija ginekologija                               |
| Luxembourg              | Neurochirurgie                      | Gynécologie — obstétrique                            |
| Magyarország            | Idegsebészet                        | Szülészet-nőgyógyászat                               |

|                         |  |  |
|-------------------------|--|--|
|                         | Neurological surgery                   | Obstetrics and Gynaecology                                     |
|                         | Minimum period of training: 5 years    | Minimum period of training: 4 years                            |
| Country                 | Title                                  | Title  |
| Malta                   | Newrokirurgija                         | Ostetričja u Ġinekologija                                      |
| Nederland               | Neurochirurgie                         | Obstetrie en Gynaecologie                                      |
| Österreich              | Neurochirurgie                         | Frauenheilkunde und Geburtshilfe                               |
| Polska                  | Neurochirurgia                         | Położnictwo i ginekologia                                      |
| Portugal                | Neurocirurgia                          | Ginecologia e obstetrícia                                      |
| România                 | Neurochirurgie                         | Obstetrică-ginecologie   |
| Slovenija               | Nevrokirurgija                         | Ginekologija in porodništvo                                    |
| Slovensko               | Neurochirurgia                         | Gynekológia a pôrodníctvo                                      |
| Suomi/Finland           | Neurokirurgia/Neurokirurgi             | Naistentaudit ja synnytykset/Kvinnosjukdomar och förlossningar |
| Sverige                 | Neurokirurgi                           | Obstetrik och gynekologi                                       |
| United Kingdom          | Neurosurgery                           | Obstetrics and gynaecology                                     |
|                         | General (internal) medicine            | Ophthalmology  |
|                         | Minimum period of training: 5 years    | Minimum period of training: 3 years                            |
| Country                 | Title                                  | Title  |
| Belgique/België/Belgien | Médecine interne/Inwendige geneeskunde | Ophthalmologie/Oftalmologie                                    |
| България                | Вътрешни болести                       | Очни болести   |
| Česká republika         | Vnitřní lékařství                      | Oftalmologie   |
| Danmark                 |  | Oftalmologi  |
| Deutschland             | Innere Medizin                         | Augenheilkunde   |
| Eesti                   | Sisehaigused                           | Oftalmoloogia  |
| Ελλάς                   | Παθολογία                              | Οφθαλμολογία   |
| España                  | Medicina interna                       | Oftalmología   |
| France                  | Médecine interne                       | Ophthalmologie   |
| Hrvatska                | Opća interna medicina                  | Oftalmologija i optometrija                                    |

|                | General (internal) medicine         | Ophthalmology                                      |
|----------------|-------------------------------------|--|
|                | Minimum period of training: 5 years | Minimum period of training: 3 years                |
| Country        | Title                               | Title  |
| Ireland        | General (Internal) Medicine         | Ophthalmic surgery<br>Ophthalmology <sup>(1)</sup> |
| Italia         | Medicina interna                    | Oftalmologia                                       |
| Κύπρος         | Παθολογία                           | Οφθαλμολογία                                       |
| Latvija        | Internā medicīna                    | Oftalmoloģija                                      |
| Lietuva        | Vidaus ligos                        | Oftalmologija                                      |
| Luxembourg     | Médecine interne                    | Ophthalmologie                                     |
| Magyarország   | Belgyógyászat                       | Szemészet  |
| Malta          | Medicina Interna                    | Oftalmoloġija                                      |
| Nederland      | Interne geneeskunde                 | Oogheelkunde                                       |
| Österreich     | Innere Medizin                      | Augenheilkunde und Optometrie                      |
| Polska         | Choroby wewnętrzne                  | Okulistyka   |
| Portugal       | Medicina interna                    | Oftalmologia                                       |
| România        | Medicină internă                    | Oftalmologie                                       |
| Slovenija      | Interna medicina                    | Oftalmologija                                      |
| Slovensko      | Vnútorné lekárstvo                  | Oftalmológia                                       |
| Suomi/Finland  | Sisätaudit/Inre medicin             | Silmätaudit/Ögonsjukdomar                          |
| Sverige        | Internmedicin                       | Ögonsjukdomar (oftalmologi)                        |
| United Kingdom | General (internal) medicine         | Ophthalmology                                      |

<sup>(1)</sup> As of 1991/1992.

|                         | Otorhinolaryngology                         | Paediatrics                         |
|-------------------------|---|-------------------------------------|
|                         | Minimum period of training: 3 years         | Minimum period of training: 4 years |
| Country                 | Title                                       | Title                               |
| Belgique/België/Belgien | Oto-rhino-laryngologie/Otorhinolaryngologie | Pédiatrie/Pediatric                 |

|                 | Otorhinolaryngology   | Paediatrics                         |
|-----------------|---|-------------------------------------|
|                 | Minimum period of training: 3 years   | Minimum period of training: 4 years |
| Country         | Title   | Title                               |
| България        | Ушно-носно-гърлени болести  | Педиатрия                           |
| Česká republika | Otorinolaryngologie   | Dětské lékařství                    |
| Danmark         | Oto-rhino-laryngologi   | Pædiatri                            |
| Deutschland     | Hals-Nasen-Ohrenheilkunde   | Kinder- und Jugendmedizin           |
| Eesti           | Otorinolarüngoloogia  | Pediaatria                          |
| Ελλάς           | Ωτορινολαρυγγολογία   | Παιδιατρική                         |
| España          | Otorrinolaringología  | Pediatría y sus áreas específicas   |
| France          | Oto-rhino-laryngologie et chirurgie cervico-faciale                                       | Pédiatrie                           |
| Hrvatska        | Otorinolarinologija   | Pedijatrija                         |
| Ireland         | Otolaryngology  | Paediatrics                         |
| Italia          | Otorinolaringoiatria  | Pediatria                           |
| Κύπρος          | Ωτορινολαρυγγολογία   | Παιδιατρική                         |
| Latvija         | Otolaringoloģija  | Pedijatrija                         |
| Lietuva         | Otorinolarinologija   | Vaikų ligos                         |
| Luxembourg      | Oto-rhino-laryngologie  | Pédiatrie                           |
| Magyarország    | Fül-orr-gégegyógyászat  | Csecsemő- és gyermekgyógyászat      |
| Malta           | Otorinolarinologija   | Pedjatrija                          |
| Nederland       | Keel-, neus- en oorheelkunde  | Kindergeneeskunde                   |
| Österreich      | — Hals-, Nasen- und Ohrenkrankheiten<br>— Hals-, Nasen- und Ohrenheilkunde <sup>(1)</sup> | Kinder- und Jugendheilkunde         |
| Polska          | Otorynolaryngologia   | Pediatria                           |
| Portugal        | Otorrinolaringologia  | Pediatria                           |
| România         | Otorinolarinologie  | Pediatrie                           |
| Slovenija       | Otorinolarinologija   | Pedijatrija                         |



|                | Otorhinolaryngology   | Paediatrics                         |
|----------------|---|-------------------------------------|
|                | Minimum period of training: 3 years                         | Minimum period of training: 4 years |
| Country        | Title   | Title                               |
| Slovensko      | Otorinolaryngológia   | Pediatrica                          |
| Suomi/Finland  | Korva-, nenä- ja kurkkutaudit/Öron-, näs- och halssjukdomar | Lastentaudit/Barnsjukdomar          |
| Sverige        | Öron-, näs- och halssjukdomar (oto-rhinolaryngologi)        | Barn- och ungdomsmedicin            |
| United Kingdom | Otolaryngology  | Paediatrics                         |

(<sup>1</sup>) As of June 2015.

|                         | Respiratory medicine   | Urology                             |
|-------------------------|--|-------------------------------------|
|                         | Minimum period of training: 4 years                                | Minimum period of training: 5 years |
| Country                 | Title  | Title                               |
| Belgique/België/Belgien | Pneumologie  | Urologie                            |
| България                | Пневмология и фтизиатрия   | Урология                            |
| Česká republika         | Pneumologie a ftizeologie  | Urologie                            |
| Danmark                 | Intern medicin: langesygdomme                                      | Urologi                             |
| Deutschland             | — Pneumologie<br>— Innere Medizin und Pneumologie ( <sup>1</sup> ) | Urologie                            |
| Eesti                   | Pulmonoloogia  | Uroloogia                           |
| Ελλάς                   | Φυματιολογία- Πνευμονολογία  | Ουρολογία                           |
| España                  | Neumología   | Urología                            |
| France                  | Pneumologie  | Chirurgie urologique                |
| Hrvatska                | Pulmologija  | Urologija                           |
| Ireland                 | Respiratory medicine   | Urology                             |
| Italia                  | Malattie dell'apparato respiratorio                                | Urologia                            |
| Κύπρος                  | Πνευμονολογία — Φυματιολογία                                       | Ουρολογία                           |
| Latvija                 | Ftiziopneimonoloģija   | Uroloģija                           |
| Lietuva                 | Pulmonologija  | Urologija                           |

|                | Respiratory medicine   | Urology                             |
|----------------|--|-------------------------------------|
|                | Minimum period of training: 4 years                                    | Minimum period of training: 5 years |
| Country        | Title  | Title                               |
| Luxembourg     | Pneumologie  | Urologie                            |
| Magyarország   | Tüdőgyógyászat   | Urológia                            |
| Malta          | Mediċina Respiratorja  | Urologija                           |
| Nederland      | Longziekten en tuberculose   | Urologie                            |
| Österreich     | — Lungenkrankheiten<br>— Innere Medizin und Pneumologie <sup>(2)</sup> | Urologie                            |
| Polska         | Choroby płuc   | Urologia                            |
| Portugal       | Pneumologia  | Urologia                            |
| România        | Pneumologie  | Urologie                            |
| Slovenija      | Pnevmonologija   | Urologija                           |
| Slovensko      | Pneumológia a ftizeológia  | Urológia                            |
| Suomi/Finland  | Keuhkosairaudet ja allergologia/Lungsjukdomar och allergologi          | Urologia/Urologi                    |
| Sverige        | Lungsjukdomar (pneumologi)   | Urologi                             |
| United Kingdom | Respiratory medicine   | Urology                             |

<sup>(1)</sup> As of July 2011.

<sup>(2)</sup> As of June 2015.

|                         | Orthopaedics  | Pathological anatomy                         |
|-------------------------|---|--|
|                         | Minimum period of training: 5 years   | Minimum period of training: 4 years          |
| Country                 | Title   | Title  |
| Belgique/België/Belgien | Chirurgie orthopédique/Orthopedische heelkunde  | Anatomie pathologique/Pathologische anatomie |
| България                | Ортопедия и травматология   | Обща и клинична патология                    |
| Česká republika         | Ortopedie   | Patologie                                    |
| Danmark                 | Ortopædisk kirurgi  | Patologisk anatomi og cytology               |
| Deutschland             | — Orthopädie (und Unfallchirurgie)<br>— Orthopädie und Unfallchirurgie <sup>(1)</sup> | Pathologie                                   |

|               | Orthopaedics  | Pathological anatomy  |
|---------------|---|---|
|               | Minimum period of training: 5 years   | Minimum period of training: 4 years   |
| Country       | Title   | Title   |
| Eesti         | Ortopeedia  | Patoloogia  |
| Ελλάς         | Ορθοπαιδική   | Παθολογική Ανατομική  |
| España        | Cirugía ortopédica y traumatología  | Anatomía patológica   |
| France        | Chirurgie orthopédique et traumatologie   | Anatomie et cytologie pathologiques   |
| Hrvatska      | Ortopedija i traumatologija   | Patologija<br>Patologija i citologija <sup>(3)</sup>  |
| Ireland       | Trauma and orthopaedic surgery  | Histopathology  |
| Italia        | Ortopedia e traumatologia   | Anatomia patologica   |
| Κύπρος        | Ορθοπαιδική   | Παθολογοανατομία — Ιστολογία  |
| Latvija       | Traumatoloģija un ortopēdija  | Patoloģija  |
| Lietuva       | Ortopedija traumatologija   | Patologija  |
| Luxembourg    | Orthopédie  | Anatomie pathologique   |
| Magyarország  | Ortopédia és traumatológia  | Patológia   |
| Malta         | Kirurgija Ortopedika  | Istopatoloģija  |
| Nederland     | Orthopedie  | Pathologie  |
| Österreich    | — Orthopädie und Orthopädische Chirurgie<br>— Orthopädie und Traumatologie <sup>(2)</sup> | — Pathologie<br>— Klinische Pathologie und Molekularpathologie <sup>(2)</sup><br>— Klinische Pathologie und Neuropathologie |
| Polska        | Ortopedia i traumatologia narządu ruchu   | Patomorfologia  |
| Portugal      | Ortopedia   | Anatomia patologica   |
| România       | Ortopedie și traumatologie  | Anatomie patologică   |
| Slovenija     | — Ortopedska kirurgija; Travmatologija  | Patologija  |
| Slovensko     | Ortopédia   | Patologická anatomia  |
| Suomi/Finland | Ortopedia ja traumatologia/Ortopedi och traumatologi                                      | Patologia/Patologi  |

|                | Orthopaedics                        | Pathological anatomy                |
|----------------|-------------------------------------|-------------------------------------|
|                | Minimum period of training: 5 years | Minimum period of training: 4 years |
| Country        | Title                               | Title                               |
| Sverige        | Ortopedi                            | Klinisk patologi                    |
| United Kingdom | Trauma and orthopaedic surgery      | Histopathology                      |

<sup>(1)</sup> As of May 2006.

<sup>(2)</sup> As of June 2015.

<sup>(3)</sup> As of 3 November 2015.

|                         | Neurology                           | Psychiatry   |
|-------------------------|-------------------------------------|--|
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years  |
| Country                 | Title                               | Title  |
| Belgique/België/Belgien | Neurologie                          | Psychiatrie, particulièrement de l'adulte/Psychiatrie, meer bepaald in de volwassenpsychiatrie |
| България                | Нервни болести                      | Психиатрия   |
| Česká republika         | Neurologie                          | Psychiatrie  |
| Danmark                 | Neurologi                           | Psykiatri  |
| Deutschland             | Neurologie                          | Psychiatrie und Psychotherapie   |
| Eesti                   | Neuroloogia                         | Psühhiaatria   |
| Ελλάς                   | Νευρολογία                          | Ψυχιατρική   |
| España                  | Neurología                          | Psiquiatría  |
| France                  | Neurologie                          | Psychiatrie  |
| Hrvatska                | Neurologija                         | Psijhijatrija  |
| Ireland                 | Neurology                           | Psychiatry   |
| Italia                  | Neurologia                          | Psichiatria  |
| Κύπρος                  | Νευρολογία                          | Ψυχιατρική   |
| Latvija                 | Neiroloģija                         | Psijhiatrija   |
| Lietuva                 | Neurologija                         | Psichiatrija   |
| Luxembourg              | Neurologie                          | Psychiatrie  |

|                         | Neurology                           | Psychiatry                                      |
|-------------------------|-------------------------------------|---|
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years             |
| Country                 | Title                               | Title   |
| Magyarország            | Neurológia                          | Pszichiátria                                    |
| Malta                   | Newroloġija                         | Psikjatrija                                     |
| Nederland               | Neurologie                          | Psychiatrie                                     |
| Österreich              | Neurologie                          | Psychiatrie und Psychotherapeutische Medizin    |
| Polska                  | Neurologia                          | Psychiatria                                     |
| Portugal                | Neurologia                          | Psiquiatria                                     |
| România                 | Neurologie                          | Psihiatrie                                      |
| Slovenija               | Nevrologija                         | Psihiatrija                                     |
| Slovensko               | Neurológia                          | Psychiatria                                     |
| Suomi/Finland           | Neurologia/Neurologi                | Psykiatria/Psykiatri                            |
| Sverige                 | Neurologi                           | Psykiatri                                       |
| United Kingdom          | Neurology                           | General psychiatry                              |
|                         | Diagnostic radiology                | Radiotherapy                                    |
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years             |
| Country                 | Title                               | Title   |
| Belgique/België/Belgien | Radiodiagnostic/Röntgendiagnose     | Radiothérapie-oncologie/Radiotherapie-oncologie |
| България                | Образна диагностика                 | Лъчелечение                                     |
| Česká republika         | Radiologie a zobrazovací metody     | Radiační onkologie                              |
| Danmark                 | Radiologi                           | Klinisk Onkologi                                |
| Deutschland             | (Diagnostische) Radiologie          | Strahlentherapie                                |
| Eesti                   | Radioloogia                         | Onkoloogia                                      |
| Ελλάς                   | Ακτινοδιαγνωστική                   | Ακτινοθεραπευτική — Ογκολογία                   |
| España                  | Radiodiagnóstico                    | Oncología radioterápica                         |

|                | Diagnostic radiology                            | Radiotherapy  |
|----------------|---|---|
|                | Minimum period of training: 4 years             | Minimum period of training: 4 years                         |
| Country        | Title   | Title   |
| France         | Radiodiagnostic et imagerie médicale            | Oncologie option oncologie radiothérapique                  |
| Hrvatska       | Klinička radiologija                            | Onkologija i radioterapija                                  |
| Ireland        | Radiology                                       | Radiation oncology  |
| Italia         | Radiodiagnostica                                | Radioterapia  |
| Κύπρος         | Ακτινολογία                                     | Ακτινοθεραπευτική Ογκολογία                                 |
| Latvija        | Diagnostiskā radioloģija                        | Terapeitiskā radioloģija                                    |
| Lietuva        | Radiologija                                     | Onkologija radioterapija                                    |
| Luxembourg     | Radiodiagnostic                                 | Radiothérapie   |
| Magyarország   | Radiológia                                      | Sugárterápia  |
| Malta          | Radjoloġija                                     | Onkoloġija u Radjoterapija                                  |
| Nederland      | Radiologie                                      | Radiotherapie   |
| Österreich     | Radiologie                                      | Strahlentherapie-Radioonkologie                             |
| Polska         | Radiologia i diagnostyka obrazowa               | Radioterapia onkologiczna                                   |
| Portugal       | Radiodiagnóstico                                | Radioterapia<br>Radioncologia                               |
| România        | Radiologie-imagistică medicală                  | Radioterapie  |
| Slovenija      | Radiologija                                     | Radioterapija in onkologija                                 |
| Slovensko      | Rádiológia                                      | Radiačná onkológia  |
| Suomi/Finland  | Radiologia/Radiologi                            | Syöpätaudit/Cancersjukdomar                                 |
| Sverige        | Medicinsk radiologi<br>Radiologi <sup>(2)</sup> | Tumörsjukdomar (allmän onkologi)<br>Onkologi <sup>(1)</sup> |
| United Kingdom | Clinical radiology                              | Clinical oncology   |

<sup>(1)</sup> As of September 2008.

<sup>(2)</sup> As of May 2015.



|                         | Plastic surgery   | Clinical biology   |
|-------------------------|---|--|
|                         | Minimum period of training: 5 years   | Minimum period of training: 4 years  |
| Country                 | Title   | Title  |
| Belgique/België/Belgien | Chirurgie plastique, reconstructrice et esthétique/Plastische, reconstructieve en esthetische heelkunde                     | Biologie clinique/Klinische biologie                                       |
| България                | Пластично-възстановителна и естетична хирургия  | Клинична лаборатория   |
| Česká republika         | Plastická chirurgie   |  |
| Danmark                 | Plastikkirurgi  |  |
| Deutschland             | — Plastische (und Ästhetische) Chirurgie<br>— Plastische und Ästhetische Chirurgie <sup>(1)</sup>                           | Laboratoriumsmedizin <sup>(2)</sup>  |
| Eesti                   | Plastika- ja rekonstruktiivkirurgia   | Laborimeditseen  |
| Ελλάς                   | Πλαστική Χειρουργική  | Ιατρική βιοπαθολογία <sup>(5)</sup>  |
| España                  | Cirugía plástica, estética y reparadora   | Análisis clínicos  |
| France                  | Chirurgie plastique, reconstructrice et esthétique  | Biologie médicale  |
| Hrvatska                | Plastična, rekonstrukcijska i estetska kirurgija  |  |
| Ireland                 | Plastic, reconstructive and aesthetic surgery   |  |
| Italia                  | Chirurgia plastica, ricostruttiva ed estetica   | Patologia clinica<br>Patologia clinica e biochimica clinica <sup>(4)</sup> |
| Κύπρος                  | Πλαστική Χειρουργική  |  |
| Latvija                 | Plastiskā ķirurģija   |  |
| Lietuva                 | Plastinė ir rekonstrukcinė chirurgija   | Laboratorinė medicina  |
| Luxembourg              | Chirurgie plastique   | Biologie clinique  |
| Magyarország            | Plasztikai (égési) sebészet   | Orvosi laboratóriumi diagnosztika  |
| Malta                   | Kirurgija Plastika  |  |
| Nederland               | Plastische chirurgie  |  |
| Österreich              | Plastische, Ästhetische und Rekonstruktive Chirurgie<br>Plastische, Rekonstruktive und Ästhetische Chirurgie <sup>(3)</sup> | Medizinische Biologie  |

|                | Plastic surgery   | Clinical biology                    |
|----------------|---|-------------------------------------|
|                | Minimum period of training: 5 years                           | Minimum period of training: 4 years |
| Country        | Title   | Title                               |
| Polska         | Chirurgia plastyczna  | Diagnostyka laboratoryjna           |
| Portugal       | Cirurgia plástica, estética e reconstrutiva                   | Patologia clínica                   |
| România        | Chirurgie plastică, estetică și microchirurgie reconstructivă | Medicină de laborator               |
| Slovenija      | Plastična, rekonstrukcijska in estetska kirurgija             |                                     |
| Slovensko      | Plastická chirurgia   | Laboratórna medicína                |
| Suomi/Finland  | Plastiikkakirurgia/Plastikkirurgi                             |                                     |
| Sverige        | Plastikkirurgi  |                                     |
| United Kingdom | Plastic surgery   |                                     |

<sup>(1)</sup> As of 2006.

<sup>(2)</sup> As of 2012.

<sup>(3)</sup> As of June 2015.

<sup>(4)</sup> As of June 2015.

<sup>(5)</sup> Date of repeal within the meaning of Article 27(3): 30 December 1994.

|                         | Microbiology-bacteriology  | Biological chemistry                |
|-------------------------|--|-------------------------------------|
|                         | Minimum period of training: 4 years  | Minimum period of training: 4 years |
| Country                 | Title  | Title                               |
| Belgique/België/Belgien |  |                                     |
| България                | Микробиология  | Биохимия                            |
| Česká republika         | Lékařská mikrobiologie   | Klinická biochemie                  |
| Danmark                 | Klinisk mikrobiologi   | Klinisk biokemi                     |
| Deutschland             | — Mikrobiologie (Virologie) und Infektionsepidemiologie<br>— Mikrobiologie, Virologie und Infektionsepidemiologie <sup>(2)</sup> | Laboratoriumsmedizin <sup>(1)</sup> |
| Eesti                   |  |                                     |
| Ελλάς                   | — Ιατρική Βιοπαθολογία<br>— Μικροβιολογία  | Ιατρική βιοπαθολογία <sup>(6)</sup> |
| España                  | Microbiología y parasitología  | Bioquímica clínica                  |

|               | Microbiology-bacteriology   | Biological chemistry                       |
|---------------|---|--|
|               | Minimum period of training: 4 years   | Minimum period of training: 4 years        |
| Country       | Title   | Title                                      |
| France        |   |  |
| Hrvatska      | Klinička mikrobiologija   |  |
| Ireland       | Microbiology  | Chemical pathology                         |
| Italia        | Microbiologia e virologia   | Biochimica clinica <sup>(5)</sup>          |
| Κύπρος        | Μικροβιολογία   |  |
| Latvija       | Mikrobioloģija  |  |
| Lietuva       |   |  |
| Luxembourg    | Microbiologie   | Chimie biologique                          |
| Magyarország  | Orvosi mikrobiológia  |  |
| Malta         | Mikrobijoloġija   | Patoloġija Kimika                          |
| Nederland     | Medische microbiologie  | Klinische chemie <sup>(2)</sup>            |
| Österreich    | — Hygiene und Mikrobiologie<br>— Klinische Mikrobiologie und Hygiene <sup>(4)</sup><br>— Klinische Mikrobiologie und Virologie <sup>(4)</sup> | Medizinische und Chemische Labordiagnostik |
| Polska        | Mikrobiologia lekarska  |  |
| Portugal      |   |  |
| România       |   |  |
| Slovenija     | Klinična mikrobiologija   | Medicinska biokemija                       |
| Slovensko     | Klinická mikrobiológia  | Klinická biochémia                         |
| Suomi/Finland | Kliininen mikrobiologia/Klinisk mikrobiologi  | Kliininen kemia/Klinisk kemi               |
| Sverige       | Klinisk bakteriologi<br>Klinisk mikrobiologi <sup>(7)</sup>   | Klinisk kemi                               |

|                |                                     |                                     |
|----------------|-------------------------------------|-------------------------------------|
|                | Microbiology-bacteriology           | Biological chemistry                |
|                | Minimum period of training: 4 years | Minimum period of training: 4 years |
| Country        | Title                               | Title                               |
| United Kingdom | Medical microbiology and virology   | Chemical pathology                  |

<sup>(1)</sup> Until 2012.

<sup>(2)</sup> Date of repeal within the meaning of Article 27(3): 4 April 2000.

<sup>(3)</sup> As of May 2006.

<sup>(4)</sup> As of June 2015.

<sup>(5)</sup> Date of repeal within the meaning of Article 27(3): 3 June 2015.

<sup>(6)</sup> Date of repeal within the meaning of Article 27(3): 30 December 1994.

