

Opinion of the European Economic and Social Committee on the ‘Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 — the Framework Programme for Research and Innovation (2014-2020)’

COM(2011) 809 final — 2011/0401 (COD)

‘Proposal for a Regulation of the European Parliament and of the Council laying down the rules for the participation and dissemination in Horizon 2020 — the Framework Programme for Research and Innovation (2014-2020)’

COM(2011) 810 final — 2011/0399 (COD)

‘Proposal for a Council Decision establishing the Specific Programme Implementing Horizon 2020 — the Framework Programme for Research and Innovation (2014-2020)’

COM(2011) 811 final — 2011/0402 (CNS)

‘Proposal for a Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing Horizon 2020 — the Framework Programme for Research and Innovation’

COM(2011) 812 final — 2011/0400 (NLE)

(2012/C 181/20)

Rapporteur: **Mr WOLF**

On 15 December 2011 the Council, and on 13 December 2011 the European Parliament, decided to consult the European Economic and Social Committee, under Articles 173(3) and 182(1) of the Treaty on the Functioning of the European Union, on the:

Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 — the Framework Programme for Research and Innovation (2014–2020)

COM(2011) 809 final — 2011/0401 (COD).

On 19 December 2011 the Council, and on 13 December 2011 the European Parliament, decided to consult the European Economic and Social Committee, under Articles 173, 183 and 188(2) of the Treaty on the Functioning of the European Union, on the:

Proposal for a Regulation of the European Parliament and of the Council laying down the rules for the participation and dissemination in Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020)

COM(2011) 810 final — 2011/0399 (COD).

On 15 December 2011 the Council decided to consult the European Economic and Social Committee, under Article 182(4) of the Treaty on the Functioning of the European Union, on the:

Proposal for a Council Decision establishing the Specific Programme Implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020)

COM(2011) 811 final — 2011/0402 (CNS).

On 21 December 2011 the Council decided to consult the European Economic and Social Committee, under Article 7(1) of the Treaty on the Functioning of the European Union, on the:

Proposal for a Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2014–2018) complementing Horizon 2020 – the Framework Programme for Research and Innovation

COM(2011) 812 final — 2011/0400 (NLE).

The Section for the Single Market, Production and Consumption, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 8 March 2012.

At its 479th plenary session, held on 28 and 29 March 2012 (meeting of 28 March), the European Economic and Social Committee adopted the following opinion by 122 votes to 3 with 7 abstentions.

1. Summary and recommendations

1.1 The EESC welcomes and endorses the Commission's proposals and their integrated approach as key elements of the Europe 2020 strategy. It also commends the Commission's wish to give more emphasis to research and innovation. It notes that considerable progress has been made in the documents, also in line with its previous recommendations, but sees a need for additions, clarification and correction in some points.

1.2 The proposals relating to simplification and flexibility are particularly appreciated. Continuity should be ensured as far as possible and further complexity avoided when elaborating these.

1.3 The stated intentions on governance should be fleshed out as soon as possible, which requires agreement between all those concerned.

1.4 The Commission should already present an interim progress report on experience with Horizon 2020, its implementation and further elaboration after two years.

1.5 The occupational image of European researchers should be made more attractive in accordance with the conclusions of the competitiveness Council of 2 March 2010⁽¹⁾, in order to eliminate or compensate for current social security disadvantages.

1.6 In the Commission proposals (Framework Programme, rules for participation, Euratom Programme) where a regulation is now recommended as the legal form, a decision should be retained as the instrument, unless the Commission can provide a convincing justification for the change.

1.7 All parts of the programme and rules are welcomed and endorsed, in particular those that benefit social innovation, frontier research, SMEs and universities.

1.8 The main instrument of Horizon 2020 should be manageable collaborative projects with a workable number of participants.

1.9 Infrastructure projects exemplify European added value in accordance with the subsidiarity principle, and this should be clearly reflected in the indicative budget allocation.

1.10 In relation to *Societal challenges*, considerably greater weight should be given to research and development activities to promote a low-carbon, sustainable energy system.

1.11 Moreover, the list of *Societal challenges* should be expanded to include the important theme *Innovativeness of society and business*.

1.12 The Committee explicitly endorses the consolidation of key technologies, which both underpin industrial competitiveness and help to meet societal challenges.

1.13 When deciding between evaluation criteria for promoting research, excellence should be given priority, as it is a proven benchmark. For promoting innovation, market assessment is also important, though very problematic as a predictive tool.

1.14 Potential inconsistencies should be identified between the objectives of a science-driven research policy and an innovation-friendly industrial and competition policy, and apt solutions found in each case.

1.15 Successful integration of research and innovation policy calls for concerted action between many directorates-general and departments of the Commission, and the Committee supports such efforts. Proficient administrators are also needed who have been familiar with the research area for a long time and will remain so. The Commission should cultivate and maintain its scientific and technical expertise and judgment.

1.16 The main goals of the Euratom programme should, as proposed, be nuclear safety, permanent disposal of high-level nuclear waste and development of nuclear fusion, with the international project ITER as the flagship. The programme should be designed so as to ensure that Member States provide support and commitment.

1.17 An overview should be prepared for the layperson explaining the instruments and specialist terms in Horizon 2020 so as to improve its user-friendliness. Particular emphasis should be placed on adequate and competent advice for SMEs.

⁽¹⁾ Conclusions on the mobility and careers of researchers. 2999th Council meeting on competitiveness, held in Brussels on 1-2 March 2010.

2. Gist of the Commission proposals

This opinion looks at a package of proposals presented by the Commission in separate texts:

- 1) a proposal for the Horizon 2020 Framework Programme (2014–2020);
- 2) a proposal for a single set of Rules for Participation and Dissemination;
- 3) a proposal for a single specific programme to implement Horizon 2020;
- 4) a proposal for the parts of Horizon 2020 corresponding to the Euratom Treaty.

These documents together make up 380 pages. The gist of them will be outlined in points 2.1 to 2.4 below, so as to provide a reference for the Committee's comments and recommendations set out in points 3 to 7.

2.1 Horizon 2020 Framework Programme

2.1.1 Breaking with custom, the Commission has not put forward a proposal for an 8th RTD Framework Programme as expected. Rather, the Horizon 2020 Framework Programme – in accordance with the intentions set out in the Green Paper ⁽²⁾ – is designed to bring together those activities that are currently supported under the 7th RTD Framework Programme and the parts of the Competitiveness and Innovation Framework Programme (CIP) that are relevant to innovation, and by the European Institute of Innovation and Technology (EIT). In addition, the Commission is proposing a regulation as the legal instrument, which would replace the current decision of the European Parliament and the Council.

2.1.2 The stated main objectives and cornerstones of funding policy under Horizon 2020 are:

- a) scientific excellence, with a proposed budget of EUR 27 818 million;
- b) industrial leadership, with a proposed budget of EUR 20 280 million;
- c) societal challenges, with a proposed budget of EUR 35 888 million.

2.1.3 A further objective is to facilitate access to the Framework Programme and make it easier to take part.

2.1.4 The total budget proposed for Horizon 2020 is around EUR 88 billion, to be supplemented by funding from the Structural Funds and the education programme.

2.2 Participation and dissemination rules

2.2.1 These concern the terms for taking part in the Framework Programme, and are intended to provide a single, flexible legal framework, simplify procedures and be valid for all aspects of Horizon 2020. Room is also left for adjustments or exceptions.

2.2.2 A single funding rate is set with no differentiation among participants. In addition, more use is to be made of lump sums, flat rates and scale-of-unit costs, with broad acceptance of the usual accounting practices of grant beneficiaries.

2.2.3 The following funding rates are envisaged for grants for direct eligible costs:

- a) the Horizon 2020 grant may reach a maximum of 100 % of the total **direct eligible costs**, without prejudice to the co-financing principle;
- b) the Horizon 2020 grant is limited to a maximum of 70 % of the total **direct eligible costs** for the following actions:

- actions primarily consisting of activities such as prototyping, testing, demonstrating, experimental development, piloting, and market replication;
- programme co-fund actions.

2.2.4 **Indirect eligible costs** are determined by applying a flat rate of 20 % of the total direct eligible costs; alternatively, the work programme may also allow flat-rate financing or lump-sum financing to be used.

2.2.5 The following conditions of participation apply:

2.2.5.1 At least three legal entities shall participate in an action:

- each of the three shall be established in a Member State or associated country;
- no two of the three may be established in the same Member State or associated country;
- all three legal entities shall be independent of each other within the meaning of Article 7.

2.2.5.2 By way of exception, the minimum condition is participation of one legal entity established in a Member State or associated country in the following instances:

- a) frontier research actions in the case of the European Research Council (ERC);

⁽²⁾ COM(2011) 48; OJ C 318, 29.10.2011, p. 121.

- b) when using CAF;
- c) programme co-fund actions;
- d) specific situations provided for in the work programme or work plan;
- e) coordination and support actions and training and mobility actions.

2.2.6 Assessment procedures

2.2.6.1 The proposals submitted are to be evaluated on the basis of the following criteria:

- a) excellence;
- b) impact;
- c) quality and efficiency of the implementation.

2.2.6.2 Proposals for frontier research (ERC) are assessed on excellence alone.

2.3 Specific Programme

2.3.1 Whereas the 7th Framework Programme used several Specific Programmes (e.g. 'Cooperation' and 'Capacities'), the Commission is now proposing just one Specific Programme covering the different funding objectives and structures under the sub-programmes.