<sup>(7)</sup> As of May 2015.

|                         |                                      |  |
|-------------------------|--------------------------------------|--|
|                         | Immunology                           | Thoracic surgery   |
|                         | Minimum period of training: 4 years  | Minimum period of training: 5 years                        |
| Country                 | Title                                | Title  |
| Belgique/België/Belgien |                                      | Chirurgie thoracique/Heelkunde op de thorax <sup>(1)</sup> |
| България                | Клинична имунология                  | Гръдна хирургия Кардиохирургия                             |
| Česká republika         | Alergologie a klinická imunologie    | Hrudní chirurgie   |
| Danmark                 | Klinisk immunologi                   | Thoraxkirurgi  |
| Deutschland             |                                      | Thoraxchirurgie  |
| Eesti                   |                                      | Torakaalkirurgia   |
| Ελλάς                   |                                      | Χειρουργική Θώρακος  |
| España                  | Inmunología                          | — Cirugía torácica<br>— Cirugía cardiovascular             |
| France                  |                                      | Chirurgie thoracique et cardiovasculaire                   |
| Hrvatska                | Alergologija i klinička imunologija  |  |
| Ireland                 | Immunology (clinical and laboratory) | Cardiothoracic surgery                                     |
| Italia                  |                                      | — Chirurgia toracica<br>— Cardiochirurgia                  |
| Κύπρος                  | Ανοσολογία                           | Χειρουργική Θώρακος  |
| Latvija                 | Imunoloģija                          | Torakālā ķirurģija<br>Sirds ķirurģs                        |

|                | Immunology  | Thoracic surgery                                    |
|----------------|---|---|
|                | Minimum period of training: 4 years                     | Minimum period of training: 5 years                 |
| Country        | Title   | Title   |
| Lietuva        |   | Krūtinės chirurgija                                 |
| Luxembourg     | Immunologie   | Chirurgie thoracique                                |
| Magyarország   | Allergológia és klinikai immunológia                    | Mellkassebészet                                     |
| Malta          | Immunoloġija  | Kirurgija Kardjo-Toracika                           |
| Nederland      |   | Cardio-thoracale chirurgie                          |
| Österreich     | — Immunologie<br>— Klinische Immunologie <sup>(2)</sup> | Thoraxchirurgie                                     |
| Polska         | Immunologia kliniczna                                   | Chirurgia klatki piersiowej                         |
| Portugal       |   | Cirurgia cardiotorácica                             |
| România        |   | Chirurgie toracică                                  |
| Slovenija      |   | Torakalna kirurgija                                 |
| Slovensko      | Klinická imunológia a alergológia                       | Hrudníková chirurgia                                |
| Suomi/Finland  |   | Sydän-ja rintaelinkirurgia/Hjärt- och thoraxkirurgi |
| Sverige        | Klinisk immunologi <sup>(3)</sup>                       | Thoraxkirurgi                                       |
| United Kingdom | Immunology  | Cardo-thoracic surgery                              |

<sup>(1)</sup> Date of repeal within the meaning of Article 27(3): 1 January 1983.

<sup>(2)</sup> As of June 2015.

<sup>(3)</sup> Date of repeal within the meaning of Article 27(3): 14 June 2017.

|                         | Paediatric surgery                  | Vascular surgery   |
|-------------------------|-------------------------------------|--|
|                         | Minimum period of training: 5 years | Minimum period of training: 5 years                        |
| Country                 | Title                               | Title  |
| Belgique/België/Belgien |                                     | Chirurgie des vaisseaux/Bloedvatenheelkunde <sup>(1)</sup> |
| България                | Детска хирургия                     | Съдова хирургия  |
| Česká republika         | Dětská chirurgie                    | Cévní chirurgie  |
| Danmark                 |                                     | Karkirurgi   |

|               | Paediatric surgery                  | Vascular surgery                      |
|---------------|-------------------------------------|---------------------------------------|
|               | Minimum period of training: 5 years | Minimum period of training: 5 years   |
| Country       | Title                               | Title                                 |
| Deutschland   | Kinderchirurgie                     | Gefäßchirurgie                        |
| Eesti         | Lastekirurgia                       | Kardiovaskulaarkirurgia               |
| Ελλάς         | Χειρουργική Παιδών                  | Αγγειοχειρουργική                     |
| España        | Cirugía pediátrica                  | Angiología y cirugía vascular         |
| France        | Chirurgie infantile                 | Chirurgie vasculaire                  |
| Hrvatska      | Dječja kirurgija                    | Vaskularna kirurgija                  |
| Ireland       | Paediatric surgery                  |                                       |
| Italia        | Chirurgia pediatrica                | Chirurgia vascolare                   |
| Κύπρος        | Χειρουργική Παιδών                  | Χειρουργική Αγγείων                   |
| Latvija       | Bērnu ķirurģija                     | Asinsvadu ķirurģija                   |
| Lietuva       | Vaikų chirurgija                    | Kraujagyslių chirurgija               |
| Luxembourg    | Chirurgie pédiatrique               | Chirurgie vasculaire                  |
| Magyarország  | Gyermekebészet                      | Érsebészet                            |
| Malta         | Kirurgija Pedjatrika                | Kirurgija Vaskolari                   |
| Nederland     |                                     |                                       |
| Österreich    | Kinder- und Jugendchirurgie         | Allgemeinchirurgie und Gefäßchirurgie |
| Polska        | Chirurgia dziecięca                 | Chirurgia naczyniowa                  |
| Portugal      | Cirurgia pediátrica                 | Angologia/Cirurgia vascular           |
| România       | Chirurgie pediatrică                | Chirurgie vasculară                   |
| Slovenija     |                                     | Kardiovaskularna kirurgija            |
| Slovensko     | Detská chirurgia                    | Cievna chirurgia                      |
| Suomi/Finland | Lastenkirurgia/Barnkirurgi          | Verisuonikirurgia/Kärlkirurgi         |



|                |                                     |                                     |
|----------------|-------------------------------------|-------------------------------------|
|                | Paediatric surgery                  | Vascular surgery                    |
|                | Minimum period of training: 5 years | Minimum period of training: 5 years |
| Country        | Title                               | Title                               |
| Sverige        | Barn- och ungdomskirurgi            | Kärlkirurgi                         |
| United Kingdom | Paediatric surgery                  | Vascular surgery                    |

<sup>(1)</sup> Date of repeal within the meaning of Article 27(3): 1 January 1983.

|                         |   |   |
|-------------------------|---|---|
|                         | Cardiology  | Gastroenterology  |
|                         | Minimum period of training: 4 years   | Minimum period of training: 4 years   |
| Country                 | Title   | Title   |
| Belgique/België/Belgien | Cardiologie   | Gastro-entérologie/Gastro-enterologie   |
| България                | Кардиология   | Гастроентерология <sup>(1)</sup>  |
| Česká republika         | Kardiologie   | Gastroenterologie   |
| Danmark                 | Intern medicin: kardiologi  | Intern medicin: gastroenterology og hepatologi  |
| Deutschland             | — Innere Medizin und Schwerpunkt Kardiologie<br>— Innere Medizin und Kardiologie <sup>(2)</sup> | — Innere Medizin und Schwerpunkt Gastroenterologie<br>— Innere Medizin und Gastroenterologie <sup>(2)</sup> |
| Eesti                   | Kardioloogia  | Gastroenteroloogia  |
| Ελλάς                   | Καρδιολογία   | Γαστρεντερολογία  |
| España                  | Cardiología   | Aparato digestivo   |
| France                  | Cardiologie et maladies vasculaires   | Gastro-entérologie et hépatologie   |
| Hrvatska                | Kardiologija  | Gastroenterologija  |
| Ireland                 | Cardiology  | Gastro-enterology   |
| Italia                  | Malattie dell'apparato cardiovascolare  | Gastroenterologia<br>Malattie dell'apparato digerente <sup>(3)</sup>  |
| Κύπρος                  | Καρδιολογία   | Γαστρεντερολογία  |
| Latvija                 | Kardioloģija  | Gastroenteroloģija  |
| Lietuva                 | Kardiologija  | Gastroenterologija  |
| Luxembourg              | Cardiologie et angiologie   | Gastro-enterologie  |

|                | Cardiology                          | Gastroenterology                                     |
|----------------|-------------------------------------|--|
|                | Minimum period of training: 4 years | Minimum period of training: 4 years                  |
| Country        | Title                               | Title  |
| Magyarország   | Kardiológia                         | Gasztroenterológia                                   |
| Malta          | Kardjologija                        | Gastroenterologija                                   |
| Nederland      | Cardiologie                         | Maag-darm-leverziekten                               |
| Österreich     | Innere Medizin und Kardiologie      | Innere Medizin und Gastroenterologie und Hepatologie |
| Polska         | Kardiologia                         | Gastrenerologia                                      |
| Portugal       | Cardiologia                         | Gastrenerologia                                      |
| România        | Cardiologie                         | Gastroenterologie                                    |
| Slovenija      | Kardiologija in vaskularna medicina | Gastroenterologija                                   |
| Slovensko      | Kardiológia                         | Gastroenterológia                                    |
| Suomi/Finland  | Kardiologia/Kardiologi              | Gastroenterologia/Gastroenterologi                   |
| Sverige        | Kardiologi                          | Medicinsk gastroenterologi och hepatologi            |
| United Kingdom | Cardiology                          | Gastroenterology                                     |

<sup>(1)</sup> Until 14 September 2010.

<sup>(2)</sup> As of October 2009.

<sup>(3)</sup> As of June 2015.

|                         | Rheumatology  | General Haematology   |
|-------------------------|---|---|
|                         | Minimum period of training: 4 years   | Minimum period of training: 3 years   |
| Country                 | Title   | Title   |
| Belgique/België/Belgien | Rhumathologie/reumatologie  |   |
| България                | Ревматология  | Клинична хематология  |
| Česká republika         | Revmatologie  | Hematologie a transfúzní lékařství  |
| Danmark                 | Intern medicin: reumatologi   | Intern medicin: hæmatologi  |
| Deutschland             | — Innere Medizin und Schwerpunkt Rheumatologie<br>— Innere Medizin und Rheumatologie <sup>(1)</sup> | — Innere Medizin und Schwerpunkt Hämatologie und Onkologie<br>— Innere Medizin und Hämatologie und Onkologie <sup>(1)</sup> |

|               | Rheumatology                        | General Haematology  |
|---------------|-------------------------------------|--|
|               | Minimum period of training: 4 years | Minimum period of training: 3 years                          |
| Country       | Title                               | Title  |
| Eesti         | Reumatoloogia                       | Hematoloogia   |
| Ελλάς         | Ρευματολογία                        | Αιματολογία  |
| España        | Reumatología                        | Hematología y hemoterapia                                    |
| France        | Rhumatologie                        |  |
| Hrvatska      | Reumatologija                       | Hematologija   |
| Ireland       | Rheumatology                        | Haematology (clinical and laboratory)                        |
| Italia        | Reumatologia                        | Ematologia   |
| Κύπρος        | Ρευματολογία                        | Αιματολογία  |
| Latvija       | Reimatoloģija                       | Hematoloģija   |
| Lietuva       | Reumatologija                       | Hematologija   |
| Luxembourg    | Rhumatologie                        | Hématologie  |
| Magyarország  | Reumatológia                        | Hematológia  |
| Malta         | Rewmatoloġija                       | Ematoloġija  |
| Nederland     | Reumatologie                        |  |
| Österreich    | Innere Medizin und Rheumatologie    | Innere Medizin und Hämatologie und inter-nistische Onkologie |
| Polska        | Reumatologia                        | Hematologia  |
| Portugal      | Reumatologia                        | Imuno-hemoterapia  |
| România       | Reumatologie                        | Hematologie  |
| Slovenija     | Revmatologija                       | Hematologija   |
| Slovensko     | Reumatológia                        | Hematológia a transfúziológia                                |
| Suomi/Finland | Reumatologia/Reumatologi            | Kliininen hematologia/Klinisk hematologi                     |
| Sverige       | Reumatologi                         | Hematologi   |

|                |                                     |                                     |
|----------------|-------------------------------------|-------------------------------------|
|                | Rheumatology                        | General Haematology                 |
|                | Minimum period of training: 4 years | Minimum period of training: 3 years |
| Country        | Title                               | Title                               |
| United Kingdom | Rheumatology                        | Haematology                         |

<sup>(1)</sup> As of October 2009.

|                         |   |  |
|-------------------------|---|--|
|                         | Endocrinology   | Physiotherapy  |
|                         | Minimum period of training: 3 years   | Minimum period of training: 3 years  |
| Country                 | Title   | Title  |
| Belgique/België/Belgien |   | Médecine physique et réadaptation/Fysische geneeskunde en revalidatie              |
| България                | Ендокринология и болести на обмяната  | Физикална и рехабилитационна медицина  |
| Česká republika         | Diabetologie a endokrinologie   | Rehabilitační a fyzikální medicína   |
| Danmark                 | Intern medicin: endokrinologi   |  |
| Deutschland             | — Innere Medizin und Schwerpunkt Endokrinologie und Diabetologie<br>— Innere Medizin und Endokrinologie und Diabetologie <sup>(1)</sup> | Physikalische und Rehabilitative Medizin   |
| Eesti                   | Endokrinoloogia   | Taastusravi ja füsiaatria  |
| Ελλάς                   | Ενδοκρινολογία  | Φυσική Ιατρική και Αποκατάσταση  |
| España                  | Endocrinología y nutrición  | Medicina física y rehabilitación   |
| France                  | Endocrinologie — diabète — maladies métaboliques  | Médecine physique et de réadaptation   |
| Hrvatska                | Endokrinologija i dijabetologija  | Fizikalna medicina i rehabilitacija  |
| Ireland                 | Endocrinology and diabetes mellitus   |  |
| Italia                  | Endocrinologia e malattie del ricambio<br>Endocrinologia e malattie del metabolismo <sup>(2)</sup>                                      | Medicina fisica e riabilitazione<br>Medicina fisica e riabilitativa <sup>(2)</sup> |
| Κύπρος                  | Ενδοκρινολογία  | Φυσική Ιατρική και Αποκατάσταση  |
| Latvija                 | Endokrinoloģija   | Rehabilitoloģija Fiziskā rehabilitācija<br>Fizikālā medicīna                       |
| Lietuva                 | Endokrinologija   | Fizinė medicina ir reabilitacija   |

|                | Endocrinology   | Physiotherapy                                       |
|----------------|---|---|
|                | Minimum period of training: 3 years                                 | Minimum period of training: 3 years                 |
| Country        | Title   | Title   |
| Luxembourg     | Endocrinologie, maladies du métabolisme et de la nutrition          | Rééducation et réadaptation fonctionnelles          |
| Magyarország   | Endokrinológia  | Fizikális medicina és rehabilitációs orvoslás       |
| Malta          | Endokrinologija u Dijabete  |   |
| Nederland      |   | Revalidatiegeneeskunde                              |
| Österreich     | Innere Medizin und Endokrinologie und Diabetologie                  | Physikalische Medizin und Allgemeine Rehabilitation |
| Polska         | Endokrynologia  | Rehabilitacja medyczna                              |
| Portugal       | Endocrinologia/Nutrição   | Medicina física e de reabilitação                   |
| România        | Endocrinologie  | Reabilitare Medicală                                |
| Slovenija      |   | Fizikalna in rehabilitacijska medicina              |
| Slovensko      | Endokrinológia  | Fyziatria, balneológia a liečebná rehabilitácia     |
| Suomi/Finland  | Endokrinologia/Endokrinologi  | Fysiatria/Fysiatri                                  |
| Sverige        | Endokrina sjukdomar<br>Endokrinologi och diabetologi <sup>(3)</sup> | Rehabiliteringsmedicin                              |
| United Kingdom | Endocrinology and diabetes mellitus                                 |   |

<sup>(1)</sup> As of October 2009.

<sup>(2)</sup> As of February 2015.

<sup>(3)</sup> As of September 2008.

|                         | Neuropsychiatry                              | Dermato-venereology                       |
|-------------------------|--|---|
|                         | Minimum period of training: 5 years          | Minimum period of training: 3 years       |
| Country                 | Title  | Title                                     |
| Belgique/België/Belgien | Neuropsychiatrie <sup>(1)</sup>              | Dermato-vénéréologie/Dermato-venereologie |
| България                |  | Кожни и венерически болести               |
| Česká republika         |  | Dermatovenerologie                        |
| Danmark                 |  | Dermato-venerologi                        |
| Deutschland             | Nervenheilkunde (Neurologie und Psychiatrie) | Haut — und Geschlechtskrankheiten         |

|               | Neuropsychiatry                           | Dermato-venereology                                    |
|---------------|---|--|
|               | Minimum period of training: 5 years       | Minimum period of training: 3 years                    |
| Country       | Title                                     | Title  |
| Eesti         |   | Dermatoveneroloogia                                    |
| Ελλάς         | Νευρολογία — Ψυχιατρική                   | Δερματολογία — Αφροδισιολογία                          |
| España        |   | Dermatología médico-quirúrgica y venereología          |
| France        | Neuropsychiatrie <sup>(2)</sup>           | Dermatologie et vénéréologie                           |
| Hrvatska      |   | Dermatologija i venerologija                           |
| Ireland       |   |  |
| Italia        | Neuropsichiatria <sup>(3)</sup>           | Dermatologia e venereologia                            |
| Κύπρος        | Νευρολογία — Ψυχιατρική                   | Δερματολογία — Αφροδισιολογία                          |
| Latvija       |   | Dermatoloģija un veneroloģija                          |
| Lietuva       |   | Dermatovenerologija                                    |
| Luxembourg    | Neuropsychiatrie <sup>(4)</sup>           | Dermato-vénéréologie                                   |
| Magyarország  |   | Bőrgyógyászat  |
| Malta         |   | Dermato-venerejologija                                 |
| Nederland     | Zenuw — en zielsziekten <sup>(5)</sup>    | Dermatologie en venerologie                            |
| Österreich    | Neurologie und Psychiatrie <sup>(6)</sup> | Haut- und Geschlechtskrankheiten                       |
| Polska        |   | Dermatologia i wenerologia                             |
| Portugal      |   | Dermatovenereologia                                    |
| România       |   | Dermatovenerologie                                     |
| Slovenija     |   | Dermatovenerologija                                    |
| Slovensko     | Neuropsychiatria                          | Dermatovenerológia                                     |
| Suomi/Finland |   | Ihotaudit ja allergologia/Hudsjukdomar och allergologi |
| Sverige       |   | Hud- och könssjukdomar                                 |

|                |                                     |                                     |
|----------------|-------------------------------------|-------------------------------------|
|                | Neuropsychiatry                     | Dermato-venereology                 |
|                | Minimum period of training: 5 years | Minimum period of training: 3 years |
| Country        | Title                               | Title                               |
| United Kingdom |                                     |                                     |

Dates of repeal within the meaning of Article 27(3):

<sup>(1)</sup> 1 August 1987 except for persons having commenced training prior to that date

<sup>(2)</sup> 31 December 1971

<sup>(3)</sup> 31 October 1999

<sup>(4)</sup> Evidence of qualifications is no longer awarded for training commenced after 5 March 1982

<sup>(5)</sup> 9 July 1984

<sup>(6)</sup> 31 March 2004.

|                         |                                     |   |
|-------------------------|-------------------------------------|---|
|                         | Radiology                           | Child psychiatry  |
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years   |
| Country                 | Title                               | Title   |
| Belgique/België/Belgien |                                     | Psychiatrie, particulièrement en psychiatrie infanto-juvénile/Psychiatrie, meer bepaald in de kinder- en jeugdpsychiatrie |
| България                | Радиобиология                       | Детска психиатрия   |
| Česká republika         |                                     | Dětská a dorostová psychiatrie  |
| Danmark                 |                                     | Børne- og ungdomspsykiatri  |
| Deutschland             | Radiologie                          | Kinder — und Jugendpsychiatrie und — psychotherapie   |
| Eesti                   |                                     |   |
| Ελλάς                   | Ακτινολογία — Ραδιολογία            | Παιδοψυχιατρική   |
| España                  | Electroradiología <sup>(1)</sup>    |   |
| France                  | Electro-radiologie <sup>(2)</sup>   | Pédopsychiatrie <sup>(7)</sup>  |
| Hrvatska                | Klinička radiologija                | Dječja i adolescentna psihijatrija  |
| Ireland                 |                                     | Child and adolescent psychiatry   |
| Italia                  | Radiologia <sup>(3)</sup>           | Neuropsichiatria infantile  |
| Κύπρος                  |                                     | Παιδοψυχιατρική   |
| Latvija                 |                                     | Bērnu psihiatrija   |
| Lietuva                 |                                     | Vaikų ir paauglių psichiatrija  |
| Luxembourg              | Électroradiologie <sup>(4)</sup>    | Psychiatrie infantile   |



|                | Radiology                           | Child psychiatry   |
|----------------|-------------------------------------|--|
|                | Minimum period of training: 4 years | Minimum period of training: 4 years  |
| Country        | Title                               | Title  |
| Magyarország   | Radiológia                          | Gyermekek és ifjúsági pszichiátria   |
| Malta          |                                     |  |
| Nederland      | Radiologie <sup>(5)</sup>           |  |
| Österreich     | Radiologie <sup>(6)</sup>           | — Kinder- und Jugendpsychiatrie<br>— Kinder- und Jugendpsychiatrie und Psychotherapeutische Medizin <sup>(8)</sup> |
| Polska         |                                     | Psychiatria dzieci i młodzieży   |
| Portugal       | Radiologia                          | Psiquiatria da infância e da adolescência  |
| România        |                                     | Psihiatrie pediatrică  |
| Slovenija      | Radiologija                         | Otroška in mladostniška psihiatrija  |
| Slovensko      |                                     | Detská psychiatria   |
| Suomi/Finland  |                                     | Lastenpsykiatria/Barnpsykiatri   |
| Sverige        |                                     | Barn- och ungdomspsykiatri   |
| United Kingdom |                                     | Child and adolescent psychiatry  |

Dates of repeal within the meaning of Article 27(3):

<sup>(1)</sup> 1 February 1984

<sup>(2)</sup> 3 December 1971

<sup>(3)</sup> 31 October 1993

<sup>(4)</sup> Evidence of qualifications is no longer awarded for training commenced after 5 March 1982

<sup>(5)</sup> 8 July 1984

<sup>(6)</sup> 31 March 2004

<sup>(7)</sup> 1 January 1991.

<sup>(8)</sup> As of June 2015.

|                         | Geriatrics                          | Renal diseases                      |
|-------------------------|-------------------------------------|-------------------------------------|
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years |
| Country                 | Title                               | Title                               |
| Belgique/België/Belgien | Gériatrie/Geriatrie                 |                                     |
| България                | Гериатрична медицина                | Нефрология                          |
| Česká republika         | Geriatrie                           | Nefrologie                          |
| Danmark                 | Intern medicin: geriatric           | Intern medicin: nefrologi           |

|               | Geriatrics                          | Renal diseases  |
|---------------|-------------------------------------|---|
|               | Minimum period of training: 4 years | Minimum period of training: 4 years   |
| Country       | Title                               | Title   |
| Deutschland   |                                     | — Innere Medizin und Schwerpunkt Nephrologie<br>— Innere Medizin und Nephrologie <sup>(1)</sup> |
| Eesti         |                                     | Nefroloogia   |
| Ελλάς         |                                     | Νεφρολογία  |
| España        | Geriatría                           | Nefrología  |
| France        |                                     | Néphrologie   |
| Hrvatska      | Gerijatrija                         | Nefrologija   |
| Ireland       | Geriatric medicine                  | Nephrology  |
| Italia        | Geriatría                           | Nefrologia  |
| Κύπρος        | Γηριατρική                          | Νεφρολογία  |
| Latvija       |                                     | Nefroloģija   |
| Lietuva       | Geriatrija                          | Nefrologija   |
| Luxembourg    | Gériatrie                           | Néphrologie   |
| Magyarország  | Geriatría                           | Nefrológia  |
| Malta         | Ġerjatrija                          | Nefroloġija   |
| Nederland     | Klinische geriatrie                 |   |
| Österreich    |                                     | Innere Medizin und Nephrologie  |
| Polska        | Geriatría                           | Nefrologia  |
| Portugal      |                                     | Nefrologia  |
| România       | Geriatric și gerontologie           | Nefrologie  |
| Slovenija     |                                     | Nefrologija   |
| Slovensko     | Geriatría                           | Nefrológia  |
| Suomi/Finland | Geriatría/Geriatri                  | Nefrologia/Nefrologi  |

|                | Geriatrics                          | Renal diseases   |
|----------------|-------------------------------------|--|
|                | Minimum period of training: 4 years | Minimum period of training: 4 years                                |
| Country        | Title                               | Title  |
| Sverige        | Geriatrik                           | Medicinska njursjukdomar (nefrologi)<br>Njurmedicin <sup>(2)</sup> |
| United Kingdom | Geriatric medicine                  | Renal medicine   |

<sup>(1)</sup> As of October 2009.