2.3.2 The four sub-programmes are:

I. Excellent science, comprising:

- i. frontier research (ERC);
- ii. research on future and emerging technologies (FET);
- iii. Marie Curie actions;
- iv. European research infrastructures.

II. Industrial leadership, comprising:

- i. information and communication technologies;
- ii. nanotechnologies;
- iii. materials;
- iv. biotechnology;
- v. manufacturing and processing;
- vi. space.

Enhancing access to risk finance and increasing innovation in small and medium-sized enterprises also fall under this heading.

III. Societal challenges, comprising:

- i. health, demographic change and wellbeing;
- ii. food security, sustainable agriculture, marine and maritime research, and the bio-economy;
- iii. secure, clean and efficient energy;
- iv. smart, green and integrated transport;
- v. climate action, resource efficiency and raw materials;
- vi. inclusive, innovative and secure societies.

IV. Non-nuclear direct actions of the Joint Research Centre (JRC), where the objective is to enhance the scientific evidence base for policy-making, to promote understanding of natural processes underlying societal challenges, and to examine emerging fields of science and technology.

(JRC measures relating to the nuclear sphere are covered in the Euratom programme.)

2.4 Euratom programme 2014–2018

2.4.1 The Euratom programme covers research activities relating to nuclear energy (nuclear fusion and nuclear fission) and radiation protection. Breaking with custom, the proposal is for a regulation rather than a decision. It is intended to help meet the strategic objectives of Horizon 2020 (see point 2.1.2). The duration of the programme is limited to five years under the Euratom Treaty, which means that it expires in 2018.

2.4.2 The indirect actions of the Euratom programme concern:

- a) safe operation of nuclear systems;
- b) solutions for the management of ultimate nuclear waste;
- c) development and sustainability of nuclear competences (nuclear fission);
- d) promoting radiation protection;
- e) development activities in nuclear fusion exploiting existing and future fusion facilities;
- f) development of materials, technologies and conceptual design for future fusion facilities;
- g) promoting innovation and industrial competitiveness;
- h) ensuring availability and use of research infrastructures.

2.4.3 The Commission is assisted by consultative committees in implementing the indirect actions.

2.4.4 The direct actions concern the R&D programme of the Joint Research Centre.

2.4.5 A separate decision has been presented for ITER, as the funding for this project will be outside the Multiannual Financial Framework.

3. General comments of the Committee

Given the length of the four documents presented by the Commission, the Committee can only comment on a small number of points that it considers of key importance.

3.1 General endorsement

The EESC welcomes and endorses the Commission's proposals as key elements of the Europe 2020 strategy, and sees them as an effective integrated approach. It observes that many of its earlier recommendations (e.g. on simplification⁽³⁾, the Green Paper⁽⁴⁾ and the Innovation Union⁽⁵⁾) have been assimilated, and refers to these opinions and their recommendations, but sees a need for additions, clarification and correction in some points.

3.2 Priorities, budget, 3 % target and leverage effect

3.2.1 Research, development and innovation will determine Europe's future position in the world; in view of their critical importance they must be given considerably higher priority, not just in the Commission, but also and above all in the Member States. The Committee is pleased to note that the proposed budget for Horizon 2020 really demonstrates the Commission's intention to place greater emphasis than before on research and innovation, as well as the investment they require. This is in line with the Committee's repeated recommendations and therefore receives its full support. The amount of the budget now proposed must still be regarded as inadequate in objective terms, given the 3 % target discussed below and the ambitious thematic research and innovation goals. However, the Committee accepts this as a feasible compromise in the context of other practical constraints.

3.2.2 In 2002, the European Council in Barcelona adopted a 3 % target for the Lisbon strategy, which ran until 2010, a target that was intended to apply mainly to R&D funding policy in the Member States and in industry. The aim was that by the year 2010 3 % of Member States' GDP would be earmarked for research and development. One third of this amount would come from public funding and two thirds from industry. This target has not yet been reached, either as an EU average or in most of the individual Member States. This is why it was taken over into the Europe 2020 strategy.

3.2.3 The funding policy laid down in the Horizon 2020 programme should be the critical lever that enables this 3 % target to be reached at least by the next deadline. Unfortunately, although the budget has been increased it is still doubtful that this will provide sufficient leverage to achieve the target. The total Community budget amounts to around 1 % of the Member States' GDP. The percentage of that budget earmarked for Horizon 2020 is just under 9 %. Thus the leverage effect expressed as a ratio is still less than 1 to 30. The proposed budget can therefore be seen only as a necessary first step towards securing the amount of funding actually required, and should on no account be reduced.