<sup>(2)</sup> As of May 2015.

|                         | Communicable diseases   | Community medicine  |
|-------------------------|---|---|
|                         | Minimum period of training: 4 years                                 | Minimum period of training: 4 years                         |
| Country                 | Title   | Title   |
| Belgique/België/Belgien |   |   |
| България                | Инфекциозни болести   | Социална медицина и здравен мениджмънт<br>комунална хигиена |
| Česká republika         | Infekční lékařství  | Hygiena a epidemiologie                                     |
| Danmark                 | Intern medicin: infektionsmedicin                                   | Samfundsmedicin   |
| Deutschland             |   | Öffentliches Gesundheitswesen                               |
| Eesti                   | Infektsioonhaigused   |   |
| Ελλάς                   |   | Κοινωνική Ιατρική   |
| España                  |   | Medicina preventiva y salud pública                         |
| France                  |   | Santé publique et médecine sociale                          |
| Hrvatska                | Infektologija   | Javnozdravstvena medicina                                   |
| Ireland                 | Infectious diseases   | Public health medicine                                      |
| Italia                  | Malattie infettive<br>Malattie infettive e tropicali <sup>(2)</sup> | Igiene e medicina preventiva                                |
| Κύπρος                  | Λοιμώδη Νοσήματα <sup>(3)</sup>                                     | — Υγειονομία  |
|                         |   | — Κοινοτική Ιατρική   |
| Latvija                 | Infektoloģija   |   |
| Lietuva                 | Infektologija   |   |

|                | Communicable diseases                 | Community medicine                                |
|----------------|---------------------------------------|---|
|                | Minimum period of training: 4 years   | Minimum period of training: 4 years               |
| Country        | Title                                 | Title   |
| Luxembourg     | Maladies contagieuses                 | Santé publique                                    |
| Magyarország   | Infektológia                          | Megelőző orvostan és népegészségtan               |
| Malta          | Mard Infettiv                         | Saħħa Pubblika                                    |
| Nederland      |                                       | Maatschappij en gezondheid                        |
| Österreich     | Innere Medizin und Infektiologie      | — Sozialmedizin<br>— Public Health <sup>(1)</sup> |
| Polska         | Choroby zakaźne                       | Zdrowie publiczne, epidemiologia                  |
| Portugal       | Doenças infecciosas                   | Saúde pública                                     |
| România        | Boli infecțioase                      | Sănătate publică și management                    |
| Slovenija      | Infektologija                         | Javno zdravje                                     |
| Slovensko      | Infektológia                          | Verejné zdravotníctvo                             |
| Suomi/Finland  | Infektiosairaudet/Infektionssjukdomar | Terveystiete/Infektionssjukdomar                  |
| Sverige        | Infektionssjukdomar                   | Socialmedicin                                     |
| United Kingdom | Infectious diseases                   | Public health medicine                            |

<sup>(1)</sup> As of June 2015.

<sup>(2)</sup> As of February 2015.

<sup>(3)</sup> Date of repeal within the meaning of Article 27(3): 8 December 2016.

|                         | Pharmacology                                 | Occupational medicine                  |
|-------------------------|--|--|
|                         | Minimum period of training: 4 years          | Minimum period of training: 4 years    |
| Country                 | Title  | Title                                  |
| Belgique/België/Belgien |  | Médecine du travail/Arbeidsgeneeskunde |
| България                | Клинична фармакология и терапия Фармакология | Трудова медицина                       |
| Česká republika         | Klinická farmakologie                        | Pracovní lékařství                     |
| Danmark                 | Klinisk farmakologi                          | Arbejdsmedicin                         |
| Deutschland             | Pharmakologie und Toxikologie                | Arbeitsmedizin                         |

|              | Pharmacology   | Occupational medicine  |
|--------------|--|--|
|              | Minimum period of training: 4 years  | Minimum period of training: 4 years  |
| Country      | Title  | Title  |
| Eesti        |  |  |
| Ελλάς        |  | Ιατρική της Εργασίας   |
| España       | Farmacología clínica   | Medicina del trabajo   |
| France       |  | Médecine du travail  |
| Hrvatska     | Klinička farmakologija s toksikologijom  | Medicina rada i športa   |
| Ireland      | Clinical pharmacology and therapeutics<br>Pharmaceutical Medicine <sup>(4)</sup> | Occupational medicine  |
| Italia       | Farmacologia<br>Farmacologia e tossicologia clinica <sup>(2)</sup>               | Medicina del lavoro  |
| Κύπρος       |  | Ιατρική της Εργασίας   |
| Latvija      |  | Arodslimības   |
| Lietuva      |  | Darbo medicina   |
| Luxembourg   |  | Médecine du travail  |
| Magyarország | Klinikai farmakológia  | Foglalkozás-orvostan (üzemorvostan)  |
| Malta        | Farmakoloġija Klinika u t-Terapewtika  | Medicina Okkupazzjonali  |
| Nederland    |  | — Arbeid en gezondheid, bedrijfsgeneeskunde<br>— Arbeid en gezondheid, verzekeringsgeneeskunde |
| Österreich   | Pharmakologie und Toxikologie  | — Arbeitsmedizin<br>— Arbeitsmedizin und angewandte Physiologie <sup>(1)</sup>                 |
| Polska       | Farmakologia kliniczna   | Medycyna pracy   |
| Portugal     |  | Medicina do trabalho   |
| România      | Farmacologie clinică   | Medicina muncii  |
| Slovenija    |  | Medicina dela, prometa in športa   |
| Slovensko    | Klinická farmakológia  | Pracovné lekárstvo   |

|                | Pharmacology  | Occupational medicine  |
|----------------|---|--|
|                | Minimum period of training: 4 years   | Minimum period of training: 4 years                                |
| Country        | Title   | Title  |
| Suomi/Finland  | Kliininen farmakologia ja lääkehoito/Klinisk farmakologi och läkemedelsbehandling | Työterveyshuolto/Företagshälsövård                                 |
| Sverige        | Klinisk farmakologi   | Yrkes- och miljömedicin<br>Arbets- och miljömedicin <sup>(3)</sup> |
| United Kingdom | Clinical pharmacology and therapeutics  | Occupational medicine  |

<sup>(1)</sup> As of June 2015.

<sup>(2)</sup> As of February 2015.

<sup>(3)</sup> As of September 2008.

<sup>(4)</sup> As of July 2017.

|                         | Allergology                           | Nuclear medicine                         |
|-------------------------|---------------------------------------|--|
|                         | Minimum period of training: 3 years   | Minimum period of training: 4 years      |
| Country                 | Title                                 | Title                                    |
| Belgique/België/Belgien |                                       | Médecine nucléaire/Nucleaire geneeskunde |
| България                | Клинична алергология                  | Нуклеарна медицина                       |
| Česká republika         | Alergologie a klinická imunologie     | Nukleární medicína                       |
| Danmark                 |                                       | Klinisk fysiologi og nuklearmedicin      |
| Deutschland             |                                       | Nuklearmedizin                           |
| Eesti                   |                                       |  |
| Ελλάς                   | Αλλεργιολογία                         | Πυρηνική Ιατρική                         |
| España                  | Alergología                           | Medicina nuclear                         |
| France                  |                                       | Médecine nucléaire                       |
| Hrvatska                | Alergologija i klinička imunologija   | Nuklearna medicina                       |
| Ireland                 |                                       |  |
| Italia                  | Allergologia ed immunologia clinica   | Medicina nucleare                        |
| Κύπρος                  | Αλλεργιολογία                         | Πυρηνική Ιατρική                         |
| Latvija                 | Alergoloģija                          |  |
| Lietuva                 | Alergologija ir klinikinė imunologija |  |

|                | Allergology                          | Nuclear medicine  |
|----------------|--------------------------------------|---|
|                | Minimum period of training: 3 years  | Minimum period of training: 4 years   |
| Country        | Title                                | Title   |
| Luxembourg     |                                      | Médecine nucléaire  |
| Magyarország   | Allergológia és klinikai immunológia | Nukleáris medicina  |
| Malta          |                                      | Medicina Nukleari   |
| Nederland      | Allergologie <sup>(1)</sup>          | Nucleaire geneeskunde   |
| Österreich     |                                      | Nuklearmedizin  |
| Polska         | Alergologia                          | Medycyna nuklearna  |
| Portugal       | Imuno-alergologia                    | Medicina nuclear  |
| România        | Alergologie și imunologie clinică    | Medicină nucleară   |
| Slovenija      |                                      | Nuklearna medicina  |
| Slovensko      | Klinická imunológia a alergológia    | Nukleárna medicína  |
| Suomi/Finland  |                                      | Kliininen fysiologia ja isotooppiäätiede/<br>Klinisk fysiologi och nukleärmedicin |
| Sverige        | Allergisjukdomar                     | Nukleärmedicin<br>Nuklearmedicin <sup>(2)</sup>                                   |
| United Kingdom |                                      | Nuclear medicine  |

<sup>(1)</sup> Date of repeal within the meaning of Article 27(3): 12 August 1996.

<sup>(2)</sup> As of September 2008.

|                         | Maxillo-facial surgery (basic medical training) | Biological haematology              |
|-------------------------|---|-------------------------------------|
|                         | Minimum period of training: 5 years             | Minimum period of training: 4 years |
| Country                 | Title   | Title                               |
| Belgique/België/Belgien |   |                                     |
| България                | Лицево-челюстна хирургия                        | Трансфузионна хематология           |
| Česká republika         | Maxilofaciální chirurgie                        |                                     |
| Danmark                 |   |                                     |
| Deutschland             |   |                                     |
| Eesti                   |   |                                     |



|               |  |                                     |
|---------------|--|-------------------------------------|
|               | Maxillo-facial surgery (basic medical training)      | Biological haematology              |
|               | Minimum period of training: 5 years                  | Minimum period of training: 4 years |
| Country       | Title  | Title                               |
| Ελλάς         |  |                                     |
| España        | Cirugía oral y maxilofacial                          |                                     |
| France        | Chirurgie maxillo-faciale et stomatologie            | Hématologie                         |
| Hrvatska      | Maksilofacijalna kirurgija                           |                                     |
| Ireland       |  |                                     |
| Italia        | Chirurgia maxillo-facciale                           |                                     |
| Κύπρος        |  |                                     |
| Latvija       | Mutes, sejas un žokļu ķirurģija                      |                                     |
| Lietuva       | Veido ir žandikaulių chirurgija                      |                                     |
| Luxembourg    | Chirurgie maxillo-faciale                            | Hématologie biologique              |
| Magyarország  | Szájsebészet <sup>(1)</sup>                          |                                     |
| Malta         |  |                                     |
| Nederland     |  |                                     |
| Österreich    | Mund-, Kiefer — und Gesichtschirurgie <sup>(2)</sup> |                                     |
| Polska        | Chirurgia szczekowo-twarzowa                         |                                     |
| Portugal      | Cirurgia maxilo-facial                               | Hematologia clinica                 |
| România       |  |                                     |
| Slovenija     | Maxilofacialna kirurgija                             |                                     |
| Slovensko     | Maxilofaciálna chirurgia                             |                                     |
| Suomi/Finland |  |                                     |
| Sverige       |  |                                     |

|                |   |                                     |
|----------------|---|-------------------------------------|
|                | Maxillo-facial surgery (basic medical training) | Biological haematology              |
|                | Minimum period of training: 5 years             | Minimum period of training: 4 years |
| Country        | Title   | Title                               |
| United Kingdom |   |                                     |

Dates of repeal within the meaning of Article 27(3):

<sup>(1)</sup> 30 September 2007

<sup>(2)</sup> 28 February 2013.

|                         |                                     |                                     |
|-------------------------|-------------------------------------|-------------------------------------|
|                         | Stomatology                         | Dermatology                         |
|                         | Minimum period of training: 3 years | Minimum period of training: 4 years |
| Country                 | Title                               | Title                               |
| Belgique/België/Belgien |                                     |                                     |
| България                |                                     |                                     |
| Česká republika         |                                     |                                     |
| Danmark                 |                                     |                                     |
| Deutschland             |                                     |                                     |
| Eesti                   |                                     |                                     |
| Ελλάς                   |                                     |                                     |
| España                  | Estomatología                       |                                     |
| France                  | Stomatologie                        |                                     |
| Hrvatska                |                                     |                                     |
| Ireland                 |                                     | Dermatology                         |
| Italia                  | Odontostomatologia <sup>(1)</sup>   |                                     |
| Κύπρος                  |                                     |                                     |
| Latvija                 |                                     |                                     |
| Lietuva                 |                                     |                                     |
| Luxembourg              | Stomatologie                        |                                     |
| Magyarország            |                                     |                                     |
| Malta                   |                                     | Dermatoloġija                       |

|                | Stomatology                         | Dermatology                         |
|----------------|-------------------------------------|-------------------------------------|
|                | Minimum period of training: 3 years | Minimum period of training: 4 years |
| Country        | Title                               | Title                               |
| Nederland      |                                     |                                     |
| Österreich     |                                     |                                     |
| Polska         |                                     |                                     |
| Portugal       | Estomatologia                       |                                     |
| România        |                                     |                                     |
| Slovenija      |                                     |                                     |
| Slovensko      |                                     |                                     |
| Suomi/Finland  |                                     |                                     |
| Sverige        |                                     |                                     |
| United Kingdom |                                     | Dermatology                         |

<sup>(1)</sup> Date of repeal within the meaning of Article 27(3): 31 December 1994.

|                         | Venerology                          | Tropical medicine                   |
|-------------------------|-------------------------------------|-------------------------------------|
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years |
| Country                 | Title                               | Title                               |
| Belgique/België/Belgien |                                     |                                     |
| България                |                                     |                                     |
| Česká republika         |                                     |                                     |
| Danmark                 |                                     |                                     |
| Deutschland             |                                     |                                     |
| Eesti                   |                                     |                                     |
| Ελλάς                   |                                     |                                     |
| España                  |                                     |                                     |
| France                  |                                     |                                     |
| Hrvatska                |                                     |                                     |
| Ireland                 | Genito-urinary medicine             | Tropical medicine                   |

|                | Venerology                          | Tropical medicine   |
|----------------|-------------------------------------|---|
|                | Minimum period of training: 4 years | Minimum period of training: 4 years   |
| Country        | Title                               | Title   |
| Italia         |                                     | Medicina tropicale <sup>(2)</sup>   |
| Κύπρος         |                                     |   |
| Latvija        |                                     |   |
| Lietuva        |                                     |   |
| Luxembourg     |                                     |   |
| Magyarország   |                                     | Trópusi betegségek  |
| Malta          | Medicina Uro-genetali               |   |
| Nederland      |                                     |   |
| Österreich     |                                     | — Spezifische Prophylaxe und Tropenmedizin<br>— Klinische Immunologie und Spezifische Prophylaxe und Tropenmedizin <sup>(1)</sup> |
| Polska         |                                     | Medycyna transportu   |
| Portugal       |                                     | Medicina tropical   |
| România        |                                     |   |
| Slovenija      |                                     |   |
| Slovensko      |                                     | Tropická medicína   |
| Suomi/Finland  |                                     |   |
| Sverige        |                                     |   |
| United Kingdom | Genito-urinary medicine             | Tropical medicine   |

<sup>(1)</sup> As of June 2015.

<sup>(2)</sup> Date of repeal within the meaning of Article 27(3); 3 June 2015.

|                         | Gastroenterological surgery                                  | Accident and emergency medicine     |
|-------------------------|--|-------------------------------------|
|                         | Minimum period of training: 5 years                          | Minimum period of training: 5 years |
| Country                 | Title  | Title                               |
| Belgique/België/Belgien | Chirurgie abdominale/Heelkunde op het abdomen <sup>(1)</sup> |                                     |

|                 |  |   |
|-----------------|--|---|
|                 | Gastroenterological surgery                      | Accident and emergency medicine   |
|                 | Minimum period of training: 5 years              | Minimum period of training: 5 years   |
| Country         | Title  | Title   |
| България        | Гастроентерологична хирургия                     | Спешна медицина   |
| Česká republika |  | — Traumatologie<br>— Urgentní medicína  |
| Danmark         |  |   |
| Deutschland     | Visceralchirurgie                                |   |
| Eesti           |  |   |
| Ελλάς           |  |   |
| España          |  |   |
| France          | Chirurgie viscérale et digestive                 |   |
| Hrvatska        | Abdominalna kirurgija                            | Hitna medicina  |
| Ireland         |  | Emergency medicine  |
| Italia          | Chirurgia dell'apparato digerente <sup>(3)</sup> | Medicina d'emergenza-urgenza <sup>(2)</sup>                                   |
| Κύπρος          |  |   |
| Latvija         |  |   |
| Lietuva         | Abdominalinė chirurgija                          |   |
| Luxembourg      | Chirurgie gastro-entérologique                   |   |
| Magyarország    |  | Oxyológia és sürgősségi orvostan  |
| Malta           |  | Medicina tal-Accidenti u l-Emergenza<br>Medicina tal-Emergenza <sup>(4)</sup> |
| Nederland       |  |   |
| Österreich      |  |   |
| Polska          |  | Medycyna ratunkowa  |
| Portugal        |  |   |
| România         |  | Medicină de urgență   |
| Slovenija       | Abdominalna kirurgija                            | Urgentna medicina   |

|                |   |  |
|----------------|---|--|
|                | Gastroenterological surgery                             | Accident and emergency medicine            |
|                | Minimum period of training: 5 years                     | Minimum period of training: 5 years        |
| Country        | Title   | Title                                      |
| Slovensko      | Gastroenterologická chirurgia                           | — Úrazová chirurgia<br>— Urgentná medicína |
| Suomi/Finland  | Gastroenterologinen kirurgia/Gastroenterologisk kirurgi | Akuuttilääketiede/Akutmedicin              |
| Sverige        |   | Akutsjukvård                               |
| United Kingdom |   | Emergency medicine                         |

<sup>(1)</sup> Date of repeal within the meaning of Article 27(3): 1 January 1983.

<sup>(2)</sup> As of 17 February 2006.

<sup>(3)</sup> Date of repeal within the meaning of Article 27(3): 3 June 2015.

<sup>(4)</sup> As of 21 November 2003.

|                         |                                     |   |
|-------------------------|-------------------------------------|---|
|                         | Clinical neurophysiology            | Dental, oral and maxillo-facial surgery (basic medical and dental training) <sup>(1)</sup>              |
|                         | Minimum period of training: 4 years | Minimum period of training: 4 years   |
| Country                 | Title                               | Title   |
| Belgique/België/Belgien |                                     | Stomatologie et chirurgie orale et maxillo-faciale/Stomatologie en mond-, kaak- en aangezichtschirurgie |
| България                |                                     | Дентална, орална и лицево-челюстна хирургия   |
| Česká republika         |                                     |   |
| Danmark                 |                                     |   |
| Deutschland             |                                     | — Mund-, Kiefer- und Gesichtschirurgie<br>— Mund-Kiefer-Gesichtschirurgie <sup>(2)</sup>                |
| Eesti                   |                                     |   |
| Ελλάς                   |                                     | Στοματική και Γναθοπροσωπική Χειρουργική <sup>(3)</sup>   |
| España                  | Neurofisiología clínica             |   |
| France                  |                                     |   |
| Hrvatska                |                                     |   |
| Ireland                 | Clinical neurophysiology            | Oral and maxillo-facial surgery   |
| Italia                  |                                     |   |

|                |  |  |
|----------------|--|--|
|                | Clinical neurophysiology                         | Dental, oral and maxillo-facial surgery (basic medical and dental training) <sup>(1)</sup> |
|                | Minimum period of training: 4 years              | Minimum period of training: 4 years  |
| Country        | Title  | Title  |
| Κύπρος         |  | Στοματο-Γναθο-Προσωποχειρουργική   |
| Latvija        |  |  |
| Lietuva        |  |  |
| Luxembourg     |  | Chirurgie dentaire, orale et maxillo-faciale   |
| Magyarország   |  | Arc-állcsont-szájsebészet  |
| Malta          | Newrofiżjoloġija Klinika                         | Kirurgija tal-ghadam tal-wieċ  |
| Nederland      |  |  |
| Österreich     |  | Mund-, Kiefer- und Gesichtschirurgie   |
| Polska         |  |  |
| Portugal       |  |  |
| România        |  | Chirurgie Orală și Maxilo-facială <sup>(4)</sup>   |
| Slovenija      |  |  |
| Slovensko      |  |  |
| Suomi/Finland  | Kliininen neurofysiologia/Klinisk neurofysiologi | Suu- ja leukakirurgia/Oral och maxillofacial kirurgi                                       |
| Sverige        | Klinisk neurofysiologi                           |  |
| United Kingdom | Clinical neurophysiology                         | Oral and maxillo-facial surgery  |

<sup>(1)</sup> Training leading to the award of evidence of formal qualifications as a specialist in dental, oral and maxillo-facial surgery (basic medical and dental training) assumes completion and validation of basic medical studies (Article 24) and, in addition, completion and validation of basic dental studies (Article 34).

<sup>(2)</sup> As of 2006.

<sup>(3)</sup> As of 10 July 2014.

<sup>(4)</sup> As of 2009.

|                         |                                       |                                     |
|-------------------------|---------------------------------------|-------------------------------------|
|                         | Medical oncology                      | Medical genetics                    |
|                         | Minimum period of training: 5 years   | Minimum period of training: 4 years |
| Country                 | Title                                 | Title                               |
| Belgique/België/Belgien | Oncologie médicale/Medische oncologie |                                     |
| България                | Медицинска онкология                  | Медицинска генетика                 |



|                 | Medical oncology                    | Medical genetics                    |
|-----------------|-------------------------------------|-------------------------------------|
|                 | Minimum period of training: 5 years | Minimum period of training: 4 years |
| Country         | Title                               | Title                               |
| Česká republika | Klinická onkologie                  | Lékařská genetika                   |
| Danmark         |                                     | Klinisk genetik                     |
| Deutschland     |                                     | Humangenetik                        |
| Eesti           |                                     | Meditsiinigeneetika                 |
| Ελλάς           | Παθολογική Ογκολογία                |                                     |
| España          | Oncología Médica                    |                                     |
| France          | Oncologie                           | Génétique médicale                  |
| Hrvatska        |                                     |                                     |
| Ireland         | Medical oncology                    | Clinical genetics                   |
| Italia          | Oncologia medica                    | Genetica medica                     |
| Κύπρος          | Ακτινοθεραπευτική Ογκολογία         |                                     |
| Latvija         | Onkoloģija ķīmijterapija            | Medicīnas ģenētika                  |
| Lietuva         | Chemoterapinė onkologija            | Genetika                            |
| Luxembourg      | Oncologie médicale                  | Médecine génétique                  |
| Magyarország    | Klinikai onkológia                  | Klinikai genetika                   |
| Malta           |                                     | Ġenetika Klinika/Medika             |
| Nederland       |                                     | Klinische genetica                  |
| Österreich      |                                     | Medizinische Genetik                |
| Polska          | Onkologia kliniczna                 | Genetyka kliniczna                  |
| Portugal        | Oncologia médica                    | Genética médica                     |
| România         | Oncologie medicală                  | Genetică medicală                   |
| Slovenija       | Internistična onkologija            | Klinična genetika                   |
| Slovensko       | Klinická onkológia                  | Lekárska genetika                   |

|                | Medical oncology                    | Medical genetics                           |
|----------------|-------------------------------------|--|
|                | Minimum period of training: 5 years | Minimum period of training: 4 years        |
| Country        | Title                               | Title                                      |
| Suomi/Finland  |                                     | Perinnöllisyyslääketiede/Medicinsk genetik |
| Sverige        | Onkologi                            | Klinisk genetik                            |
| United Kingdom | Medical oncology                    | Clinical genetics                          |

#### 5.1.4. Evidence of formal qualifications of general practitioners

| Country                     | Evidence of formal qualifications  | Professional title                                       | Reference date |
|-----------------------------|--|--|----------------|
| België/Belgique/<br>Belgien | Bijzondere beroepstitel van huisarts/<br>Titre professionnel particulier de mé-<br>decin généraliste               | Huisarts/Médecin généraliste                             | 31.12.1994     |
| България                    | Свидетелство за призната специалност<br>по Обща медицина   | Лекар-специалист по Обща медицина                        | 1.1.2007       |
| Česká republika             | Diplom o specializaci všeobecné prak-<br>tické lékařství   | Všeobecný praktický lékař                                | 1.5.2004       |
| Danmark                     | Bevis for tilladelse til at betegne sig<br>som speciallæge i almen medicin   | Alment praktiserende læge/Speciallæge<br>i almen medicin | 31.12.1994     |
| Deutschland                 | Zeugnis über die spezifische Ausbil-<br>dung in der Allgemeinmedizin   | Facharzt/Fachärztin für Allgemeinme-<br>dizin            | 31.12.1994     |
| Eesti                       | Residentuuri lõpetamist tõendav tun-<br>nistus<br>Diplom peremeditsiini erialal                                    | Perearst   | 1.5.2004       |
| Ελλάς                       | Τίτλος ιατρικής ειδικότητας γενικής<br>ιατρικής  | Ιατρός με ειδικότητα γενικής ιατρικής                    | 31.12.1994     |
| España                      | Título de especialista en medicina<br>familiar y comunitaria   | Especialista en medicina familiar y<br>comunitaria       | 31.12.1994     |
| France                      | Diplômes d'études spécialisées de mé-<br>decine générale accompagnés du di-<br>plôme d'Etat de docteur en médecine | Médecin qualifié en médecine générale                    | 31.12.1994     |
| Hrvatska                    | Diploma o specijalističkom usavrša-<br>vanju   | specijalist obiteljske medicine                          | 1.7.2013       |
| Ireland                     | Certificate of specific qualifications in<br>general medical practice  | General medical practitioner                             | 31.12.1994     |

| Country      | Evidence of formal qualifications  | Professional title   | Reference date |
|--------------|--|--|----------------|
| Italia       | — Attestato di formazione specifica in medicina generale<br>— Diploma di formazione specifica in medicina generale   | Medico di medicina generale  | 31.12.1994     |
| Κύπρος       | Τίτλος Ειδικότητας Γενικής Ιατρικής  | Ιατρός Γενικής Ιατρικής  | 1.5.2004       |
| Latvija      | Çimenes ārsta sertifikāts  | Çimenes (vispārējās prakses) ārsts   | 1.5.2004       |
| Lietuva      | 1. Šeimos gydytojo rezidentūros pažymėjimas<br>2. Rezidentūros pažymėjimas (šeimos gydytojo profesinė kvalifikacija) | Šeimos medicinos gydytojas<br>Šeimos gydytojas   | 1.5.2004       |
| Luxembourg   | Diplôme de formation spécifique en médecine générale   | Médecin généraliste  | 31.12.1994     |
| Magyarország | Háziorvostan szakorvosa bizonyítvány   | Háziorvostan szakorvosa  | 1.5.2004       |
| Malta        | Tabib tal-familja  | Medicina tal-familja   | 1.5.2004       |
| Nederland    | Certificaat van inschrijving in een specialistenregister van huisartsen<br><br>Diploma geneeskundig specialist       | Huisarts, Verpleeghuisarts en arts voor verstandelijk gehandicapte Registratie Commissie (HVRC)<br><br>Registratiecommissie Geneeskundig Specialisten (RGS) van de Koninklijke Nederlandsche Maatschappij tot Beoordeling der Geneeskunst <sup>(1)</sup> | 31.12.1994     |
| Österreich   | Diplom über die besondere Ausbildung in der Allgemeinmedizin   | Arzt für Allgemeinmedizin  | 31.12.1994     |
| Polska       | Dyplom uzyskania tytułu specjalisty w dziedzinie medycyny rodzinnej  | Specjalista w dziedzinie medycyny rodzinnej  | 1.5.2004       |
| Portugal     | Título de especialista em medicina geral e familiar  | Especialista em medicina geral e familiar  | 31.12.1994     |
| România      | Certificat de medic specialist medicină de familie   | Medic specialist medicină de familie   | 1.1.2007       |
| Slovenija    | Potrtilo o opravljenem specialističnem izpitu iz družinske medicine  | Specialist družinske medicine/Specialistka družinske medicine  | 1.5.2004       |
| Slovensko    | Diplom o špecializácii v odbore "všeobecné lekárstvo"  | Všeobecný lekár  | 1.5.2004       |

| Country        | Evidence of formal qualifications   | Professional title  | Reference date |
|----------------|---|---|----------------|
| Suomi/Finland  | Todistus yleislääketieteen erityiskoulutuksesta/Bevis om särskild allmänläkarutbildning | Yleislääketieteen erityiskoulutuksen suorittanut laillistettu lääkäri/Legitimerad läkare som har fullgjort särskild allmänläkarutbildning | 1.1.1994       |
| Sverige        | Bevis om specialistkompetens i allmänmedicin  | Specialist i allmänmedicin  | 31.12.1994     |
| United Kingdom | Certificate of completion of training   | General practitioner  | 31.12.1994     |

<sup>(1)</sup> As of January 2013

2. Point 5.2.2 is replaced by the following:

*‘5.2.2. Evidence of formal qualifications of nurses responsible for general care*

| Country                     | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Professional title   | Reference date |
|-----------------------------|--|--|--|----------------|
| België/Belgique/<br>Belgien | <ul style="list-style-type: none"> <li>— Diploma gegradueerde verpleger/verpleegster/Diplôme d’infirmier(ère) gradué(e)/Diplom eines (einer) graduierten Krankenpflegers (-pflegerin)</li> <li>— Diploma in de ziekenhuisverpleegkunde/Brevet d’infirmier(ère) hospitalier(ère)/Brevet eines (einer) Krankenpflegers (-pflegerin)</li> <li>— Brevet van verpleegassistent(e)/Brevet d’hospitalier(ère)/Brevet einer Pflegeassistentin</li> </ul> | <ul style="list-style-type: none"> <li>— De erkende opleidingsinstututen/Les établissements d’enseignement reconnus/Die anerkannten Ausbildungsanstalten</li> <li>— De bevoegde Examencommissie van de Vlaamse Gemeenschap/Le Jury compétent d’enseignement de la Communauté française/Der zuständige Prüfungsausschuß der Deutschsprachigen Gemeinschaft</li> </ul> | <ul style="list-style-type: none"> <li>— Hospitalier(ère)/Verpleegassistent(e)</li> <li>— Infirmier(ère) hospitalier(ère)/Ziekenhuisverpleger (-verpleegster)</li> </ul> | 29.6.1979      |
| България                    | Диплома за висше образование на образователно-квалификационна степен “Бакалавър” с професионална квалификация “Медицинска сестра”  | Университет  | Медицинска сестра  | 1.1.2007       |

| Country         | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Professional title  | Reference date |
|-----------------|--|---|---|----------------|
| Česká republika | <ol style="list-style-type: none"> <li>1. Diplom o ukončení studia ve studijním programu ošetrovatelství ve studijním oboru všeobecná sestra (bakalář, Bc.)</li> <li>2. Diplom o ukončení studia ve studijním oboru diplomovaná všeobecná sestra (diplomovaný specialista, DiS.), accompanied by the following certificate: — Vysvědčení o absolutoriu</li> </ol>  | <ol style="list-style-type: none"> <li>1. Vysoká škola zřízená nebo uznaná státem</li> <li>2. Vyšší odborná škola zřízená nebo uznaná státem</li> </ol>   | <p>— Všeobecná sestra</p> <p>— Všeobecný ošetrovatel</p>          | 1.5.2004       |
| Danmark         | Bevis for uddannelsen til professionsbachelor i sygepleje  | Professionshøjskole   | Sygeplejerske   | 29.6.1979      |
| Deutschland     | Zeugnis über die staatliche Prüfung in der Krankenpflege   | Staatlicher Prüfungsausschuss   | Gesundheits- und Krankenpflegerin/Gesundheits- und Krankenpfleger | 29.6.1979      |
| Eesti           | <ol style="list-style-type: none"> <li>1. Diplom õe erialal</li> <li>2. Õe põhikoolituse diplom</li> <li>3. Õe põhiõpe diplom</li> </ol>   | <ol style="list-style-type: none"> <li>1. Tallinna Meditsiinikool<br/>Tartu Meditsiinikool<br/>õde</li> <li>2. Tallinna Tervishoiu Kõrgkool</li> <li>3. Tartu Tervishoiu Kõrgkool</li> </ol>  | Kohtla-Järve Meditsiinikool                                       | 1.5.2004       |
| Ελλάς           | <ol style="list-style-type: none"> <li>1. Πτυχίο Νοσηλευτικής Παν/μίου Αθηνών</li> <li>2. Πτυχίο Νοσηλευτικής Τεχνολογικών Εκπαιδευτικών Ιδρυμάτων (Τ.Ε.Ι.)</li> <li>3. Πτυχίο Αξιωματικών Νοσηλευτικής</li> <li>4. Πτυχίο Αδελφών Νοσοκόμων πρώην Ανωτέρων Σχολών Υπουργείου Υγείας και Πρόνοιας</li> <li>5. Πτυχίο Αδελφών Νοσοκόμων και Επισκεπτριών πρώην Ανωτέρων Σχολών Υπουργείου Υγείας και Πρόνοιας</li> <li>6. Πτυχίο Τμήματος Νοσηλευτικής</li> <li>7. Πτυχίο Τμήματος Νοσηλευτικής Πανεπιστημίου Πελοποννήσου</li> </ol> | <ol style="list-style-type: none"> <li>1. Πανεπιστήμιο Αθηνών</li> <li>2. Τεχνολογικά Εκπαιδευτικά Ιδρύματα Υπουργείου Εθνικής Παιδείας και Θρησκευμάτων</li> <li>3. Υπουργείο Εθνικής Άμυνας</li> <li>4. Υπουργείο Υγείας και Πρόνοιας</li> <li>5. Υπουργείο Υγείας και Πρόνοιας</li> <li>6. ΚΑΤΕΕ Υπουργείου Εθνικής Παιδείας και Θρησκευμάτων</li> <li>7. Πανεπιστήμιο Πελοποννήσου</li> </ol> | Διπλωματούχος ή πτυχιούχος νοσοκόμος, νοσηλεύτης ή νοσηλεύτρια    | 1.1.1981       |

| Country  | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Professional title   | Reference date |
|----------|---|---|--|----------------|
| España   | Título de Diplomado universitario en Enfermería   | — Ministerio de Educación y Cultura<br>— El rector de una Universidad   | Enfermero/a diplomado/a  | 1.1.1986       |
|          | Titulo de Graduado/a en Enfermería  | — El rector de una Universidad  | Graduado/a en Enfermería   | 1.1.1986       |
| France   | — Diplôme d'Etat d'infirmier (ère)<br>— Diplôme d'Etat d'infirmier (ère) délivré en vertu du décret no 99-1147 du 29 décembre 1999  | Le ministère de la santé  | Infirmier(ère)   | 29.6.1979      |
| Hrvatska | 1. Svjedodžba “medicinska sestra opće njege/medicinski tehničar opće njege”<br><br>2. Svjedodžba “prvostupnik (baccalaureus) sestrinstva/prvostupnica (baccalaurea) sestrinstva”  | 1. Srednje strukovne škole koje izvode program za stjecanje kvalifikacije “medicinska sestra opće njege/medicinski tehničar opće njege”<br><br>2. Medicinski fakulteti sveučilišta u Republici Hrvatskoj<br>Sveučilišta u Republici Hrvatskoj<br>Veleučilišta u Republici Hrvatskoj   | 1. medicinska sestra opće njege/medicinski tehničar opće njege<br><br>2. prvostupnik (baccalaureus) sestrinstva/prvostupnica (baccalaurea) sestrinstva | 1.7.2013       |
| Ireland  | 1. Certificate of Registered General Nurse <sup>(1)</sup><br><br>2. B.Sc. in Nursing Studies (General) approved by the NMBI <sup>(2)</sup><br><br>3. B.Sc. in Children's and General (Integrated) Nursing approved by the NMBI <sup>(2)</sup> | 1. An Bórd Altranais (The Nursing Board) [up to 1 October 2012];<br><br>Bórd Altranais agus Cnáimhseachais na hEireann (The Nursing and Midwifery Board of Ireland) [from 2 October 2012]<br><br>2. Third-level Institution delivering the B.Sc. in Nursing Studies approved by the NMBI [as of September 2002]<br><br>3. Third-level Institution delivering the B.Sc. in Children's and General (Integrated) Nursing approved by the NMBI [as of September 2006] | Registered General Nurse (RGN)   | 29.6.1979      |

| Country    | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Professional title   | Reference date |
|------------|---|---|--|----------------|
| Italia     | 1. Diploma di infermiere professionale <sup>(4)</sup><br>2. Diploma di laurea in infermieristica <sup>(5)</sup>   | 1. Scuole riconosciute dallo Stato <sup>(4)</sup><br>2. Università <sup>(5)</sup>   | 1. Infermiere professionale <sup>(4)</sup><br>2. Infermiere <sup>(5)</sup> | 29.6.1979      |
| Κύπρος     | Δίπλωμα Γενικής Νοσηλευτικής<br>Πτυχίο Νοσηλευτικής Τεχνολογικού Πανεπιστημίου Κύπρου<br>Πτυχίο Νοσηλευτικής Ευρωπαϊκού Πανεπιστημίου Κύπρου<br>Πτυχίο Νοσηλευτικής Πανεπιστημίου Λευκωσίας — BSc in Nursing<br>Πτυχίο Γενικής Νοσηλευτικής   | Νοσηλευτική Σχολή<br>Τεχνολογικό Πανεπιστήμιο Κύπρου<br>Ευρωπαϊκό Πανεπιστήμιο Κύπρου<br>Πανεπιστήμιο Λευκωσίας University of Nicosia<br>Σχολή Επιστημών Υγείας, Πανεπιστήμιο Frederick | Εγγεγραμμένος Νοσηλευτής<br>Νοσηλευτής(τρια) Γενικής Νοσηλευτικής          | 1.5.2004       |
| Latvija    | 1. Diploms par māsas kvalifikācijas iegūšanu<br>2. Māsas diploms  | 1. Māsu skolas<br>2. Universitātes tipa augstskola pamatojoties uz Valsts eksāmenu komisijas lēmumu   | Māsa   | 1.5.2004       |
| Lietuva    | 1. Aukštojo mokslo diplomas, nurodantis suteiktą bendrosios praktikos slaugytojo profesinę kvalifikaciją<br>2. Aukštojo mokslo diplomas (neuniversitetinės studijos), nurodantis suteiktą bendrosios praktikos slaugytojo profesinę kvalifikaciją<br>3. Bakalauro diplomas (slaugos bakalauro kvalifikacinis laipsnis ir bendrosios praktikos slaugytojo profesinė kvalifikacija)<br>4. Profesinio bakalauro diplomas (slaugos profesinio bakalauro kvalifikacinis laipsnis ir bendrosios praktikos slaugytojo profesinė kvalifikacija) | 1. Universitetas<br>2. Kolegija<br>3. Universitetas<br>4. Kolegija  | Bendrosios praktikos slaugytojas   | 1.5.2004       |
| Luxembourg | — Diplôme d'Etat d'infirmier<br>— Diplôme d'Etat d'infirmier hospitalier gradué   | Ministère de l'éducation nationale, de la formation professionnelle et des sports   | Infirmier  | 29.6.1979      |



| Country      | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Professional title  | Reference date |
|--------------|--|--|---|----------------|
| Magyarország | 1. Ápoló bizonyítvány<br>2. Ápoló oklevél<br>3. Okleveles ápoló oklevél  | 1. Szakképző iskola<br>2. Felsőoktatási intézmény<br>3. Felsőoktatási intézmény  | Ápoló   | 1.5.2004       |
| Malta        | Lawrja jew diploma fl-istudji tal-infermerija  | Universita `ta' Malta'   | Infermier Registrat tal-Ewwel Livell  | 1.5.2004       |
| Nederland    | 1. Diploma's verpleger A, verpleegster A, verpleegkundige A<br>2. Diploma verpleegkundige MBOV (Middelbare Beroepsopleiding Verpleegkundige)<br>3. Diploma verpleegkundige HBOV (Hogere Beroepsopleiding Verpleegkundige)<br>4. Diploma beroepsonderwijs verpleegkundige — Kwalificatieniveau 4<br>5. Diploma hogere beroepsopleiding verpleegkundige — Kwalificatieniveau 5 | 1. Door een van overheidswege benoemde examencommissie<br>2. Door een van overheidswege benoemde examencommissie<br>3. Door een van overheidswege benoemde examencommissie<br>4. Door een van overheidswege aangewezen opleidingsinstelling<br>5. Door een van overheidswege aangewezen opleidingsinstelling | Verpleegkundige   | 29.6.1979      |
| Österreich   | 1. Diplom über die Ausbildung in der allgemeinen Gesundheits- und Krankenpflege<br>2. Diplom als "Diplomierte Krankenschwester, Diplomierter Krankenpfleger"<br>3. Diplom über den Abschluss des Fachhochschul-Bachelorstudiengangs "Gesundheits- und Krankenpflege"   | 1. Schule für allgemeine Gesundheits- und Krankenpflege<br>2. Allgemeine Krankenschule<br>3. Fachhochschulrat/Fachhochschule   | — Diplomierte Gesundheits- und Krankenschwester<br>— Diplomierter Gesundheits- und Krankenpfleger | 1.1.1994       |
| Polska       | — Dyplom ukończenia studiów wyższych na kierunku pielęgniarstwo z tytułem "magister pielęgniarstwa"<br>— Dyplom ukończenia studiów wyższych zawodowych na kierunku/specjalności pielęgniarstwo z tytułem "licencjat pielęgniarstwa"  | Instytucja prowadząca kształcenie na poziomie wyższym uznana przez właściwe władze   | Pielęgniarka  | 1.5.2004       |

| Country       | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Professional title   | Reference date |
|---------------|---|---|--|----------------|
| Portugal      | <ol style="list-style-type: none"> <li>1. Diploma do curso de enfermagem geral</li> <li>2. Diploma/carta de curso de bacharelato em enfermagem</li> <li>3. Diploma/Carta de curso de licenciatura em enfermagem</li> </ol>  | <ol style="list-style-type: none"> <li>1. Escolas de Enfermagem</li> <li>2. Escolas Superiores de Enfermagem</li> <li>3. Escolas Superiores de Enfermagem; Escolas Superiores de Saúde</li> </ol> | Enfermeiro   | 1.1.1986       |
| România       | <ol style="list-style-type: none"> <li>1. Diplomă de absolvire de asistent medical generalist cu studii superioare de scurtă durată</li> <li>2. Diplomă de licență de asistent medical generalist cu studii superioare de lungă durată</li> <li>3. Certificat de competențe profesionale (de asistent medical generalist)</li> <li>4. Certificat de calificare nivel 5</li> <li>5. Certificat de calificare profesională nivel 5</li> </ol> | <ol style="list-style-type: none"> <li>1. Universități</li> <li>2. Universități</li> <li>3. Ministerul Educației Naționale</li> </ol>   | Asistent medical generalist                                | 1.1.2007       |
| Slovenija     | Diploma, s katero se podeljuje strokovni naslov "diplomirana medicinska sestra/diplomirani zdravstvenik"  | <ol style="list-style-type: none"> <li>1. Univerza</li> <li>2. Visoka strokovna šola</li> </ol>   | Diplomirana medicinska sestra/<br>Diplomirani zdravstvenik | 1.5.2004       |
| Slovensko     | <ol style="list-style-type: none"> <li>1. DIPLOM ošetrovatelstvo "magister" ("Mgr.")</li> <li>2. DIPLOM ošetrovatelstvo "bakalár" ("Bc.")</li> <li>3. DIPLOM diplomovaná všeobecná sestra</li> </ol>  | <ol style="list-style-type: none"> <li>1. Vysoká škola/Univerzita</li> <li>2. Vysoká škola/Univerzita</li> <li>3. Stredná zdravotnícka škola</li> </ol>   | Sestra   | 1.5.2004       |
| Suomi/Finland | <ol style="list-style-type: none"> <li>1. Sairaanhoidajan tutkinto/Sjukskötarexamen</li> <li>2. Sosiaali- ja terveystieteiden ammattikorkeakoulututkinto, sairaanhoitaja (AMK)/Yrke-shögskoleexamen inom hälsovård och det sociala området, sjukskötare (YH)</li> </ol>   | <ol style="list-style-type: none"> <li>1. Terveystieteiden oppilaitokset/<br/>Hälsövärdsläroanstalter</li> <li>2. Ammattikorkeakoulut/Yrke-shögskolor</li> </ol>                                  | Sairaanhoidaja/Sjukskötare                                 | 1.1.1994       |

| Country        | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Professional title       | Reference date |
|----------------|---|---|--------------------------|----------------|
| Sverige        | Sjuksköterskeexamen   | Universitet eller högskola  | Sjuksköterska            | 1.1.1994       |
| United Kingdom | A qualification approved by the Nursing and Midwifery Council or one of its predecessor bodies as attesting to the completion of training required for general nurses by Article 31 and the standard of proficiency as required for registration as a Registered Nurse — Adult in its register <sup>(3)</sup> | Education institutions approved by the Nursing and Midwifery Council or one of its predecessor bodies | Registered Nurse — Adult | 29.6.1979      |

<sup>(1)</sup> This evidence of formal qualification entitles the holder to automatic recognition when it is issued to the nationals of Member States who obtained qualification in Ireland.

<sup>(2)</sup> This information on the evidence of qualifications was included to ensure that graduates trained in Ireland would be entitled to automatic recognition without the need for actual registration in Ireland, such registration not being part of the qualification process.

<sup>(3)</sup> This information on the evidence of qualifications replaces previous entries for the UK in order to ensure that graduates trained in the United Kingdom would be entitled to automatic recognition of their qualification without the need for actual registration, such registration not being part of the qualification process.

<sup>(4)</sup> Valid until 2001.

<sup>(5)</sup> As of 2001/2002.

3. Points 5.3.2 and 5.3.3 are replaced by the following:

*‘5.3.2. Evidence of basic formal qualifications of dental practitioners*

| Country                     | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Professional title  | Reference date |
|-----------------------------|---|---|---|---|----------------|
| België/Belgique/<br>Belgien | Diploma van tandarts/<br>Diplôme licencié en<br>science dentaire  | — De universiteiten/<br>Les universités<br><br>— De bevoegde Examencommissie van de Vlaamse Gemeenschap/Le Jury compétent d'enseignement de la Communauté française |   | Licentiaat in de tandheelkunde/Licencié en science dentaire | 28.1.1980      |
| България                    | Диплома за висше образование на образователно-квалификационна степен “Магистър” по “Дентална медицина” с професионална квалификация “Магистър-лекар по дентална медицина” | Университет   |   | Лекар по дентална медицина                                  | 1.1.2007       |

| Country         | Evidence of formal qualifications   | Body awarding the evidence of qualifications                 | Certificate accompanying the evidence of qualifications  | Professional title                                     | Reference date       |
|-----------------|---|--|--|--|----------------------|
| Česká republika | Diplom o ukončení studia ve studijním programu zubní lékařství (doktor zubního lékařství, MDDr.)                        | Lékařská fakulta univerzity v České republice                |  | Zubní lékař  | 1.5.2004             |
| Danmark         | Bevis for kandidatuddannelsen i odontologi (cand.odont.)  | Universitet<br>Styrelsen for Patientsikkerhed                | 1. Autorisation som tandlæge, udstedt af Sundhedsstyrelsen<br>2. Tilladelse til selvstændig virke som tandlæge | Tandlæge   | 28.1.1980            |
| Deutschland     | Zeugnis über die Zahnärztliche Prüfung  | Zuständige Behörden  |  | Zahnarzt   | 28.1.1980            |
| Eesti           | Hambaarstikraad <i>Degree in Dentistry (DD)</i><br>Diplom hambaarstiteaduse õppekava läbimise kohta                     | Tartu Ülikool  |  | Hambaarst  | 1.5.2004             |
| Ελλάς           | Πτυχίο Οδοντιατρικής  | Πανεπιστήμιο   |  | Οδοντίατρος ή χειρουργός οδοντίατρος                   | 1.1.1981             |
| España          | Título de Licenciado en Odontología<br>Título de Graduado/a en Odontología  | El rector de una universidad<br>El rector de una Universidad |  | Licenciado en Odontología<br>Graduado/a en Odontología | 1.1.1986<br>1.1.1986 |
| France          | Diplôme d'Etat de docteur en chirurgie dentaire   | Universités  |  | Chirurgien-dentiste                                    | 28.1.1980            |
| Hrvatska        | Diploma "doktor dentalne medicine/doktorica dentalne medicine"  | Fakulteti sveučilišta u Republici Hrvatskoj                  |  | doktor dentalne medicine/doktorica dentalne medicine   | 1.7.2013             |
| Ireland         | — Bachelor in Dental Science (B.Dent.Sc.)<br>— Bachelor of Dental Surgery (BDS)<br>— Licentiate in Dental Surgery (LDS) | — Universities<br>— Royal College of Surgeons in Ireland     |  | — Dentist<br>— Dental practitioner<br>— Dental surgeon | 28.1.1980            |
| Italia          | Diploma di laurea in Odontoiatria e Protesi Dentaria  | Università   | Diploma di abilitazione all'esercizio della professione di odontoiatra   | Odontoiatra  | 28.1.1980            |

| Country      | Evidence of formal qualifications  | Body awarding the evidence of qualifications                          | Certificate accompanying the evidence of qualifications   | Professional title    | Reference date |
|--------------|--|---|---|-----------------------|----------------|
| Κύπρος       | Πιστοποιητικό Εγγραφής Οδοντιάτρου   | Οδοντιατρικό Συμβούλιο  |   | Οδοντίατρος           | 1.5.2004       |
| Latvija      | Zobārsta diploms   | Universitātes tipa augstskola   | Sertifikāts — kompetentas iestādes izsniegts dokuments, kas apliecina, ka persona ir nokārtojusi sertifikācijas eksāmenu zobārstniecībā   | Zobārsts              | 1.5.2004       |
| Lietuva      | 1. Aukštojo mokslo diplomas, nurodantis suteiktą gydytojo odontologo kvalifikaciją<br>2. Magistro diplomas (odontologijos magistro kvalifikacinis laipsnis ir gydytojo odontologo kvalifikacija) | Universitetas   | 1. Internatūros pažymėjimas, nurodantis suteiktą gydytojo odontologo profesinę kvalifikaciją<br>2. Internatūros pažymėjimas (gydytojo odontologo profesinė kvalifikacija)                       | Gydytojas odontologas | 1.5.2004       |
| Luxembourg   | Diplôme d'Etat de docteur en médecine dentaire   | Jury d'examen d'Etat  |   | Médecin-dentiste      | 28.1.1980      |
| Magyarország | Okleveles fogorvos doktor oklevél (doctor medicinae dentariae, dr. med. dent)  | Egyetem   |   | Fogorvos              | 1.5.2004       |
| Malta        | Lawrja fil-Kirurgija Dentali   | Universita` ta Malta  |   | Kirurgu Dentali       | 1.5.2004       |
| Nederland    | Universitair getuig-schrift van een met goed gevolg afgelegd tandartsexamen  | Faculteit Tandheelkunde   |   | Tandarts              | 28.1.1980      |
| Österreich   | Bescheid über die Verleihung des akademischen Grades "Doktor der Zahnheilkunde"  | — Medizinische Universität<br>— Medizinische Fakultät der Universität |   | Zahnarzt              | 1.1.1994       |
| Polska       | Dyplom ukończenia studiów wyższych na kierunku lekarsko-dentystycznym lekarskim z tytułem "lekarz dentysta"  | Szkoły wyższe   | Świadectwo złożenia Lekarsko — Dentystycznego Egzaminu Państwowego <sup>(1)</sup> <sup>(3)</sup> / Świadectwo złożenia Lekarsko-Dentystycznego Egzaminu Końcowego <sup>(2)</sup> <sup>(3)</sup> | Lekarz dentysta       | 1.5.2004       |

| Country        | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Professional title   | Reference date            |
|----------------|--|---|---|--|---------------------------|
| Portugal       | — Carta de curso de licenciatura em medicina dentária<br><br>— Mestrado integrado em medicina dentária | — Faculdades<br>— Institutos Superiores   |   | Médico dentista  | 1.1.1986<br><br>24.3.2006 |
| România        | Diplomă de licență de medic dentist<br><br>Diploma de licență și master <sup>(4)</sup>                 | — Universități<br><br>— Ministerul Educației Naționale <sup>(4)</sup>   |   | Medic dentist<br><br>Doctor-medic stomatologie <sup>(5)</sup>  | 1.10.2003                 |
| Slovenija      | Diploma, s katero se podeljuje strokovni naslov “doktor dentalne medicine/doktorica dentalne medicine” | — Univerza  | Potrđilo o opravljenem strokovnem izpitu za poklic doktor dentalne medicine/doktorica dentalne medicine   | Doktor dentalne medicine/Doktorica dentalne medicine           | 1.5.2004                  |
| Slovensko      | DIPLOM zubné lekárstvo doktor zubného lekárstva (“MDDr.”)  | Univerzita  |   | Zubný lekár  | 1.5.2004                  |
| Suomi/Finland  | Hammaslääketieteen lisensiaatin tutkinto/Odontologie licentiatexamen                                   | — Helsingin yliopisto/Helsingfors universitet<br>— Oulun yliopisto<br>— Itä-Suomen yliopisto<br>— Turun yliopisto | Sosiaali- ja terveystieteiden ja valvontaviraston päätös käytännön palvelun hyväksymisestä/Beslut av Tillståndsoch tillsynsverket för social- och hälsovården om godkännande av praktisk tjänstgöring | Hammaslääkäri/Tandläkare                                       | 1.1.1994                  |
| Sverige        | Tandläkarexamen  | Universitet eller högskola  | Bevis om legitimation som tandläkare, utfärdat av Socialstyrelsen   | Tandläkare   | 1.1.1994                  |
| United Kingdom | — Bachelor of Dental Surgery (BDS or B.Ch.D.)<br><br>— Licentiate in Dental Surgery                    | — Universities<br><br>— Royal Colleges  |   | — Dentist<br><br>— Dental practitioner<br><br>— Dental surgeon | 28.1.1980                 |

<sup>(1)</sup> Until 2012.<sup>(2)</sup> As of 2013.<sup>(3)</sup> Until 1 October 2016, the evidence of formal qualifications should also be accompanied by a certificate of completion of the postgraduate internship (“staż podyplomowy”).<sup>(4)</sup> As of 1 October 2011.<sup>(5)</sup> As of 1 September 2017.

## 5.3.3. Evidence of formal qualifications of specialised dentists

| Oral surgery                |   |  |                |
|-----------------------------|---|--|----------------|
| Country                     | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Reference date |
| België/Belgique/<br>Belgien |   |  |                |
| България                    | Свидетелство за призната специалност по “Орална хирургия”                                 | Факултет по дентална медицина към Медицински университет                                 | 1.1.2007       |
| Česká republika             | Diplom o specializaci (v oboru orální a maxilofaciální chirurgie)                         | 1. Institut postgraduálního vzdělávání ve zdravotnictví<br>2. Ministerstvo zdravotnictví | 19.7.2007      |
| Danmark                     | Bevis for tilladelse til at betegne sig som specialtandlæge i tand-, mund- og kæbekirurgi | Sundhedsstyrelsen<br>Styrelsen for Patientsikkerhed                                      | 28.1.1980      |
| Deutschland                 | Fachzahnärztliche<br>Anerkennung für Oralchirurgie/Mund-<br>chirurgie                     | Landeszahnärztekammer  | 28.1.1980      |
| Eesti                       |   |  |                |
| Ελλάς                       | Τίτλος Οδοντιατρικής ειδικότητας της Γναθοχειρουργικής (up to 31.12.2002)                 | — Περιφέρεια<br>— Νομαρχιακή Αυτοδιοίκηση<br>— Νομαρχία                                  | 1.1.2003       |
| España                      |   |  |                |
| France                      | Diplôme d'études spécialisées de chirurgie orale  | Universités  | 31.3.2011      |
| Hrvatska                    |   |  |                |
| Ireland                     | Certificate of specialist dentist in oral surgery   | Competent authority recognised for this purpose by the competent minister                | 28.1.1980      |
| Italia                      | Diploma di specialista in Chirurgia Orale   | Università   | 21.5.2005      |
| Κύπρος                      | Πιστοποιητικό Αναγνώρισης του Ειδικού Οδοντίατρου στην Στοματική Χειρουργική              | Οδοντιατρικό Συμβούλιο   | 1.5.2004       |
| Latvija                     |   |  |                |



| Oral surgery   |   |   |                |
|----------------|---|---|----------------|
| Country        | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Reference date |
| Lietuva        | 1. Rezidentūros pažymėjimas, nurodantis suteiktą burnos chirurgo profesinę kvalifikaciją<br>2. Rezidentūros pažymėjimas (burnos chirurgo profesinė kvalifikacija) | Universitetas   | 1.5.2004       |
| Luxembourg     |   |   |                |
| Magyarország   | Dento-alveoláris sebészet szakorvosa bizonyítvány   | Nemzeti Vizsgabizottság   | 1.5.2004       |
| Malta          | Ċertifikat ta' speċjalista dentali fil-Kirurgija tal-halq   | Kumitat ta' Approvazzjoni dwar Speċjalisti  | 1.5.2004       |
| Nederland      | Bewijs van inschrijving als kaakchirurg in het Specialistenregister   | Registratiecommissie Tandheelkundige Specialismen (RTS) van de Koninklijke Nederlandse Maatschappij tot bevordering der Tandheelkunde | 28.1.1980      |
| Österreich     |   |   |                |
| Polska         | Dyplom uzyskania tytułu specjalisty w dziedzinie chirurgii stomatologicznej   | Centrum Egzaminów Medycznych  | 1.5.2004       |
| Portugal       | Título de Especialista em Cirurgia Oral   | Ordem dos Médicos Dentistas (OMD)   | 4.6.2008       |
| România        | Certificatul de specialist în Chirurgie dento-alveolară   | Ministerul Sănătății  | 17.12.2008     |
| Slovenija      | Potrđilo o opravljenem specialističnem izpitu iz oralne kirurgije   | 1. Ministrstvo za zdravje<br>2. Zdravniška zbornica Slovenije   | 1.5.2004       |
| Slovensko      | Diplom o špecializácii v špecializačnom odbore maxilofaciálna chirurgia   | — Slovenská zdravotnícka univerzita<br>— Univerzita Pavla Jozefa Šafárika v Košiciach   | 17.12.2008     |
| Suomi/Finland  | Erikoishammaslääkärin tutkinto, suuja leukakirurgia/Specialtandläkarexamen, oral och maxillofacial kirurgi  | Yliopisto   | 1.1.1994       |
| Sverige        | Bevis om specialistkompetens i oral kirurgi   | Socialstyrelsen   | 1.1.1994       |
| United Kingdom | Certificate of completion of specialist training in oral surgery  | Competent authority recognised for this purpose   | 28.1.1980      |

| Orthodontics                |  |  |                |
|-----------------------------|--|--|----------------|
| Country                     | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Reference date |
| België/Belgique/<br>Belgien | Titre professionnel particulier de dentiste spécialiste en orthodontie/Bijzondere beroepstitel van tandarts specialist in de orthodontie | Ministre de la Santé publique/Minister bevoegd voor Volksgezondheid                      | 27.1.2005      |
| България                    | Свидетелство за призната специалност по “Ортодонтия”   | Факултет по дентална медицина към Медицински университет                                 | 1.1.2007       |
| Česká republika             | Diplom o specializaci (v oboru ortodontie)   | 1. Institut postgraduálního vzdělávání ve zdravotnictví<br>2. Ministerstvo zdravotnictví | 19.7.2007      |
| Danmark                     | Bevis for tilladelse til at betegne sig som specialtandlæge i ortodonti  | Sundhedsstyrelsen<br>Styrelsen for Patientsikkerhed                                      | 28.1.1980      |
| Deutschland                 | Fachzahnärztliche Anerkennung für Kieferorthopädie   | Landeszahnärztekammer  | 28.1.1980      |
| Eesti                       | Residentuuri lõputunnistus ortodontia erialal<br>Ortodontia residentuuri lõpetamist tõendav tunnistus                                    | Tartu Ülikool  | 1.5.2004       |
| Ελλάς                       | Τίτλος Οδοντιατρικής ειδικότητας της Ορθοδοντικής  | — Περιφέρεια<br>— Νομαρχιακή Αυτοδιοίκηση<br>— Νομαρχία                                  | 1.1.1981       |
| España                      |  |  |                |
| France                      | Titre de spécialiste en orthodontie  | Conseil National de l'Ordre des chirurgiens dentistes                                    | 28.1.1980      |
| Hrvatska                    |  |  |                |
| Ireland                     | Certificate of specialist dentist in orthodontics  | Competent authority recognised for this purpose by the competent minister                | 28.1.1980      |
| Italia                      | Diploma di specialista in Ortognatodonzia  | Università   | 21.5.2005      |
| Κύπρος                      | Πιστοποιητικό Αναγνώρισης του Ειδικού Οδοντίατρου στην Ορθοδοντική   | Οδοντιατρικό Συμβούλιο   | 1.5.2004       |
| Latvija                     | “Sertifikāts” – kompetentas iestādes izsniegts dokuments, kas apliecina, ka persona ir nokārtojusi sertifikācijas eksāmenu ortodontijā   | Latvijas Ārstu biedrība  | 1.5.2004       |

| Orthodontics   |   |   |                |
|----------------|---|---|----------------|
| Country        | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Reference date |
| Lietuva        | 1. Rezidentūros pažymėjimas, nurodantis suteiktą gydytojo ortodonto profesinę kvalifikaciją<br>2. Rezidentūros pažymėjimas (gydytojo ortodonto profesinė kvalifikacija) | Universitetas   | 1.5.2004       |
| Luxembourg     |   |   |                |
| Magyarország   | Fogszabályozás szakorvosa bizonyítvány  | Nemzeti Vizsgabizottság   | 1.5.2004       |
| Malta          | Ċertifikat ta' speċjalista dentali fl-Ortodonzja  | Kumitat ta' Approvazzjoni dwar Speċjalisti  | 1.5.2004       |
| Nederland      | Bewijs van inschrijving als orthodontist in het Specialistenregister  | Registratiecommissie Tandheelkundige Specialismen (RTS) van de Koninklijke Nederlandse Maatschappij tot bevordering der Tandheelkunde | 28.1.1980      |
| Österreich     |   |   |                |
| Polska         | Dyplom uzyskania tytułu specjalisty w dziedzinie ortodoncji   | Centrum Egzaminów Medycznych  | 1.5.2004       |
| Portugal       | Título de Especialista em Ortodontia  | Ordem dos Médicos Dentistas (OMD)   | 4.6.2008       |
| România        | Certificatul de specialist în Ortodonție și Ortopedie dento-facială   | Ministerul Sănătății  | 17.12.2008     |
| Slovenija      | Potrđilo o opravljenem specialističnem izpitu iz čeljustne in zobne ortopedije  | 1. Ministrstvo za zdravje<br>2. Zdravniška zbornica Slovenije   | 1.5.2004       |
| Slovensko      | Diplom o špecializácii v špecializačnom odbore čelústná ortopédia   | Slovenská zdravotnícka univerzita   | 17.12.2008     |
| Suomi/Finland  | Erikoishammaslääkärin tutkinto, hampaiston oikomishoito/Specialtand-läkarexamen, tandreglering  | Yliopisto   | 1.1.1994       |
| Sverige        | Bevis om specialistkompetens i ortodonti  | Socialstyrelsen   | 1.1.1994       |
| United Kingdom | Certificate of Completion of specialist training in orthodontics  | Competent authority recognised for this purpose   | 28.1.1980.     |

4. Point 5.4.2 is replaced by the following:

## ‘5.4.2. Evidence of formal qualifications of veterinary surgeons

| Country                     | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference date             |
|-----------------------------|---|---|---|----------------------------|
| België/Belgique/<br>Belgien | Diploma van dierenarts/Diplôme de docteur en médecine vétérinaire   | — De universiteiten/Les universités<br>— De bevoegde Examencommissie van de Vlaamse Gemeenschap/Le Jury compétent d'enseignement de la Communauté française |   | 21.12.1980                 |
| България                    | Диплома за висше образование на образователно-квалификационна<br><br>степен магистър по специалност Ветеринарна медицина с професионална квалификация Ветеринарен лекар   | — Лесотехнически университет София Факултет Ветеринарна медицина<br><br>— Тракийски университет Стара Загора, Ветеринарно-медицински факултет               |   | 1.1.2007                   |
| Česká republika             | — Diplom o ukončení studia ve studijním programu veterinární lékařství (doktor veterinární medicíny, MVDr.)<br>— Diplom o ukončení studia ve studijním programu veterinární hygiena a ekologie (doktor veterinární medicíny, MVDr.)             | Veterinární fakulta univerzity v České republice  |   | 1.5.2004                   |
| Danmark                     | Bevis for kandidatuddannelsen i veterinærmedicin (cand.med. vet.)   | Københavns Universitet  |   | 21.12.1980                 |
| Deutschland                 | — Zeugnis über das Ergebnis des Dritten Abschnitts der Tierärztlichen Prüfung und das Gesamtergebnis der Tierärztlichen Prüfung<br><br>— Zeugnis über das Ergebnis der Tierärztlichen Prüfung und das Gesamtergebnis der Tierärztlichen Prüfung | Der Vorsitzende des Prüfungsausschusses für die Tierärztliche Prüfung einer Universität oder Hochschule   |   | 21.12.1980<br><br>1.1.2006 |
| Eesti                       | Diplom: täitnud veterinaarmeditsiini õppekava<br><br>Loomaarstikraad Degree in Veterinary Medicine (DVM)  | Eesti Põllumajandusülikool<br><br>Eesti Maaülikool  |   | 1.5.2004                   |

| Country  | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications          | Reference date |
|----------|--|--|--|----------------|
| Ελλάς    | Πτυχίο Κτηνιατρικής  | 1. Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης<br>2. Πανεπιστήμιο Θεσσαλίας   |  | 1.1.1981       |
| España   | Título de Licenciado en Veterinaria  | — Ministerio de Educación y Cultura<br>— El rector de una Universidad  |  | 1.1.1986       |
|          | Título de Graduado/a en Veterinaria  | — El rector de una Universidad   |  | 1.1.1986       |
| France   | Diplôme d'Etat de docteur vétérinaire  | — L'Institut d'enseignement supérieur et de recherche en alimentation, santé animale, sciences agronomiques et de l'environnement (Vet Agro Sup);<br>— L'Ecole nationale vétérinaire, agroalimentaire et de l'alimentation, Nantes-Atlantique (ONIRIS);<br>— L'Ecole nationale vétérinaire d'Alfort;<br>— L'Ecole nationale vétérinaire de Toulouse. |  | 21.12.1980     |
| Hrvatska | Diploma "doktor veterinarske medicine/doktorica veterinarske medicine"   | Veterinarski fakultet Sveučilišta u Zagrebu  |  | 1.7.2013       |
| Ireland  | — Diploma of Bachelor in/of Veterinary Medicine (MVB)<br>— Diploma of Membership of the Royal College of Veterinary Surgeons (MRCVS) |  |  | 21.12.1980     |
| Italia   | Diploma di laurea in medicina veterinaria  | Università   | Diploma di abilitazione all'esercizio della medicina veterinaria | 1.1.1985       |
| Κύπρος   | Πιστοποιητικό Εγγραφής Κτηνιάτρου  | Κτηνιατρικό Συμβούλιο  |  | 1.5.2004       |
| Latvija  | Veterinārārsta diploms   | Latvijas Lauksaimniecības Universitāte   |  | 1.5.2004       |

| Country      | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference date |
|--------------|---|---|---|----------------|
| Lietuva      | 1. Aukštojo mokslo diplomas (veterinarijos gydytojo (DVM))  | 1. Lietuvos Veterinarijos Akademijs   |   | 1.5.2004       |
|              | 2. Magistro diplomas (veterinarinės medicinos magistro kvalifikacinis laipsnis ir veterinarijos gydytojo profesinė kvalifikacija) | 2. Lietuvos sveikatos mokslų universitetas  |   |                |
| Luxembourg   | Diplôme d'Etat de docteur en médecine vétérinaire   | Jury d'examen d'Etat  |   | 21.12.1980     |
| Magyarország | Okleveles állatorvos doktor oklevél (dr. vet)   | Felsőoktatási intézmény   |   | 1.5.2004       |
| Malta        | Liċenzja ta' Kirurgu Veterinarju  | Kunsill tal-Kirurgi Veterinarji   |   | 1.5.2004       |
| Nederland    | Getuigschrift van met goed gevolg afgelegd diergeneeskundig/veeartsenijkundig examen  |   |   | 21.12.1980     |
| Österreich   | — Diplom-Tierarzt<br>— Magister medicinae veterinariae  | Universität   |   | 1.1.1994       |
| Polska       | Dyplom lekarza weterynarii  | 1. Szkoła Główna Gospodarstwa Wiejskiego w Warszawie<br>2. Akademia Rolnicza we Wrocławiu <sup>(1)</sup><br>3. Uniwersytet Przyrodniczy we Wrocławiu <sup>(2)</sup><br>4. Akademia Rolnicza w Lublinie <sup>(3)</sup><br>5. Uniwersytet Przyrodniczy w Lublinie <sup>(4)</sup><br>6. Uniwersytet Warmińsko-Mazurski w Olsztynie<br>7. Uniwersytet Przyrodniczy w Poznaniu <sup>(6)</sup><br>8. Uniwersytet Rolniczy im. Hugona Kołłątaja w Krakowie oraz Uniwersytet Jagielloński w Krakowie <sup>(7)</sup> |   | 1.5.2004       |

| Country        | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications           | Reference date |
|----------------|--|--|---|----------------|
| Portugal       | — Carta de curso de licenciatura em medicina veterinária<br>— Carta de mestrado integrado em medicina veterinária  | Universidade   |   | 1.1.1986       |
| România        | Diplomă de licență de doctor medic veterinar   | Universități<br>Ministerul Educatiei Nationale <sup>(5)</sup>  |   | 1.1.2007       |
| Slovenija      | Diploma, s katero se podeljuje strokovni naslov “doktor veterinarske medicine/doktorica veterinarske medicine”   | Univerza   | Spričevalo o opravljenem državnem izpitu s področja veterinarstva | 1.5.2004       |
| Slovensko      | Vysokoškolský diplom o udelení akademického titulu “doktor veterinárskeho lekárstva” (“MVDr.”)   | Univerzita   |   | 1.5.2004       |
| Suomi/Finland  | Eläinlääketieteen lisensiaatin tutkinto/Veterinärmedicine licentiatexamen  | Yliopisto  |   | 1.1.1994       |
| Sverige        | Veterinärexamen  | Sveriges Lantbruksuniversitet  |   | 1.1.1994       |
| United Kingdom | 1. Bachelor of Veterinary Science (BVSc)<br>2. Bachelor of Veterinary Science (BVSc)<br>3. Bachelor of Veterinary Medicine (Vet MB)<br>4. Bachelor of Veterinary Medicine and Surgery (BVM&S)<br>5. Bachelor of Veterinary Medicine and Surgery (BVMS)<br>6. Bachelor of Veterinary Medicine (BvetMed)<br>7. Bachelor of Veterinary Medicine and Bachelor of Veterinary Surgery (B.V.M., B.V.S.) | 1. University of Bristol<br>2. University of Liverpool<br>3. University of Cambridge<br>4. University of Edinburgh<br>5. University of Glasgow<br>6. University of London<br>7. University of Nottingham |   | 21.12.1980     |

<sup>(1)</sup> Valid until 22 November 2006.<sup>(2)</sup> As of 23 November 2006.<sup>(3)</sup> Valid until 10 April 2008.<sup>(4)</sup> As of 11 April 2008.<sup>(5)</sup> As of 10 January 2011.<sup>(6)</sup> As of 1 October 2011.<sup>(7)</sup> As of 1 October 2012.



## ‘5.5.2 Evidence of formal qualifications of midwives

| Country                     | Evidence of formal qualifications  | Body awarding the evidence of qualifications   | Professional title                     | Reference date |
|-----------------------------|--|--|--|----------------|
| België/Belgique/<br>Belgien | Diploma van vroedvrouw/Di-<br>plôme d'accoucheuse  | — De erkende opleidingsinsti-<br>tuten/Les établissements<br>d'enseignement<br><br>— De bevoegde Examencom-<br>missie van de Vlaamse Ge-<br>meenschap/Le Jury<br>compétent d'enseignement<br>de la Communauté fran-<br>çaise | Vroedvrouw/<br>Accoucheuse             | 23.1.1983      |
| България                    | Диплома за висше образование<br>на образователно-квалифи-<br>кационна степен “Бакалавър” с<br>професионална квалификация<br>“Акушерка”   | Университет  | Акушерка                               | 1.1.2007       |
| Česká republika             | 1. Diplom o ukončení studia ve<br>studijním programu ošetřo-<br>vatelství ve studijním oboru<br>porodní asistentka (bakalář,<br>Bc.)<br><br>2. Diplom o ukončení studia ve<br>studijním programu porodní<br>asistence ve studijním oboru<br>porodní asistentka (bakalář,<br>Bc.)<br><br>3. Diplom o ukončení studia ve<br>studijním oboru diplomova-<br>ná porodní asistentka (diplo-<br>movaný specialista, DiS.) | 1. Vysoká škola zřízená nebo<br>uznaná státem<br><br>2. Vysoká škola zřízená nebo<br>uznaná státem<br><br>3. Vyšší odborná škola zřízená<br>nebo uznaná státem   | Porodní asistentka/porodní<br>asistent | 1.5.2004       |
| Danmark                     | Bevis for uddannelsen til pro-<br>fessionsbachelor i jordemoder-<br>kundskab   | Professionshøjskole  | Jordemoder                             | 23.1.1983      |
| Deutschland                 | Zeugnis über die staatliche Prü-<br>fung für Hebammen und Ent-<br>bindungspfleger  | Staatlicher Prüfungsausschuss  | — Hebamme<br>— Entbindungspfleger      | 23.1.1983      |
| Eesti                       | Diplom ämmaemanda erialal<br><br>Ämmaemanda diplom   | — Tallinna Meditsiinikool<br><br>— Tartu Meditsiinikool<br><br>— Tallinna Tervishoiu Kõrg-<br>kool<br><br>— Tartu Tervishoiu Kõrgkool  | Ämmaemand                              | 1.5.2004       |

| Country  | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Professional title  | Reference date |
|----------|---|---|---|----------------|
| Ελλάς    | 1. Πτυχίο Τμήματος Μαιευτικής Τεχνολογικών Εκπαιδευτικών Ιδρυμάτων (Τ.Ε.Ι.)<br><br>2. Πτυχίο του Τμήματος Μαιών της Ανωτέρας Σχολής Στελεχών Υγείας και Κοινων. Πρόνοιας (ΚΑΤΕΕ)<br><br>3. Πτυχίο Μαίας Ανωτέρας Σχολής Μαιών | 1. Τεχνολογικά Εκπαιδευτικά Ιδρύματα (Τ.Ε.Ι.)<br><br>2. ΚΑΤΕΕ Υπουργείου Εθνικής Παιδείας και Θρησκευμάτων<br><br>3. Υπουργείο Υγείας και Πρόνοιας  | — Μαία<br><br>— Μαιευτής  | 23.1.1983      |
| España   | — Título de matrona<br><br>— Título de asistente obstétrico (matrona)<br><br>— Título de enfermería obstétrica-ginecológica   | Ministerio de Educación y Cultura   | — Matrona<br><br>— Asistente obstétrico                                       | 1.1.1986       |
| France   | Diplôme de sage-femme   | L'Etat  | Sage-femme  | 23.1.1983      |
| Hrvatska | Svjedodžba “prvostupnik (baccalaureus) primaljstva/sveučilišna prvostupnica (baccalaurea) primaljstva”  | — Medicinski fakulteti sveučilišta u Republici Hrvatskoj<br><br>— Sveučilišta u Republici Hrvatskoj<br><br>— Veleučilišta i visoke škole u Republici Hrvatskoj  | Prvostupnik (baccalaureus) Primaljstva/Prvostupnica (baccalaurea) primaljstva | 1.7.2013       |
| Ireland  | 1. Certificate in Midwifery <sup>(1)</sup><br><br>2. B.Sc. in Midwifery approved by the NMBI <sup>(2)</sup><br><br>3. Higher/Postgraduate Diploma in Midwifery approved by the NMBI <sup>(2)</sup>                            | 1. An Bórd Altranais (The Nursing Board) [up to 1 October 2012];<br><br>Bórd Altranais agus Cnáimhseachais na hÉireann (The Nursing and Midwifery Board of Ireland, NMBI) [from 2 October 2012].<br><br>2. A third-level Institution delivering a Midwifery education programme approved by the NMBI<br><br>3. Third-level Institution delivering Higher/Postgraduate Diploma in Midwifery approved by the NMBI | Registered Midwife (RM)   | 23.1.1983      |
| Italia   | 1. Diploma d'ostetrica <sup>(4)</sup><br><br>2. Laurea in ostetricia <sup>(5)</sup>   | 1. Scuole riconosciute dallo Stato <sup>(4)</sup><br><br>2. Università <sup>(5)</sup>   | Ostetrica <sup>(4)</sup>  | 23.1.1983      |

| Country | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Professional title | Reference date |
|---------|--|---|--------------------|----------------|
| Κύπρος  | Δίπλωμα στο μεταβασικό πρόγραμμα Μαιευτικής  | Νοσηλευτική Σχολή   | Εγγεγραμμένη Μαία  | 1.5.2004       |
| Latvija | Diploms par vecmātes kvalifikācijas iegūšanu   | Māsu skolas   | Vecmāte            | 1.5.2004       |
| Lietuva | <p>1. Aukštojo mokslo diplomas, nurodantis suteiktą bendrosios praktikos slaugytojo profesinę kvalifikaciją, ir profesinės kvalifikacijos pažymėjimas, nurodantis suteiktą akušerio profesinę kvalifikaciją</p> <p>— Pažymėjimas, liudijantis akušerio profesinę praktiką</p> <p>2. Aukštojo mokslo diplomas (neuniversitetinės studijos), nurodantis suteiktą bendrosios praktikos slaugytojo profesinę kvalifikaciją, ir profesinės kvalifikacijos pažymėjimas, nurodantis suteiktą akušerio profesinę kvalifikaciją</p> <p>— Pažymėjimas, liudijantis akušerio profesinę praktiką</p> <p>3. Aukštojo mokslo diplomas (neuniversitetinės studijos), nurodantis suteiktą akušerio profesinę kvalifikaciją</p> <p>4. Bakalauro diplomas (slaugos bakalauro kvalifikacinis laipsnis ir bendrosios praktikos augytojo profesinė kvalifikacija) Ir Profesinės kvalifikacijos pažymėjimas (akušerio profesinė kvalifikacija)</p> <p>5. Profesinio bakalauro diplomas (slaugos profesinio bakalauro kvalifikacinis laipsnis ir bendrosios praktikos slaugytojo profesinė kvalifikacija) Ir Profesinės kvalifikacijos pažymėjimas (akušerio profesinė kvalifikacija)</p> <p>6. Profesinio bakalauro diplomas (akušerijos profesinio bakalauro kvalifikacinis laipsnis ir akušerio profesinė kvalifikacija)</p> | <p>1. Universitetas</p> <p>2. Kolegija</p> <p>3. Kolegija</p> <p>4. Universitetas</p> <p>5. Kolegija</p> <p>6. Kolegija</p> | Akušeris           | 1.5.2004       |

| Country      | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Professional title  | Reference date |
|--------------|--|---|---|----------------|
| Luxembourg   | Diplôme de sage-femme  | Ministère de l'éducation nationale, de la formation professionnelle et des sports   | Sage-femme  | 23.1.1983      |
| Magyarország | 1. Szülésznő bizonyítvány<br>2. Szülésznő oklevél  | 1. Iskola/főiskola<br>2. Felsőoktatási intézmény  | Szülésznő   | 1.5.2004       |
| Malta        | Lawrja jew diploma fl- Istudji tal-Qwiebel   | Universita' ta' Malta   | Qabla   | 1.5.2004       |
| Nederland    | Diploma van verloskundige  | Door het Ministerie van Volksgezondheid, Welzijn en Sport erkende opleidings-instellingen   | Verloskundige   | 23.1.1983      |
| Österreich   | 1. Hebammen-Diplom<br><br>2. Diplom über den Abschluss des Fachhochschul-Bachelorstudiengangs "Hebamme"  | 1. — Hebammenakademie<br>— Bundeshebammenlehranstalt<br><br>2. Fachhochschulrat   | Hebamme   | 1.1.1994       |
| Polska       | — Dyplom ukończenia studiów wyższych na kierunku położnictwo z tytułem "magister położnictwa"<br>— Dyplom ukończenia studiów wyższych zawodowych na kierunku/specjalności położnictwo z tytułem "licencjat położnictwa"  | Instytucja prowadząca kształcenie na poziomie wyższym uznana przez właściwe władze (Higher education institution recognised by the competent authorities) | Położna   | 1.5.2004       |
| Portugal     | 1. Diploma de enfermeiro especialista em enfermagem de saúde materna e obstétrica<br><br>2. Diploma/carta de curso de estudos superiores especializados em enfermagem de saúde materna e obstétrica<br><br>3. Diploma (do curso de pós-licenciatura) de especialização em enfermagem de saúde materna e obstétrica | 1. Ecolas de Enfermagem<br><br>2. Escolas Superiores de Enfermagem<br><br>3. — Escolas Superiores de Enfermagem<br>— Escolas Superiores de Saúde          | Enfermeiro especialista em enfermagem de saúde materna e obstétrica | 1.1.1986       |
| România      | Diplomă de licență de moașă  | Universități  | Moașă   | 1.1.2007       |
| Slovenija    | Diploma, s katero se podeljuje strokovni naslov "diplomirana babica/diplomirani babičar"   | 1. Univerza<br>2. Visoka strokovna šola   | diplomirana babica/diplomirani babičar                              | 1.5.2004       |

| Country        | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Professional title | Reference date |
|----------------|---|--|--------------------|----------------|
| Slovensko      | 1. DIPLOM pôrodná asistencia "bakalár" ("Bc.")<br>2. DIPLOM diplomovaná pôrodná asistentka  | 1. Vysoká škola/Univerzita<br>2. Stredná zdravotnícka škola  | Pôrodná asistentka | 1.5.2004       |
| Suomi/Finland  | 1. Kätilön tutkinto/barnmorskeexamen<br>2. Sosiaali- ja terveystieteiden ammattikorkeakoulututkinto, kätilö (AMK)/yrkeshögskoleexamen inom hälsovård och det sociala området, barnmorska (YH)   | 1. Terveystieteiden tutkimuslaitos/hälsöförhållningsanstalter<br>2. Ammattikorkeakoulut/Yrkeshögskolor | Kätilö/Barnmorska  | 1.1.1994       |
| Sverige        | Barnmorskeexamen  | Universitet eller högskola   | Barnmorska         | 1.1.1994       |
| United Kingdom | A qualification approved by the Nursing and Midwifery Council or its predecessor bodies as attesting to the completion of training as required for midwives by Article 40 and the standard of proficiency as required for registration as a Registered Midwife in its register <sup>(3)</sup> | Education institution approved by the Nursing and Midwifery Council or its predecessor bodies          | Registered Midwife | 23.1.1983      |

<sup>(1)</sup> This evidence of formal qualification entitles the holder to automatic recognition when it is issued to the nationals of Member States who obtained qualification in Ireland.

<sup>(2)</sup> This information on the evidence of qualifications was included to ensure that graduates trained in Ireland would be entitled to automatic recognition without the need for actual registration in Ireland, such registration not being part of the qualification process.

<sup>(3)</sup> This information on the evidence of qualifications was included to ensure that graduates trained in the United Kingdom would be entitled to automatic recognition of their qualification without the need for actual registration, such registration not being part of the qualification process.

<sup>(4)</sup> Valid until 2001.

<sup>(5)</sup> As of 2001/2002.

6. Point 5.6.2 is replaced by the following:

*'5.6.2. Evidence of formal qualifications of pharmacists*

| Country                     | Evidence of formal qualifications           | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference date |
|-----------------------------|---|---|---|----------------|
| België/Belgique/<br>Belgien | Diploma van apotheker/Diplôme de pharmacien | — De universiteiten/Les universités<br>— De bevoegde Examencommissie van de Vlaamse Gemeenschap/Le Jury compétent d'enseignement de la Communauté française |   | 1.10.1987      |

| Country         | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications | Reference date            |
|-----------------|---|--|---|---------------------------|
| България        | Диплома за висше образование на образователно-квалификационна степен “Магистър” по “Фармация” с професионална квалификация “Магистър-фармацевт” | Университет  |   | 1.1.2007                  |
| Česká republika | Diplom o ukončení studia ve studijním programu farmacie (magistr, Mgr.)   | Farmaceutická fakulta univerzity v České republice   |   | 1.5.2004                  |
| Danmark         | Bevis for kandidatuddannelsen i farmaci (cand.pharm.)<br><br>Bevis for kandidatuddannelsen i farmaci (cand.pharm.)                              | Det Farmaceutiske Fakultet, Københavns Universitet<br><br>Syddansk Universitet   |   | 1.10.1987                 |
| Deutschland     | Zeugnis über die Staatliche Pharmazeutische Prüfung   | Zuständige Behörden  |   | 1.10.1987                 |
| Eesti           | Diplom proviisori õppekava läbimisest<br><br>Farmaatsiamagister <i>Master of Science in Pharmacy (MSc)</i>                                      | Tartu Ülikool  |   | 1.5.2004                  |
| Ελλάς           | Άδεια άσκησης φαρμακευτικού επαγγέλματος  | — Περιφέρεια — Νομαρχιακή Αυτοδιοίκηση   |   | 1.10.1987                 |
| España          | Título de Licenciado en Farmacia<br><br>Título de Graduado/a en Farmacia  | — Ministerio de Educación y Cultura<br><br>— El rector de una universidad<br><br>— El rector de una Universidad  |   | 1.10.1987<br><br>1.1.1986 |
| France          | — Diplôme d'Etat de pharmacien<br><br>— Diplôme d'Etat de docteur en pharmacie  | Universités  |   | 1.10.1987                 |
| Hrvatska        | Diploma “magistar farmacije/ magistra farmacije”  | — Farmaceutsko-biokemijski fakultet Sveučilišta u Zagrebu<br><br>— Medicinski fakultet Sveučilišta u Splitu<br><br>— Kemijsko-tehnološki fakultet Sveučilišta u Splitu |   | 1.7.2013                  |

| Country      | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications   | Reference date |
|--------------|---|--|---|----------------|
| Ireland      | <p>1. Certificate of Registered Pharmaceutical Chemist <sup>(1)</sup></p> <p>Certificate of Registration as a Pharmacist <sup>(1)</sup></p> <p>2. A degree in Pharmacy recognised by the Pharmaceutical Society of Ireland <sup>(2)</sup></p> | <p>1. Cumann Cógaiseoirí na hEir-eann</p> <p>(Pharmaceutical Society of Ireland)</p> <p>2. Universities delivering degrees in pharmacy recognised by the Pharmaceutical Society of Ireland</p> | <p>2. Notification from the Pharmaceutical Society of Ireland that the person named therein is the holder of a qualification appropriate for practicing as a pharmacist</p> | 1.10.1987      |
| Italia       | Diploma o certificato di abilitazione all'esercizio della professione di farmacista ottenuto in seguito ad un esame di Stato  | Università   |   | 1.11.1993      |
| Κύπρος       | Πιστοποιητικό Εγγραφής Φαρμακοποιού   | Συμβούλιο Φαρμακευτικής  |   | 1.5.2004       |
| Latvija      | Farmaceita diploms  | Universitātes tipa augstskola  |   | 1.5.2004       |
| Lietuva      | <p>1. Aukštojo mokslo diplomas, nurodantis suteiktą vaistinininko profesinę kvalifikaciją</p> <p>2. Magistro diplomas (farmacijos magistro kvalifikacinis laipsnis ir vaistinininko profesinė kvalifikacija)</p>                              | Universitetas  |   | 1.5.2004       |
| Luxembourg   | Diplôme d'Etat de pharmacien  | Jury d'examen d'Etat + visa du ministre de l'éducation nationale   |   | 1.10.1987      |
| Magyarország | Okleveles gyógyszerész oklevél (magister pharmaciae, abbrev: mag. Pharm)  | Egyetem  |   | 1.5.2004       |
| Malta        | Lawrja fil-farmacija  | Universita` ta' Malta  |   | 1.5.2004       |
| Nederland    | Getuigschrift van met goed gevolg afgelegd apothekersexamen   | Faculteit Farmacie   |   | 1.10.1987      |
| Österreich   | Staatliches Apothekerdiplom   | Österreichische Apothekerkammer  |   | 1.10.1994      |
| Polska       | Dyplom ukończenia studiów wyższych na kierunku farmacja z tytułem magistra  | <p>1. Akademia Medyczna</p> <p>2. Uniwersytet Medyczny</p> <p>3. Collegium Medicum Uniwersytetu Jagiellońskiego</p>  |   | 1.5.2004       |



| Country        | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications  | Reference date |
|----------------|---|--|--|----------------|
| Portugal       | — Licenciatura em Farmácia  | Instituição de Ensino Superior<br>Universitário  |  | 1.10.1987      |
|                | — Carta de curso de licenciatura em Ciências Farmacêuticas  |  |  |                |
|                | Mestrado Integrado em Ciências Farmacêuticas  |  |  | 1.1.2007       |
| România        | Diplomă de licență de farmacist<br>Diploma de licență și master <sup>(5)</sup>  | Universități<br>Ministerul Educației Nationale   |  | 1.1.2007       |
| Slovenija      | Diploma, s katero se podeljuje strokovni naziv “magister farmacije/magistra farmacije”  | Univerza   | Potrdilo o opravljenem strokovnem izpitu za poklic magister farmacije/magistra farmacije   | 1.5.2004       |
| Slovensko      | DIPLOM farmácia magister (“Mgr.”)   | Univerzita   |  | 1.5.2004       |
| Suomi/Finland  | Proviisorin tutkinto/Provisor-examen  | Yliopisto  |  | 1.10.1994      |
| Sverige        | Apotekarexamen  | Universitet och högskolor  |  | 1.10.1994      |
| United Kingdom | 1. Certificate of Registered Pharmacist <sup>(3)</sup><br><br>2. A degree in pharmacy approved by either the General Pharmaceutical Council (formerly Royal Pharmaceutical Society of Great Britain) or the Pharmaceutical Society of Northern Ireland <sup>(4)</sup> | Universities delivering pharmacy degrees approved by the General Pharmaceutical Council (formerly Royal Pharmaceutical Society of Great Britain) or the Pharmaceutical Society of Northern Ireland | Notification from the General Pharmaceutical Council or Pharmaceutical Society of Northern Ireland confirming successful completion of the approved pharmacy degree, 12 months practical training and a pass of the registration assessment. | 1.10.1987      |

<sup>(1)</sup> This evidence of formal qualification entitles the holder to automatic recognition when it is issued to the nationals of Member States who obtained qualification in Ireland.

<sup>(2)</sup> This information on the evidence of qualifications was included to ensure that graduates trained in Ireland would be entitled to automatic recognition without the need for actual registration in Ireland. In such cases, the accompanying certificate testifies the completion of all qualifications requirements.

<sup>(3)</sup> This evidence of formal qualification entitles the holder to automatic recognition of their qualification when it is issued to the nationals of Member States who obtained qualification in the United Kingdom.

<sup>(4)</sup> This information on the evidence of qualifications was included to ensure that graduates trained in the United Kingdom would be entitled to automatic recognition of their qualification without the need for actual registration. In such cases, the accompanying certificate testifies the completion of all qualifications requirements.

<sup>(5)</sup> As of 10 January 2011.’

7. Point 5.7.1 is replaced by the following:

*‘5.7.1. Evidence of formal qualifications of architects recognised pursuant to Article 46*

| Country                     | Evidence of formal qualifications                             | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications   | Reference academic year |
|-----------------------------|---|--|---|-------------------------|
| België/Belgique/<br>Belgien | 1. Architect/Architecte                                       | 1. Nationale hogescholen voor architectuur/Ecoles nationales supérieures d'architecture  | Certificat de stage délivré par l'Ordre des Architectes/Stage-getuigschrift afgeleverd door de Orde van Architecten   | 1988/1989               |
|                             | 2. Architect/Architecte                                       | 2. Hogere-architectuur-instituten/Instituts supérieurs d'architecture  |   |                         |
|                             | 3. Architect/Architecte                                       | 3. Provinciaal Hoger Instituut voor Architectuur te Hasselt/Ecole provinciale supérieure d'architecture de Hasselt                                     |   |                         |
|                             | 4. Architect/Architecte                                       | 4. Koninklijke Academies voor Schone Kunsten/Académies royales des Beaux-Arts  |   |                         |
|                             | 5. Architect/Architecte                                       | 5. Sint-Lucasscholen/Ecoles Saint-Luc  |   |                         |
|                             | 6. Burgerlijke ingenieur-architect/Ingénieur Civil Architecte | 6. — Faculteiten Toegepaste Wetenschappen van de Universiteiten/Facultés des sciences appliquées des universités<br>— “Faculté Polytechnique” van Mons |   |                         |
|                             | 7. Burgerlijk Ingenieur-Architect (Ir. Arch.)                 | 7. K.U. Leuven, faculteit ingenieurswetenschappen  |   | 2004/2005               |
|                             | 8. Burgerlijk Ingenieur-Architect (Ir. Arch.)                 | 8. Vrije Universiteit Brussel, faculteit ingenieurswetenschappen   |   | 2004/2005               |
|                             | 9. Master Ingénieur Civil Architecte, à finalité spécialisée  | 9. Faculté Polytechnique de Mons   |   | 2008/2009               |
| България                    | Магистър-Специалност архитектура                              | — Университет по архитектура, строителство и геодезия — София, Архитектурен факултет   | Свидетелство, издадено от компетентната Камара на архитектите, удостоверяващо изпълнението на предпоставките, необходими за регистрация като архитект с пълна проектантска правоспособност в регистъра на архитектите | 2010/2011               |
|                             |   | — Варненски свободен университет “Черноризец Храбър”, Варна, Архитектурен факултет   |   | 2007/2008               |
|                             |   | — Висше строително училище “Любен Каравелов”, Архитектурен факултет  |   | 2009/2010               |

| Country         | Evidence of formal qualifications                       | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications  | Reference academic year |
|-----------------|---|--|--|-------------------------|
| Česká republika | Architektura a urbanismus                               | — Fakulta architektury, České vysoké učení technické (ČVUT) v Praze<br>— Vysoké učení technické v Brně, Fakulta architektury | Osvědčení o splnění kvalifikačních požadavků pro samostatný výkon profese architekta vydané Českou komorou architektů  | 2007/2008               |
|                 | Inženýr architekt (Ing.Arch.)                           | — Technická univerzita v Liberci, Fakulta umění a architektury   |  |                         |
|                 | Magistr umění v oboru architektura (MgA.)               | — Vysoká škola uměleckoprůmyslová v Praze  |  |                         |
|                 | Magistr umění v oboru Architektonická tvorba, MgA       | — Akademie výtvarných umění v Praze  |  | 2007/2008               |
| Danmark         | Bevis for kandidatuddannelsen i arkitektur (cand.arch.) | — Kunstakademiets Arkitektskole i København<br>— Arkitektskolen i Århus  |  | 1988/1989               |
| Deutschland     | Diplom-Ingenieur,                                       | — Universitäten (Architektur/Hochbau)  | Bescheinigung einer zuständigen Architektenkammer über die Erfüllung der Qualifikationsvoraussetzungen im Hinblick auf eine Eintragung in die Architektenliste | 1988/1989               |
|                 | Diplom-Ingenieur Univ.                                  | — Technische Hochschulen (Architektur/Hochbau)   |  |                         |
|                 |   | — Technische Universitäten (Architektur/Hochbau)   |  |                         |
|                 |   | — Universitäten-Gesamthochschulen (Architektur/Hochbau)  |  |                         |
|                 |   | — Hochschulen für bildende Künste  |  |                         |
|                 |   | — Hochschulen für Künste   |  |                         |
|                 | Diplom-Ingenieur, Diplom-Ingenieur FH                   | — Fachhochschulen (Architektur/Hochbau)  |  |                         |
|                 |   | — Universitäten-Gesamthochschulen (Architektur/Hochbau) bei entsprechenden Fachhochschulstudiengängen                        |  |                         |
|                 | Master of Arts — M.A.                                   | — Hochschule Bremen — University of applied Sciences, Fakultät Architektur, Bau und Umwelt — School of Architecture Bremen   |  | 2003/2004               |
|                 |   | — Fachhochschule Münster (University of Applied Sciences) — Muenster School of Architecture                                  |  | 2000/2001               |
|                 |   | — Georg-Simon-Ohm-Hochschule Nürnberg Fakultät Architektur   |  | 2005/2006               |
|                 |   | — Hochschule Anhalt (University of Applied Sciences) Fachbereich Architektur, Facility Management und Geoinformation         |  | 2010/2011               |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|---|---|-------------------------|
|         |   | — Hochschule Regensburg (University of Applied Sciences), Fakultät für Architektur  |   | 2007/2008               |
|         |   | — Technische Universität München, Fakultät für Architektur  |   | 2009/2010               |
|         |   | — Hochschule Lausitz, Studiengang Architektur, Fakultät für Bauen “seit Juli 2013: Brandenburgische Technische Universität Cottbus-Senftenberg” |   | 2009/2010               |
|         |   | — Fachhochschule Lübeck, University of Applied Sciences, Fachbereich Bauwesen   |   | 2004/2005               |
|         |   | — Fachhochschule für Technik und Wirtschaft Dresden, Fakultät Bauingenieurwesen/Architektur   |   | 2005/2006               |
|         |   | — Fachhochschule Erfurt/University of Applied Sciences  |   | 2006/2007               |
|         |   | — Hochschule Augsburg/Augsburg University of Applied Sciences   |   | 2005/2006               |
|         |   | — Hochschule Koblenz, Fachbereich Bauwesen  |   | 2004/2005               |
|         |   | — Hochschule München/Fakultät für Architektur   |   | 2005/2006               |
|         |   | — Hochschule für Technik Stuttgart, Fakultät Architektur und Gestaltung   |   | 2005/2006               |
|         |   | — SRH Hochschule Heidelberg   |   | 2013/2014               |
|         |   | — Staatliche Akademie der Bildenden Künste Stuttgart, Fachbereich Architektur   |   | 2006/2007               |
|         |   | — Hochschule Konstanz Technik, Wirtschaft und Gestaltung (HTWG)   |   | 2014/2015               |
|         | Master of Arts (in Kombination mit einem Bachelorabschluss in Architektur)        | Hochschule Trier Fachbereich Gestaltung — Fachrichtung Architektur  |   | 2007/2008               |
|         | Master of Engineering (in Kombination mit einem Bachelorabschluss in Engineering) | Technische Hochschule Mittelhessen (University of Applied Sciences) Fachbereich Bauwesen  |   | 2010/2011               |
|         | Bachelor of Arts — B.A.   | — Hochschule Anhalt (University of Applied Sciences) Fachbereich Architektur, Facility Management und Geoinformation                            |   | 2010/2011               |

| Country | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications  | Reference academic year |
|---------|--|---|--|-------------------------|
|         |  | <ul style="list-style-type: none"> <li>— Technische Universität München, Fakultät für Architektur</li> <li>— Alanus Hochschule für Kunst und Gesellschaft, Bonn</li> <li>— Hochschule Konstanz Technik, Wirtschaft und Gestaltung (HTWG)</li> </ul>   |  | 2009/2010               |
|         | Bachelor of Sciences (B.Sc.)   | Hochschule Bochum, Fachbereich Architektur  |  | 2007/2008               |
|         |  | — Universität Stuttgart, Fakultät 1: Architektur und Stadtplanung   |  | 2014/2015               |
|         | Master of Science  | — Leibniz Universität Hannover, Fakultät für Architektur und Landschaft   |  | 2003/2004               |
|         |  | — Fachhochschule Aachen, Fachbereich Architektur  |  | 2009/2010               |
|         | Master of Science (M.Sc.) in Kombination mit dem Bachelor of Science (B.Sc.) | — Bauhaus-Universität Weimar  |  | 2009/2010               |
|         |  | — Bauhaus-Universität Weimar, Fakultät Architektur  |  | 2005/2006               |
|         |  | — Bauhaus-Universität Weimar, Fakultät Architektur und Urbanistik   |  | 2008/2009               |
|         |  |   |  | 2013/2014               |
| Eesti   | Arhitektuurimagister   | Eesti Kunstiakadeemia   |  | 2006/2007               |
| Ελλάς   | Δίπλωμα Αρχιτέκτονα — Μηχανικού  | <ul style="list-style-type: none"> <li>— Εθνικό Μετσόβιο Πολυτεχνείο (ΕΜΠ), τμήμα αρχιτεκτόνων — μηχανικών</li> <li>— Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης (ΑΠΘ), τμήμα αρχιτεκτόνων — μηχανικών της Πολυτεχνικής σχολής</li> <li>— Πανεπιστήμιο Πατρών, τμήμα αρχιτεκτόνων — μηχανικών της Πολυτεχνικής σχολής</li> <li>— Πανεπιστήμιο Θεσσαλίας, Πολυτεχνική Σχολή, Τμήμα Αρχιτεκτόνων Μηχανικών</li> <li>— Δημοκρίτειο Πανεπιστήμιο Θράκης, Πολυτεχνική Σχολή, Τμήμα Αρχιτεκτόνων Μηχανικών</li> </ul> | Βεβαίωση που χορηγεί το Τεχνικό Επιμελητήριο Ελλάδας (ΤΕΕ) και η οποία επιτρέπει την άσκηση δραστηριοτήτων στον τομέα της αρχιτεκτονικής | 1988/1989               |
|         |  |   |  | 2003/2004               |
|         |  |   |  | 1999/2000               |
|         |  |   |  | 1999/2000               |
|         |  | Πολυτεχνείο Κρήτης, Σχολή Αρχιτεκτόνων Μηχανικών  |  | 2004/2005               |

| Country | Evidence of formal qualifications | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|-----------------------------------|---|---|-------------------------|
| España  | Título oficial de arquitecto      | Rectores de las universidades enumeradas a continuación:  |   | 1988/1989               |
|         |                                   | — Universidad politécnica de Cataluña, escuelas técnicas superiores de arquitectura de Barcelona o del Vallès |   |                         |
|         |                                   | — Universidad politécnica de Madrid, escuela técnica superior de arquitectura de Madrid                       |   |                         |
|         |                                   | — Escuela de Arquitectura de la Universidad de Las Palmas de Gran Canaria                                     |   |                         |
|         |                                   | — Universidad politécnica de Valencia, escuela técnica superior de arquitectura de Valencia                   |   |                         |
|         |                                   | — Universidad de Sevilla, escuela técnica superior de arquitectura de Sevilla                                 |   |                         |
|         |                                   | — Universidad de Valladolid, escuela técnica superior de arquitectura de Valladolid                           |   |                         |
|         |                                   | — Universidad de Santiago de Compostela, escuela técnica superior de arquitectura de La Coruña                |   |                         |
|         |                                   | — Universidad del País Vasco, escuela técnica superior de arquitectura de San Sebastián                       |   |                         |
|         |                                   | — Universidad de Navarra, escuela técnica superior de arquitectura de Pamplona                                |   |                         |
|         |                                   | — Universidad de A Coruña   |   | 1991/1992               |
|         |                                   | — Universidad de Granada, Escuela Técnica Superior de Arquitectura de Granada.                                |   | 1994/1995               |
|         |                                   | — Universidad de Alicante, escuela politécnica superior de Alicante   |   | 1997/1998               |
|         |                                   | — Universidad Europea de Madrid   |   | 1998/1999               |
|         |                                   | — Universidad Ramón Llull, escuela técnica superior de arquitectura de La Salle                               |   |                         |
|         |                                   | — Universidad politécnica de Cataluña, escuela técnica superior de arquitectura de Barcelona                  |   | 1999/2000               |

| Country | Evidence of formal qualifications    | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year   |
|---------|--------------------------------------|---|---|---|
|         |                                      | <ul style="list-style-type: none"> <li>— Universidad Alfonso X El Sabio, centro politécnico superior de Villanueva de la Cañada</li> <li>— Universidad de Alcalá (Escuela de Arquitectura)</li> <li>— Universidad Internacional de Cataluña, Escuela Técnica Superior de Arquitectura</li> <li>— Universidad S.E.K. de Segovia, centro de estudios integrados de arquitectura de Segovia</li> <li>— Universidad Camilo José Cela de Madrid</li> <li>— Universidad San Pablo CEU</li> <li>— Universidad CEU Cardenal Herrera, Valencia-Escuela Superior de Enseñanzas Técnicas</li> <li>— Universidad Rovira i Virgili</li> <li>— Universidad de Málaga. Escuela Técnica Superior de Arquitectura</li> <li>— Universidad de Girona. Escuela Politécnica Superior</li> <li>— Universidad Pontificia de Salamanca</li> <li>— Universidad Francisco de Vitoria</li> <li>— IE Universidad. Escuela Técnica Superior de Estudios Integrados de Arquitectura</li> <li>— IE Universidad, Escuela Técnica Superior de Estudios Integrados de Arquitectura</li> <li>— Universidad de Zaragoza. Escuela de Ingeniería y Arquitectura</li> <li>— Universidad Europea de Madrid</li> <li>— Universitat Internacional de Catalunya</li> <li>— Universidad San Jorge (Zaragoza)</li> <li>— Universidad de Navarra</li> <li>— Universidad de Girona. Escuela Politécnica Superior</li> <li>— Universitat Ramon Llull, la Salle</li> </ul> |   | <p>2000/2001</p> <p>2001/2002</p> <p>2002/2003</p> <p>2005/2006</p> <p>2006/2007</p> <p>2009/2010</p> <p>2008/2009</p> <p>2009/2010</p> |
|         | Título de Graduado/a en Arquitectura |   |   |   |



| Country | Evidence of formal qualifications                                   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|---|---|-------------------------|
|         |   | <ul style="list-style-type: none"> <li>— Universidad San Pablo CEU — Madrid</li> <li>— Universitat Politècnica de València</li> <li>— Universidad de A Coruña. Escuela Técnica Superior de Arquitectura de A Coruña</li> <li>— Universidad Rovira i Virgili</li> <li>— Universidad Cardenal Herrera CEU</li> <li>— Universidad Francisco de Vitoria</li> <li>— Universidad de Málaga. Escuela Técnica Superior de Arquitectura</li> <li>— Universidad de Las Palmas de Gran Canaria. Escuela de Arquitectura</li> <li>— Universidad de Castilla La Mancha. Escuela de Arquitectura</li> <li>— Universidad Camilo José Cela de Madrid</li> <li>— Universidad de Alicante, escuela politécnica superior de Alicante</li> <li>— Universidad de Sevilla, escuela técnica superior de arquitectura de Sevilla</li> <li>— Universitat Politècnica de Catalunya</li> </ul> |   | 2010/2011               |
|         | Graduado en fundamentos de la arquitectura + Máster en Arquitectura | — Universidad Politécnica de Madrid. Escuela Técnica Superior de Arquitectura de Madrid   |   | 2010/2011               |
|         |   | — Universidad Antonio de Nebrija  |   | 2011/2012               |
|         |   | — Universidad de Zaragoza, Escuela de Ingeniería y Arquitectura   |   |                         |
|         |   | — Escuela Técnica Superior de Arquitectura — Universidad del País Vasco/Euskal Herriko Unibertsitatea   |   |                         |
|         |   | — Universidad Europea de Madrid   |   |                         |
|         |   | — Universidad Politécnica de Valencia. Escuela Técnica Superior de Arquitectura   |   | 2014/2015               |
|         |   | — Universidad de Alicante, escuela politécnica superior de Alicante   |   |                         |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Reference academic year   |
|---------|---|---|---|---|
|         |   | <ul style="list-style-type: none"> <li>— Universidad de Alcalá de Henares. Escuela Politécnica de Alcalá de Henares</li> <li>— Universidad de A Coruña. Escuela Técnica Superior de Arquitectura de A Coruña</li> <li>— Universidad Cardenal Herrera CEU</li> <li>— Universidad Europea de Valencia</li> <li>— Universidad Europea de Canarias</li> </ul>   |   | <p>2015/2016</p> <p>2016/2017</p> <p>2013/2014</p> <p>2012/2013</p>                                   |
| France  | <p>1. Diplôme d'architecte DPLG, y compris dans le cadre de la formation professionnelle continue et de la promotion sociale.</p> <p>2. Diplôme d'architecte ESA</p> <p>3. Diplôme d'architecte EN-SAIS</p> <p>4. Diplôme d'Etat d'architecte (DEA)</p> | <p>1. Le ministre chargé de l'architecture</p> <p>2. Ecole spéciale d'architecture de Paris</p> <p>3. Ecole nationale supérieure des arts et industries de Strasbourg, section architecture</p> <p>4. Ecole Nationale Supérieure d'Architecture et de Paysage de Bordeaux (Ministère chargé de l'architecture et Ministère chargé de l'enseignement supérieur)</p> <p>Ecole Nationale Supérieure d'Architecture de Bretagne (Ministère chargé de l'architecture et Ministère chargé de l'enseignement supérieur)</p> <p>Ecole nationale supérieure d'architecture de Clermont-Ferrand (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)</p> <p>Ecole nationale supérieure d'architecture de Grenoble (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)</p> <p>Ecole nationale supérieure d'architecture et de paysage de Lille (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)</p> | <p>Habilitation de l'architecte diplômé d'Etat à l'exercice de la maîtrise d'œuvre en son nom propre (HMONP) (Ministère chargé de l'architecture)</p> | <p>1988/1989</p> <p>2005/2006</p> <p>2005/2006</p> <p>2004/2005</p> <p>2004/2005</p> <p>2004/2005</p> |

| Country | Evidence of formal qualifications | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|-----------------------------------|---|---|-------------------------|
|         |                                   | Ecole nationale supérieure d'architecture de Lyon (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)              |   | 2004/2005               |
|         |                                   | Ecole nationale supérieure d'architecture de Marne La Vallée (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)   |   | 2004/2005               |
|         |                                   | Ecole nationale supérieure d'architecture de Marseille (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)         |   | 2005/2006               |
|         |                                   | Ecole nationale supérieure d'architecture de Montpellier (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)       |   | 2004/2005               |
|         |                                   | Ecole nationale supérieure d'architecture de Nancy (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)             |   | 2004/2005               |
|         |                                   | Ecole nationale supérieure d'architecture de Nantes (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)            |   | 2005/2006               |
|         |                                   | Ecole nationale supérieure d'architecture de Normandie (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)         |   | 2004/2005               |
|         |                                   | Ecole nationale supérieure d'architecture de Paris-Belleville (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)  |   | 2005/2006               |
|         |                                   | Ecole nationale supérieure d'architecture de Paris-La Villette (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur) |   | 2006/2007               |
|         |                                   | Ecole nationale supérieure d'architecture de Paris Malaquais (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)   |   | 2005/2006               |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|--|---|-------------------------|
|         | Diplôme d'Etat d'architecte (DEA), dans le cadre de la formation professionnelle continue | Ecole nationale supérieure d'architecture de Paris Val-de-Seine (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur) |   | 2004/2005               |
|         |   | Ecole nationale supérieure d'architecture de Saint-Etienne (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)      |   | 2004/2005               |
|         |   | Ecole nationale supérieure d'architecture de Strasbourg (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)         |   | 2005/2006               |
|         |   | Ecole nationale supérieure d'architecture de Toulouse (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)           |   | 2004/2005               |
|         |   | Ecole nationale supérieure d'architecture de Versailles (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)         |   | 2004/2005               |
|         |   | Ecole nationale supérieure d'architecture de Lyon (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)               |   | 2006/2007               |
|         |   | Ecole nationale supérieure d'architecture de Marseille (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)          |   | 2006/2007               |
|         |   | Ecole nationale supérieure d'architecture de Montpellier (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)        |   | 2006/2007               |
|         |   | Ecole nationale supérieure d'architecture de Nantes (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)             |   | 2006/2007               |
|         |   | Ecole nationale supérieure d'architecture de Strasbourg (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)         |   | 2006/2007               |

| Country  | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications   | Reference academic year |
|----------|---|--|---|-------------------------|
|          | 5. Diplôme d'études de l'école spéciale d'architecture Grade 2 équivalent au diplôme d'Etat d'architecte  | 5. Ecole spéciale d'architecture (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)                                  | Diplôme d'architecte de l'ESA habilitant à exercer la maîtrise d'œuvre en son nom propre, équivalent à l'habilitation de l'architecte diplômé d'Etat à l'exercice de la maîtrise d'œuvre en son nom propre, reconnu par le Ministère chargé de l'architecture | 2006/2007               |
|          | 6. Diplôme d'architecte INSA de Strasbourg équivalent au diplôme d'Etat d'architecte conférant le grade de master (parcours architecte)               | 6. Institut national des sciences appliquées de Strasbourg (INSA) (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur) | Habilitation de l'architecte de l'INSA à exercer la maîtrise d'œuvre en son nom propre équivalent à l'HMONP, reconnue par le ministère chargé de l'architecture   | 2005/2006               |
|          | Diplôme d'architecte INSA de Strasbourg équivalent au diplôme d'Etat d'architecte conférant le grade de master (parcours d'architecte pour ingénieur) | Institut national des sciences appliquées de Strasbourg (INSA) (Ministère chargé de l'architecture et ministère chargé de l'enseignement supérieur)    | Habilitation de l'architecte de l'INSA à exercer la maîtrise d'œuvre en son nom propre équivalent à l'HMONP, délivrée par le ministère chargé de l'architecture   | 2005/2006               |
| Hrvatska | Magistar/Magistrica inženjer/inženjerka arhitekture i urbanizma   | Sveučilište u Zagrebu, Arhitektonski fakultet  | Diploma; Dopunska isprava o studiju; Potvrda HKA da podnositelj zahtjeva ispunjava kvalifikacijske uvjete   | 2005/2006               |
|          | Magistar/magistra inženjer/inženjerka arhitekture   | Sveučilišteu Splitu — Fakultet građevinarstva, arhitekture i geodezije   | Potvrda Hrvatske komore arhitekata da podnositelj zahtjeva zadovoljava uvjete za upis u komoru.   | 2016/2017               |
| Ireland  | 1. Degree of Bachelor of Architecture (B.Arch. NUI)   | 1. National University of Ireland to architecture graduates of University College Dublin   | Certificate of fulfilment of qualifications requirements for professional recognition as an architect in Ireland issued by the Royal Institute of Architects of Ireland (RIAI)  | 1988/1989               |
|          | 2. Degree of Bachelor of Architecture (B.Arch.) (Previously, until 2002 — Degree standard diploma in architecture (Dip. Arch))                        | 2. Dublin Institute of Technology, Bolton Street, Dublin (College of Technology, Bolton Street, Dublin)  |   |                         |
|          | 3. Certificate of associate-ship (ARIAI)  | 3. Royal Institute of Architects of Ireland  |   |                         |
|          | 4. Certificate of membership (MRIA)   | 4. Royal Institute of Architects of Ireland  |   |                         |
|          | 5. Degree of Bachelor of Architecture (Honours) (B.Arch. (Hons) UL)   | 5. University of Limerick  |   | 2005/2006               |
|          | 6. Degree of Bachelor of Architecture (Honours) (B.Arch. (Hons) WIT)  | 6. Waterford Institute of Technology   |   | 2005/2006               |

| Country               | Evidence of formal qualifications                       | Body awarding the evidence of qualifications               | Certificate accompanying the evidence of qualifications   | Reference academic year |
|-----------------------|---|--|---|-------------------------|
| Italia <sup>(1)</sup> | Laurea in architettura                                  | — Università di Camerino                                   | Diploma di abilitazione all'esercizio indipendente della professione che viene rilasciato dal ministero della Pubblica istruzione (ora Ministero dell'istruzione, dell'università e della ricerca) dopo che il candidato ha sostenuto con esito positivo l'esame di Stato davanti ad una commissione competente | 1988/1989               |
|                       |   | — Università di Catania — Sede di Siracusa                 |   |                         |
|                       |   | — Università di Chieti                                     |   |                         |
|                       |   | — Università di Ferrara                                    |   |                         |
|                       |   | — Università di Firenze                                    |   |                         |
|                       |   | — Università di Genova                                     |   |                         |
|                       |   | — Università di Napoli Federico II                         |   |                         |
|                       |   | — Università di Napoli II                                  |   |                         |
|                       |   | — Università di Palermo                                    |   |                         |
|                       |   | — Università di Parma                                      |   |                         |
|                       |   | — Università di Reggio Calabria                            |   |                         |
|                       |   | — Università di Roma "La Sapienza"                         |   |                         |
|                       |   | — Università di Roma III                                   |   |                         |
|                       |   | — Università di Trieste                                    |   |                         |
|                       |   | — Politecnico di Bari                                      |   |                         |
|                       |   | — Politecnico di Milano                                    |   |                         |
|                       |   | — Politecnico di Torino                                    |   |                         |
|                       |   | — Istituto universitario di architettura di Venezia        |   |                         |
|                       |   | — Università degli Studi "Mediterranea" di Reggio Calabria |   | 2000/2001               |
|                       | Laurea in ingegneria edile — architettura               | — Università dell'Aquila                                   |   | 1998/1999               |
|                       |   | — Università di Pavia                                      |   |                         |
|                       |   | — Università di Roma "La Sapienza"                         |   |                         |
|                       | Laurea specialistica in ingegneria edile — architettura | — Università dell'Aquila                                   |   | 2000/2001               |
|                       |   | — Università di Pavia                                      |   |                         |
|                       |   | — Università di Roma "La Sapienza"                         |   |                         |
|                       |   | — Università di Ancona                                     |   |                         |
|                       |   | — Università di Basilicata — Potenza                       |   |                         |
|                       |   | — Università di Pisa                                       |   |                         |
|                       |   | — Università di Bologna                                    |   |                         |
|                       |   | — Università di Catania                                    |   |                         |

| Country | Evidence of formal qualifications                    | Body awarding the evidence of qualifications | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|--|--|---|-------------------------|
|         | Laurea magistrale in ingegneria edile — architettura | — Università di Genova                       |   |                         |
|         |  | — Università di Palermo                      |   |                         |
|         |  | — Università di Napoli Federico II           |   |                         |
|         |  | — Università di Roma — Tor Vergata           |   |                         |
|         |  | — Università di Trento                       |   |                         |
|         |  | — Politecnico di Bari                        |   |                         |
|         |  | — Politecnico di Milano                      |   |                         |
|         |  | — Università degli studi di Brescia          |   | 2001/2002               |
|         |  | — Università degli Studi di Cagliari         |   |                         |
|         |  | — Università Politecnica delle Marche        |   | 2002/2003               |
|         |  | — Università degli studi della Calabria      |   | 2003/2004               |
|         |  | — Università degli studi di Salerno          |   | 2005/2006               |
|         |  | — Università dell'Aquila                     |   | 2004/2005               |
|         |  | — Università di Pavia                        |   |                         |
|         |  | — Università di Roma "La Sapienza"           |   |                         |
|         |  | — Università di Pisa                         |   |                         |
|         |  | — Università di Bologna                      |   |                         |
|         |  | — Università di Catania                      |   |                         |
|         |  | — Università di Genova                       |   |                         |
|         |  | — Università di Palermo                      |   |                         |
|         |  | — Università di Napoli Federico II           |   |                         |
|         |  | — Università di Roma — Tor Vergata           |   |                         |
|         |  | — Università di Trento                       |   |                         |
|         |  | — Politecnico di Bari                        |   |                         |
|         |  | — Politecnico di Milano                      |   |                         |
|         |  | — Università degli studi di Salerno          |   | 2010/2011               |
|         |  | — Università degli studi della Calabria      |   | 2004/2005               |

| Country | Evidence of formal qualifications                                   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year   |
|---------|---|---|---|---|
|         | Laurea specialistica quinquennale in Architettura                   | <ul style="list-style-type: none"> <li>— Università degli studi di Brescia</li> <li>— Università Politecnica delle Marche</li> <li>— Università degli Studi di Perugia</li> <li>— Università degli Studi di Padova</li> <li>— Università degli Studi di Genova</li> <li>— Prima Facoltà di Architettura dell'Università di Roma "La Sapienza"</li> <li>— Università di Ferrara</li> <li>— Università di Genova</li> <li>— Università di Palermo</li> <li>— Politecnico di Milano</li> <li>— Politecnico di Bari</li> <li>— Università di Firenze</li> </ul> |   | 2004/2005<br>2004/2005<br>2006/2007<br>2008/2009<br>2014/2015<br>1998/1999<br>1999/2000 |
|         | Laurea magistrale quinquennale in Architettura                      | <ul style="list-style-type: none"> <li>— Prima Facoltà di Architettura dell'Università di Roma "La Sapienza"</li> <li>— Università di Ferrara</li> <li>— Università di Genova</li> <li>— Università di Palermo</li> <li>— Politecnico di Bari</li> <li>— Università di Firenze</li> <li>— Politecnico di Milano</li> </ul>  |   | 2001/2002<br>2004/2005  |
|         | Laurea specialistica in architettura (Progettazione architettonica) | <ul style="list-style-type: none"> <li>— Università di Roma Tre</li> <li>Università degli Studi di Napoli "Federico II"</li> </ul>  |   | 2001/2002<br>2005/2006  |
|         | Laurea magistrale in architettura (Progettazione architettonica)    | Università di Roma Tre  |   | 2004/2005   |
|         | Laurea specialistica in Architettura                                | <ul style="list-style-type: none"> <li>— Università di Napoli II</li> <li>— Politecnico di Milano II</li> <li>— Facoltà di architettura dell'Università degli Studi G. D'Annunzio di Chieti-Pescara</li> <li>— Facoltà di architettura, Pianificazione e Ambiente del Politecnico di Milano</li> <li>— Facoltà di Architettura dell'Università degli studi di Trieste</li> </ul>  |   | 2001/2002   |



| Country | Evidence of formal qualifications                                | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|--|---|---|-------------------------|
|         |  | <ul style="list-style-type: none"> <li>— Facoltà di Architettura di Siracusa, Università di Catania</li> <li>— Facoltà di architettura, Università degli Studi di Parma</li> <li>— Facoltà di Architettura, Università di Bologna</li> <li>— Università IUAV di Venezia</li> <li>— Politecnico di Torino</li> <li>— Facoltà di Architettura Valle Giulia, Università degli Studi di Roma "La Sapienza"</li> <li>— Università degli Studi di Camerino</li> <li>— Università di Napoli Federico II</li> <li>— Università degli Studi "Mediterranea" di Reggio Calabria</li> <li>— Università degli Studi di Sassari</li> </ul>  |   | 2002/2003               |
|         |  | <ul style="list-style-type: none"> <li>— Facoltà di Architettura Valle Giulia, Università degli Studi di Roma "La Sapienza"</li> <li>— Università degli Studi di Camerino</li> <li>— Università di Napoli Federico II</li> <li>— Università degli Studi "Mediterranea" di Reggio Calabria</li> <li>— Università degli Studi di Sassari</li> </ul>   |   | 2004/2005               |
|         | Laurea Specialistica in Architettura (Progettazione Urbanistica) | <ul style="list-style-type: none"> <li>— Università degli Studi "Mediterranea" di Reggio Calabria</li> </ul>  |   | 2005/2006               |
|         | Laurea Specialistica in Progettazione dell'Architettura          | <ul style="list-style-type: none"> <li>— Università di Firenze</li> </ul>   |   | 2001/2002               |
|         | Laurea magistrale in Architettura                                | <ul style="list-style-type: none"> <li>— Politecnico di Milano II</li> <li>— Università di Napoli II</li> <li>— Università di Napoli Federico II</li> <li>— Facoltà di architettura dell'Università degli Studi G. D'Annunzio di Chieti-Pescara</li> <li>— Facoltà di architettura, Pianificazione e Ambiente del Politecnico di Milano</li> <li>— Università IUAV di Venezia</li> <li>— Facoltà di Architettura, Università di Bologna</li> <li>— Facoltà di Architettura di Siracusa, Università di Catania</li> <li>— Facoltà di architettura, Università degli Studi di Parma</li> <li>— Facoltà di architettura dell'Università degli Studi di Trieste</li> <li>— Università degli Studi di Trieste</li> <li>— Università degli Studi di Camerino</li> </ul> |   | 2004/2005               |
|         |  |   |   | 2014/2015               |
|         |  |   |   | 2006/2007               |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|---|---|-------------------------|
|         |   | — Università degli Studi di Enna "Kore"   |   | 2004/2005               |
|         |   | — Università degli Studi di Firenze   |   | 2008/2009               |
|         |   | — Università degli Studi di Cagliari  |   |                         |
|         |   | — Università degli Studi di Udine   |   | 2009/2010               |
|         |   | — Università degli Studi "Mediterranea" di Reggio Calabria                                  |   |                         |
|         |   | — Università degli Studi di Sassari   |   | 2010/2011               |
|         |   | — Università degli Studi della Basilicata   |   |                         |
|         |   | — Università degli Studi di Genova  |   | 2014/2015               |
|         | Laurea specialistica in architettura -progettazione architettonica e urbana | Facoltà "Ludovico Quaroni" dell'Università degli Studi "La Sapienza" di Roma                |   | 2000/2001               |
|         | Laurea Magistrale in architettura -progettazione architettonica e urbana    | Facoltà "Ludovico Quaroni" dell'Università degli Studi "La Sapienza" di Roma                |   | 2004/2005               |
|         | Laurea Specialistica in Architettura (Progettazione Urbana)                 | Università di Roma Tre  |   | 2001/2002               |
|         | Laurea Magistrale in Architettura (Progettazione Urbana)                    | Università di Roma Tre  |   | 2004/2005               |
|         | Laurea Specialistica in Architettura (Progettazione urbana e territoriale)  | Politecnico di Torino   |   | 2002/2003               |
|         | Laurea Specialistica in architettura (Architettura delle costruzioni)       | Politecnico di Milano (Facoltà di Architettura civile)                                      |   | 2001/2002               |
|         | Laurea magistrale in architettura (Architettura delle costruzioni)          | Politecnico di Milano (Facoltà di Architettura civile)                                      |   | 2004/2005               |
|         | Laurea Specialistica Architettura delle Costruzioni                         | Università degli Studi di Cagliari  |   | 2005/2006               |
|         | Laurea Specialistica in Architettura (Restauro)                             | — Facoltà di architettura di Valle Giulia dell'Università degli Studi "La Sapienza" di Roma |   | 2004/2005               |
|         |   | — Università degli Studi di Roma Tre — Facoltà di Architettura                              |   | 2001/2002               |
|         |   | — Università degli Studi di Napoli "Federico II"  |   | 2005/2006               |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|--|---|-------------------------|
|         | Laurea Magistrale in Architettura (Restauro)  | — Facoltà di architettura di Valle Giulia dell'Università degli Studi "La Sapienza" di Roma                        |   | 2004/2005               |
|         |   | — Università degli Studi di Roma Tre — Facoltà di Architettura   |   | 2009/2010               |
|         |   | — Università degli Studi di Napoli "Federico II"   |   | 2004/2005               |
|         | Laurea Specialista in Architettura (costruzione)                                      | Politecnico di Torino  |   | 2002/2003               |
|         | Laurea Specialistica in Architettura (Restauro e Valorizzazione)                      | Politecnico di Torino  |   | 2005/2006               |
|         | Laurea Specialistica in Architettura (Ambiente e Paesaggio)                           | Politecnico di Torino  |   | 2005/2006               |
|         | Laurea Specialistica in Architettura (Nuove Qualità delle Costruzioni e dei Contesti) | Università degli Studi della Campania "Luigi Vanvitelli" (Seconda Università degli Studi di Napoli) <sup>(2)</sup> |   | 2007/2008               |
|         | Laurea Magistrale in Architettura e Ingegneria Edile                                  | Università degli Studi della Campania "Luigi Vanvitelli" (Seconda Università degli Studi di Napoli) <sup>(2)</sup> |   | 2009/2010               |
|         | Laurea Magistrale in Architettura e Progetto dell'Ambiente Urbano                     | Università degli Studi della Campania "Luigi Vanvitelli" (Seconda Università degli Studi di Napoli) <sup>(2)</sup> |   | 2009/2010               |
|         | Laurea Magistrale in Architettura — Progettazione degli Interni e per l'Autonomia     | Università degli Studi della Campania "Luigi Vanvitelli" (Seconda Università degli Studi di Napoli) <sup>(2)</sup> |   | 2011/2012               |
|         | Laurea Magistrale in Architettura — Progettazione architettonica                      | Università degli Studi di Napoli "Federico II"   |   | 2004/2005               |
|         |   | — Politecnico di Torino  |   | 2013/2014               |
|         | Laurea Magistrale in Architettura e Città, Valutazione e progetto                     | Università degli Studi di Napoli "Federico II"   |   | 2004/2005               |
|         | Laurea Specialistica in Architettura e Città, Valutazione e progetto                  | Università degli Studi di Napoli "Federico II"   |   | 2007/2008               |
|         | Laurea Magistrale in Architettura — Arredamento e Progetto                            | Università degli Studi di Napoli "Federico II"   |   | 2008/2009               |

| Country | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Reference academic year |
|---------|--|---|---|-------------------------|
|         | Laurea Magistrale in Architettura Manutenzione e Gestione                            | Università degli Studi di Napoli "Federico II"  |   | 2008/2009               |
|         | Laurea Magistrale in Architettura Costruzione Città                                  | Politecnico di Torino   |   | 2010/2011               |
|         | Laurea Magistrale in Architettura per il Progetto Sostenibile                        | Politecnico di Torino   |   | 2010/2011               |
|         | Laurea Magistrale in Architettura per il Restauro e la Valorizzazione del Patrimonio | Politecnico di Torino   |   | 2010/2011               |
|         | Laurea Magistrale Architettura per la Sostenibilità                                  | Politecnico di Torino   |   | 2010/2011               |
|         | Laurea Magistrale Architettura per l'Ambiente Costruito                              | Politecnico di Torino   |   | 2010/2011               |
|         | Laurea Magistrale in Architettura e Culture del Progetto                             | Università IUAV di Venezia  |   | 2013/2014               |
|         | Laurea Magistrale in Architettura e Innovazione                                      | Università IUAV di Venezia  |   | 2013/2014               |
|         | Laurea Magistrale in Architettura per il Nuovo e l'Antico                            | Università IUAV di Venezia  |   | 2013/2014               |
|         | Laurea Magistrale in Architettura — Restauro   | Università degli Studi "Mediterranea" di Reggio Calabria  |   | 2013/2014               |
| Κύπρος  | Δίπλωμα Αρχιτέκτονα — Μηχανικού στην αρχιτεκτονική                                   | — Πανεπιστήμιο Κύπρου   | Βεβαίωση που εκδίδεται από το Επιστημονικό και Τεχνικό Επιμελητήριο Κύπρου (ΕΤΕΚ) η οποία επιτρέπει την άσκηση δραστηριοτήτων στον τομέα της αρχιτεκτονικής | 2005/2006               |
|         | Professional Diploma in Architecture   | — University of Nicosia   |   | 2006/2007               |
|         | Δίπλωμα Αρχιτεκτονικής (5 έτη)   | — Frederick University, Σχολή Αρχιτεκτονικής, Καλών και Εφαρμοσμένων Τεχνών του Πανεπιστημίου Frederick |   | 2008/2009               |
|         | Δίπλωμα Αρχιτέκτονα Μηχανικού (5 ετούς φοίτησης)                                     | — Frederick University, Σχολή Αρχιτεκτονικής, Καλών και Εφαρμοσμένων Τεχνών του Πανεπιστημίου Frederick |   | 2008/2009               |
|         | Δίπλωμα Αρχιτέκτονα Μηχανικού (5 ετούς φοίτησης)                                     | Frederick University, Πολυτεχνική Σχολή, Τμήμα Αρχιτεκτόνων Μηχανικών του Πανεπιστημίου Frederick       |   | 2014/2015               |
| Latvija | Arhitekta diploms  | Rīgas Tehniskā universitāte   | Latvijas Arhitektu savienības sertifikācijas centra Arhitekta prakses sertifikāts   | 2007/2008               |

| Country      | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications   | Reference academic year                     |
|--------------|---|--|---|---|
| Lietuva      | Bakalauro diplomas (Architektūros bakalauras)<br><br>Magistro diplomas (Architektūros magistras)  | — Kauno technologijos universitetas<br><br>— Vilniaus Gedimino technikos universitetas<br><br>— Vilniaus dailės akademija<br><br>— Kauno technologijos universitetas<br><br>— Vilniaus Gedimino technikos universitetas<br><br>— Vilniaus dailės akademija | Architekto kvalifikacijos atestatas (Atestuotas architektas)  | 2007/2008                                   |
| Magyarország | Okleveles építészmérnök MSc<br><br>Okleveles építészmérnök<br><br>Okleveles építészmérnök   | — Budapesti Műszaki és Gazdaságtudományi Egyetem — Építész-mérnöki Kar<br><br>— Széchenyi István Egyetem, Győr — Műszaki Tudományi Kar<br><br>— Pécsi Tudományegyetem — Pollack Mihály Műszaki Kar   | A területi illetékes építész-kamara hatósági bizonyítványa a szakmagyakorlási jogosultságról.   | 2007/2008<br><br>2007/2008<br><br>2007/2008 |
| Malta        | Degree in Bachelor of Engineering and Architecture (Hons)   | Universita' ta' Malta  | Warrant b'titlu ta' "Perit" mahrug mill-Bord tal-Warrant  | 2007/2008                                   |
| Nederland    | 1. Het getuigschrift van het met goed gevolg afgelegde doctoraal examen van de studierichting bouwkunde, afgstudeer-richting architectuur<br><br>2. Het getuigschrift van het met goed gevolg afgelegde doctoraal examen van de studierichting bouwkunde, differentiatie architectuur en urbanistiek<br><br>3. Het getuigschrift hoger beroepsonderwijs, op grond van het met goed gevolg afgelegde examen verbonden aan de opleiding van de tweede fase voor beroepen op het terrein van de architec-tuur, afgegeven door de betrokken examencom-missies van respectieve-lijk: | 1. Technische Universiteit te Delft<br><br>2. Technische Universiteit te Eindhoven   | Verklaring van de Stichting Bureau Architectenregister die bevestigt dat de opleiding voldoet aan de normen van artikel 46.<br><br>As of 2014/2015: Verklaring van Bureau Architectenregis-ter die bevestigt dat aan de eisen voor de beroepskwalificatie van architect is vol-daan | 1988/1989<br><br>1988/1989                  |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|---|---|---|-------------------------|
|         | <ul style="list-style-type: none"> <li>— de Amsterdamse Hogeschool voor de Kunsten te Amsterdam</li> <li>— de Hogeschool Rotterdam en omstreken te Rotterdam</li> <li>— de Hogeschool Katholieke Leergangen te Tilburg</li> <li>— de Hogeschool voor de Kunsten te Arnhem</li> <li>— de Rijkshogeschool Groningen te Groningen</li> <li>— de Hogeschool Maastricht te Maastricht</li> </ul> |   |   |                         |
|         | 4. Master of Science in Architecture, Urbanism & Building Sciences variant Architecture   | 4. Technische Universiteit Delft Faculteit Bouwkunde                                      |   | 2003/2004               |
|         | — Master of Science in Architecture, Building and Planning (specialisatie: Architecture)  | Technische Universiteit Eindhoven   |   | 2002/2003               |
|         | Master of Architecture  | ArtEZ hogeschool voor de kunsten/<br>ArtEZ Academie van Bouwkunst                         |   | 2003/2004               |
|         |   | Amsterdamse Hogeschool van de Kunsten/Academie van Bouwkunst Amsterdam                    |   | 2003/2004               |
|         |   | Hanze Hogeschool Groningen/Academie van Bouwkunst Groningen                               |   | 2003/2004               |
|         |   | Hogeschool Rotterdam/Rotterdamse Academie van Bouwkunst                                   |   | 2003/2004               |
|         |   | Fontys Hogeschool voor de Kunsten/<br>Academie voor Architectuur en Stedenbouw in Tilburg |   | 2003/2004               |

| Country    | Evidence of formal qualifications  | Body awarding the evidence of qualifications                         | Certificate accompanying the evidence of qualifications   | Reference academic year |
|------------|--|--|---|-------------------------|
| Österreich | 1. Diplom-Ingenieur, Dipl.-Ing.  | 1. Technische Universität Graz (Erzherzog-Johann-Universität Graz)   | Bescheinigung des Bundesministers für Wissenschaft, Forschung und Wirtschaft über die Erfüllung der Voraussetzung für die Eintragung in die Architektenkammer/Bescheinigung einer Bezirksverwaltungsbehörde über die Ausbildung oder Befähigung, die zur Ausübung des Baumeistergewerbes (Berechtigung für Hochbauplanung) berechtigt | 1998/1999               |
|            | 2. Diplom-Ingenieur, Dipl.-Ing.  | 2. Technische Universität Wien                                       |   |                         |
|            | 3. Diplom-Ingenieur, Dipl.-Ing.  | 3. Universität Innsbruck (Leopold-Franzens-Universität Innsbruck)    |   |                         |
|            | 4. Magister der Architektur, Magister architecturae, Mag. Arch.  | 4. Universität für Angewandte Kunst in Wien                          |   |                         |
|            | 5. Magister der Architektur, Magister architecturae, Mag. Arch.  | 5. Akademie der Bildenden Künste in Wien                             |   |                         |
|            | 6. Magister der Architektur, Magister architecturae, Mag. Arch.  | 6. Universität für künstlerische und industrielle Gestaltung in Linz |   |                         |
|            | 7. Bachelor of Science in Engineering (BSc) (aufgrund eines Bachelorstudiums), Diplom-Ingenieur/in (Dipl.-Ing. oder DI) für technisch-wissenschaftlich Berufe (aufgrund eines Bachelor- und eines Masterstudiums entspricht MSc) | 7. Fachhochschule Kärnten  |   | 2004/2005               |
|            | 8. Diplom-Ingenieur, Dipl.-Ing.  | 8. Universität Innsbruck (Leopold-Franzens-Universität Innsbruck)    |   | 2008/2009               |
|            | 9. Diplom-Ingenieur, Dipl.-Ing.  | 9. Technische Universität Graz (Erzherzog-Johann-Universität Graz)   |   | 2008/2009               |
|            | 10. Diplom-Ingenieur, Dipl.-Ing.   | 10. Technische Universität Wien                                      |   | 2006/2007               |
|            | 11. Master of Architecture (MArch) (aufgrund eines Bachelor- und eines Masterstudiums entspricht MSc)  | 11. Universität für künstlerische und industrielle Gestaltung Linz   |   | 2008/2009               |
|            |  | 11. Akademie der bildenden Künste Wien                               |   | 2008/2009               |
|            | 12. Masterstudium der Architektur  | 12. Universität für angewandte Kunst Wien                            |   | 2011/2012               |

| Country  | Evidence of formal qualifications   | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Reference academic year  |
|----------|---|---|---|--|
|          | 13. BA-Studiengang Bauplanung u. Bauwirtschaft Studienzweig Architektur u. MA-Studiengang Architektur       | 13. Fachhochschule Joanneum Graz  |   | 2015/2016  |
|          | 14. Bachelorstudiengang "Green Building" und Masterstudiengang "Architektur — Green Building"               | 14. Fachhochschule Campus Wien  |   | 2016/2017  |
| Polska   | magister inżynier architekt (mgr inż. arch.)  | — Politechnika Białostocka<br>— Politechnika Gdańska<br>— Politechnika Łódzka<br>— Politechnika Śląska<br>— Zachodniopomorski Uniwersytet Technologiczny w Szczecinie<br>— Politechnika Warszawska<br>— Politechnika Krakowska<br>— Politechnika Wrocławska<br>— Krakowska Akademia im. Andrzeja Frycza Modrzewskiego | Zaświadczenie o członkostwie w okręgowej izbie architektów/Zaświadczenie Krajowej Rady Izby Architektów RP potwierdzające posiadanie kwalifikacji do wykonywania zawodu architekta zgodnych z wymaganiami wynikającymi z przepisów prawa Unii Europejskiej osoby nie będącej członkiem Izby | 2007/2008  |
|          | dypłom ukończenia studiów wyższych potwierdzający uzyskanie tytułu zawodowego magistra inżyniera architekta | — Wyższa Szkoła Ekologii i Zarządzania w Warszawie<br>— Politechnika Lubelska<br>— Uniwersytet Techniczno-Przyrodniczy im. Jana i Jędrzeja Śniadeckich w Bydgoszczy<br>— Politechnika Poznańska<br>— Uniwersytet Zielonogórski  |   | 2003/2004<br>2011/2012<br>2008/2009<br>2011/2012<br>2007/2008<br>2008/2009 |
|          | dypłom studiów wyższych potwierdzający uzyskanie tytułu zawodowego magistra inżyniera architekta            | Politechnika Świętokrzyska  |   | 2012/2013  |
| Portugal | Carta de curso de licenciatura em Arquitectura  | — Faculdade de Arquitectura da Universidade técnica de Lisboa<br>— Faculdade de arquitectura da Universidade do Porto<br>— Escola Superior Artística do Porto<br>— Faculdade de Ciências e Tecnologia da Universidade de Coimbra  | Certificado de cumprimento dos pré-requisitos de qualificação para inscrição na Ordem dos Arquitectos, emitido pela competente Ordem dos Arquitectos  | 1988/1989  |



| Country | Evidence of formal qualifications                               | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year                          |
|---------|---|---|---|--|
|         |   | — Universidade Lusíada de Lisboa  |   | 1986/1987  |
|         |   | — Faculdade de Arquitectura e Artes da Universidade Lusíada de Vila Nova de Famalicão |   | 1993/1994  |
|         |   | — Universidade Lusófona de Humanidades e Tecnologia                                   |   | 1995/1996  |
|         |   | — Instituto Superior Manuel Teixeira Gomes  |   | 1997/1998  |
|         |   | — Universidade do Minho   |   | 1997/1998  |
|         |   | — Instituto Superior Técnico da Universidade Técnica de Lisboa                        |   | 1998/1999  |
|         |   | — ISCTE-Instituto Universitário de Lisboa   |   | 1998/1999  |
|         | Carta de Curso de Licenciatura em Arquitectura e Urbanismo      | — Escola Superior Gallaecia   |   | 2002/2003  |
|         | Para os cursos iniciados a partir do ano académico de 1991/1992 | — Faculdade de Arquitectura e Artes da Universidade Lusíada do Porto                  |   | 1991/1992  |
|         | Mestrado integrado em Arquitectura                              | — Universidade Autónoma de Lisboa   |   | 2001/2002  |
|         |   | — Universidade Técnica de Lisboa (Instituto Superior Técnico)                         |   | 2001/2002  |
|         | Carta de curso de Mestrado integrado em Arquitectura            | — Universidade do Minho   |   | 1997/1998  |
|         |   | — ISCTE-Instituto Universitário de Lisboa   |   | 1999/2000  |
|         |   | — Universidade Lusíada de Vila Nova de Famalicão                                      |   | 2006/2007  |
|         |   | — Universidade Lusófona de Humanidades e Tecnologias                                  |   | 1995/1996  |
|         |   | — Faculdade de Arquitectura da Universidade Técnica de Lisboa                         |   | 2008/2009  |
|         |   | — Universidade de Évora   |   | 2007/2008  |
|         |   | — Escola Superior Artística do Porto (ESAP)   |   | 1988/1989 (Licenciatura)<br>2007/2008 (Mestrado) |
|         |   | — Instituto Superior Manuel Teixeira Gomes  |   | 2006/2007  |
|         |   | Universidade Lusíada do Porto   |   | 2006/2007  |

| Country | Evidence of formal qualifications                                | Body awarding the evidence of qualifications                | Certificate accompanying the evidence of qualifications  | Reference academic year |
|---------|--|---|--|-------------------------|
|         | Carta de curso de Mestrado Integrado em Arquitectura e Urbanismo | — Universidade Fernando Pessoa                              |  | 2006/2007               |
|         |  | — ESG/Escola Superior Gallaecia                             |  | 2002/2003               |
|         | Diploma de Mestre em Arquitectura                                | — Universidade Lusíada de Lisboa                            |  | 1988/1989               |
|         | Carta de Curso, Grau de Licenciado                               | — Universidade de Évora                                     |  | 2001/2002               |
|         | Carta de curso de mestre em Arquitectura                         | — Universidade do Porto                                     |  | 2003/2004               |
|         | Certidão de Licenciatura em Arquitectura                         | Universidade Católica Portuguesa Centro Regional das Beiras |  | 2001/2002               |
|         | Diploma de Mestrado Integrado em Arquitectura                    | Universidade Católica Portuguesa Centro Regional das Beiras |  | 2001/2002               |
| România | Diploma de arhitect  | — Universitatea de arhitectură și urbanism “ION MINCU”      | Certificat de dobândire a dreptului de semnătură și de înscriere în Tabloul Național al Arhitecților | 2010/2011               |
|         |  | — Universitatea “Politehnică” din Timișoara                 |  | 2011/2012               |
|         |  | — Universitatea Tehnică din Cluj-Napoca                     |  | 2010/2011               |
|         |  | — Universitatea Tehnică “Gheorghe Asachi” din Iași          |  | 2007/2008               |
|         |  | — Universitatea Spiru Haret — Facultatea de Arhitectură     |  | 2009/2010               |
|         | Diploma de licență și master                                     | — Universitatea de arhitectură și urbanism “ION MINCU”      |  | 2011/2012               |
|         |  | — Universitatea “Politehnică” din Timișoara                 |  |                         |
|         |  | — Universitatea Tehnică din Cluj-Napoca                     |  |                         |
|         |  | — Universitatea Tehnică “Gheorghe Asachi” din Iași          |  |                         |
|         |  | — Universitatea Spiru Haret — Facultatea de Arhitectură     |  |                         |

| Country       | Evidence of formal qualifications                                 | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Reference academic year |
|---------------|---|---|---|-------------------------|
| Slovenija     | Magister inženir arhitekture/<br>Magistrica inženirka arhitekture | Univerza v Ljubljani, Fakulteta za Arhitekturo  | Potrdilo Zbornice za arhitekturo in prostor o usposobljenosti za opravljanje nalog odgovornega projektanta arhitekture  | 2007/2008               |
|               | Diploma o pridobljeni magistrski izobrazbi 2. stopnje             | Univerza v Mariboru; Fakulteta za gradbeništvo, prometno inženirstvo in arhitekturo                                 |   |                         |
| Slovensko     | Diplom inžiniera Architekta (titul Ing. arch.)                    | — Slovenská technická univerzita v Bratislave, Fakulta architektúry, študijný odbor 5.1.1 Architektúra a urbanizmus | Certifikát vydaný Slovenskou komorou architektov na základe 3-ročnej praxe pod dohľadom a vykonania autorizačnej skúšky | 2007/2008               |
|               |   | — Technická univerzita v Košiciach, Fakulta umení, študijný odbor 5.1.1 Architektúra a urbanizmus                   |   | 2004/2005               |
|               | Diplom magistra umení (titul Mgr. art.)                           | — Vysoká škola výtvarných umení v Bratislave, študijný odbor 2.2.7 "Architektonická tvorba"                         |   | 2007/2008               |
| Suomi/Finland | Arkkitehdin tutkinto/Arkiteksam                                   | — Teknillinen korkeakoulu/Tekniska högskolan (Helsinki)   |   | 1998/1999               |
|               |   | — Tampereen teknillinen korkeakoulu/Tammerfors tekniska högskola  |   |                         |
|               |   | — Oulun yliopisto/Uleåborgs universitet   |   |                         |
|               |   | — Aalto-yliopisto/Aalto-universitet   |   |                         |
|               |   | — Tampereen teknillinen yliopisto/Tammerfors tekniska universitet   |   |                         |
|               |   | — Oulun yliopisto   |   | 2010/2011               |
|               |   | — Tampereen teknillinen yliopisto   |   | 2010/2011               |
| Sverige       | Arkitektexamen  | — Chalmers Tekniska Högskola AB   |   | 1998/1999               |
|               |   | — Kungliga Tekniska Högskolan   |   |                         |
|               |   | — Lunds Universitet   |   |                         |
|               |   | — Umeå universitet  |   | 2009/2010               |

| Country        | Evidence of formal qualifications     | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications   | Reference academic year |
|----------------|---------------------------------------|---|---|-------------------------|
| United Kingdom | 1. Diplomas in architecture           | 1. — Universities   | Certificate of architectural education, issued by the Architects Registration Board.  | 1988/1989               |
|                |                                       | — Colleges of Art   |   |                         |
|                |                                       | — Schools of Art  | The diploma and degree courses in architecture of the universities, schools and colleges of art should have met the requisite threshold standards as laid down in Article 46 of this Directive and in Criteria for validation published by the Validation Panel of the Royal Institute of British Architects and the Architects Registration Board.   | 2006/2007               |
|                |                                       | — Cardiff University  |   | 2008/2009               |
|                |                                       | — University for the Creative Arts  |   | 2008/2009               |
|                |                                       | — Birmingham City University  |   | 2008/2009               |
|                |                                       | — University of Nottingham  |   | 2008/2009               |
|                | 2. Degrees in architecture            | 2. Universities   | EU nationals who possess the Royal Institute of British Architects Part I and Part II certificates, which are recognised by ARB as the competent authority, are eligible. Also EU nationals who do not possess the ARB-recognised Part I and Part II certificates will be eligible for the Certificate of Architectural Education if they can satisfy the Board that their standard and length of education has met the requisite threshold standards of Article 46 of this Directive and of the Criteria for validation. | 1988/1989               |
|                | 3. Final examination                  | 3. Architectural Association  |   |                         |
|                | — Final Examination (ARB/RIBA Part 2) | — Architectural Association   | An Architects Registration Board Part 3 Certificate of Architectural Education  | 2011/2012               |
|                | 4. Examination in architecture        | 4. Royal College of Art   |   |                         |
|                | 5. Examination Part II                | 5. Royal Institute of British Architects  |   |                         |
|                | 6. Master of Architecture             | 6. — University of Liverpool  |   | 2006/2007               |
|                |                                       | — Cardiff University  |   | 2006/2007               |
|                |                                       | — University of Plymouth  |   | 2007/2008               |
|                |                                       | — Queens University, Belfast  |   | 2009/2010               |
|                |                                       | — Northumbria University  |   | 2009/2010               |
|                |                                       | — University of Brighton  |   | 2010/2011               |
|                |                                       | — Birmingham City University  |   | 2010/2011               |
|                |                                       | — University of Kent  |   | 2006/2007               |
|                |                                       | — University of Ulster  |   | 2008/2009               |
|                |                                       | — University of Edinburgh/Edinburgh School of Architecture and Landscape Architecture |   | 2009/2010               |
|                |                                       | — Leeds Metropolitan University   |   | 2011/2012               |
|                |                                       | — Leeds Beckett University (until 2014 Leeds Metropolitan University)                 |   | 2014/2015               |
|                |                                       | — University of Newcastle upon Tyne   |   | 2011/2012               |
|                |                                       | — University of Lincoln   |   | 2011/2012               |
|                |                                       | — University of Huddersfield  |   | 2012/2013               |
|                |                                       | — University of the West of England   |   | 2011/2012               |

| Country | Evidence of formal qualifications   | Body awarding the evidence of qualifications   | Certificate accompanying the evidence of qualifications | Reference academic year                          |
|---------|---|--|---|--|
|         |   | — University of Westminster  |   | 2011/2012  |
|         |   | — University for the Creative Arts   |   | 2013/2014  |
|         |   | — University of Central Lancashire   |   | 2014/2015  |
|         | 7. Graduate Diploma in Architecture   | 7. University College London   |   | 2006/2007  |
|         | 8. Professional Diploma in Architecture   | 8. University of East London<br>— Northumbria University   |   | 2007/2008<br>2008/2009                           |
|         | 9. Graduate Diploma in Architecture/MArch Architecture                              | 9. University College London   |   | 2008/2009  |
|         | 10. Postgraduate Diploma in Architecture  | 10. — Leeds Metropolitan University<br>— University of Edinburgh<br>— Sheffield Hallam University                                  |   | 2007/2008<br>2008/2009<br>2009/2010              |
|         | 11. MArch Architecture (ARB/RIBA Part 2)  | 11. — University College London<br>— University of Nottingham<br>— University of East London                                       |   | 2011/2012<br>2013/2014<br>2013/2014              |
|         | 12. Master of Architecture (MArch)  | 12. Liverpool John Moores University<br>— De Montfort University<br>— Arts University Bournemouth<br>— Nottingham Trent University |   | 2011/2012<br>2011/2012<br>2011/2012<br>2012/2013 |
|         | 13. Postgraduate Diploma in Architecture and Architectural Conservation             | 13. University of Edinburgh  |   | 2008/2009  |
|         | 14. Postgraduate Diploma in Architecture and Urban Design                           | 14. University of Edinburgh  |   | 2008/2009  |
|         | 15. MPhil in Environmental Design in Architecture (Option B)                        | 15. University of Cambridge  |   | 2009/2010  |
|         | — MPhil in Architecture and Urban Design  | — University of Cambridge  |   | 2013/2014  |
|         | 16. Professional Diploma in Architecture: Advanced Environmental and Energy Studies | 16. University of East London/Centre for Alternative Technology  |   | 2008/2009  |
|         | 17. MArchD in Applied Design in Architecture  | 17. Oxford Brookes University  |   | 2011/2012  |

| Country | Evidence of formal qualifications  | Body awarding the evidence of qualifications  | Certificate accompanying the evidence of qualifications | Reference academic year |
|---------|--|---|---|-------------------------|
|         | 18. M'Arch   | 18. University of Portsmouth  |   | 2011/2012               |
|         | 19. Master of Architecture (International)   | 19. University of Huddersfield  |   | 2012/2013               |
|         | 20. Master of Architecture with Honours  | 20. Cardiff University  |   | 2015/2016               |
|         | 21. MArch (Architecture)   | 21. Kingston University   |   | 2013/2014               |
|         | 22. MArch in Architecture  | 22. University of Greenwich   |   | 2013/2014               |
|         | 23. The degree of Master of Architecture in the College of Humanities and Social Science | 23. University of Edinburgh/Edinburgh School of Architecture and Landscape Architecture                               |   | 2012/2013               |
|         | 24. M.Arch   | 24. Sheffield Hallam University   |   | 2013/2014               |
|         | 25. MArch Architecture   | 25. University of the Arts London is the awarding body and the MArch Architecture is offered by Central Saint Martins |   | 2015/2016               |
|         | 26. MArch: Master of Architecture  | 26. London South Bank University  |   | 2015/2016               |
|         | 27. Master of Architecture with Urban Planning   | 27. University of Dundee  |   | 2015/2016               |
|         | 28. MArch Architecture: Collaborative Practice   | 28. University of Sheffield   |   | 2015/2016               |

(<sup>1</sup>) The two denominations “Università degli studi di (name of the town)” and “Università di (name of the town)” are equivalent terms that identify the same University.

(<sup>2</sup>) As of October 2016 denomination changed into “Università degli Studi della Campania “Luigi Vanvitelli””.



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