3.3 Simplification and continuity

The EESC particularly welcomes those measures designed to achieve the simplification of procedures⁽⁶⁾ that it has long been calling for. There is a difficult line to tread here between simplification, case-specificity and the continuity that is also urged, and further fine-tuning may be necessary. But it is crucial that this should not engender a slide back into over-complicated and lengthy procedures.

3.4 Latitude and flexibility

The Committee is therefore pleased to note that alongside the few, simple rules, the programmes have been framed and the budget allocated in a way that allows sufficient flexibility and latitude (see Specific Programme, Title I, Article 6 'Budget'). It is therefore particularly important to clarify the relevant decision-making processes in the future, especially the role of the programme committees.

3.5 Governance

The EESC endorses the recitals and objectives relating to governance (see recital (21) in COM(2011) 809), in particular the Commission's emphasis on bottom-up processes. It also welcomes the intention to interact regularly with end-users, the public, the social partners, and civil society organisations when setting the priorities of the Specific Programme.

3.5.1 In the Committee's view, however, these statements made by the Commission, which are couched in very general terms, should be supplemented by **detailed and precise indications** on how the programme is to proceed, and on the relevant decisions, allocations (including budgetary allocations) and specific thematic information. Providing for the necessary governance means adequately demonstrating in what measure stakeholders and civil society representatives are involved fairly in these processes and work programmes, and the structures and decision-making levels (e.g. programme committees) of their involvement. The Commission after all wishes not just themes, but also detailed rules on budgets, funding instruments, extent of funding and if necessary outsourcing to the European Technology Platforms, 'Article 185 initiatives', etc., to be moved to the work programmes.

⁽³⁾ See in particular: OJ C 48, 15.2.2011, p. 129.

⁽⁴⁾ COM(2011) 48; OJ C 318, 29.10.2011, p. 121.

⁽⁵⁾ OJ C 132, 3.5.2011, p. 39.

⁽⁶⁾ See footnote 3.

3.5.2 Since the Commission also indicates in the proposal that it intends to use executive agencies or other external bodies in accordance with Article 55 of the Financial Regulation, further need for clarification arises with respect to the role, powers and oversight of such bodies.

3.5.3 The EESC recommends that these issues be clarified in consultation with all stakeholders, that they be set out in an accompanying document, and that the Committee's view then also be listened to. It also cautions against relapsing – by the back door as it were – into the former (over)regulation and complexity during this process of elaborating rules, especially with respect to the work programmes (see point 3.3). **The continuity with previous processes should only be broken if this is unavoidable in the interests of simplification.**

3.6 Overlaps

Specific sub-themes and issues in the sub-programmes of the Specific Programme may overlap with each other, and while this increases flexibility it may also shift priorities and make it difficult to keep track of and organise items. Thus, for instance, key findings and ideas from the Scientific Excellence or Industrial Leadership sub-programmes may feed into the Societal Challenges sub-programme.

3.7 Interim progress report

The Committee therefore also recommends that in addition to the interim evaluation after four years (analogous to the evaluation provided for in COM(2011) 52 final), the Commission should present an interim progress report just two years after the start of the programme; this report would cover the activities and experience to date of the Commission and of stakeholders, in particular in relation to the governance called for here.

3.8 Indicative budget allocation

Notwithstanding the limits mentioned, the EESC also welcomes the proposed indicative allocation and distribution of the budget over the individual sub-programmes and their sub-themes, in particular in relation to supporting small and medium-sized enterprises and to social problems and issues. Three exceptions to this are dealt with below (see points 4.2.1, 4.2.2 and 4.3). However, the relative importance attached to coordinating national and regional programmes (e.g. the new ERA Net programme) as opposed to direct research funding should be clarified.

3.9 Research profession

In recital (22) of the proposal on establishing the Framework Programme the Commission notes: 'Horizon 2020 should contribute to the attractiveness of the research profession in the Union'. In view of this, the EESC would like to see specific details of what measures have now been taken to follow up on the conclusions of the competitiveness Council

of 2 March 2010⁽⁷⁾ and really improve the unsatisfactory situation of young scientists (see section 6 below for a detailed review).

3.10 Regulation or decision?

It is not clear to the Committee, nor can it find any justification by the Commission based on previous experience, why the subsidiarity principle should require or allow a divergence from previous practice, namely the proposal that a regulation be used now instead of a decision for another two of the texts presented. The Committee recommends keeping to the former practice, unless the Commission can present a cogent legal argument.

3.11 Coordinated action by the Commission

Many aspects of EU research and innovation policy call for a coordinated, cooperative and efficient approach not just between the Commission and the Member States but also between several Commissioners, directorates-general and departments within the Commission. The spheres covered include education policy, the social security situation of researchers, the Structural Funds, cohesion policy, industrial and competition policy, energy policy, health policy and environmental policy. The EESC encourages the Commission to step up its efforts here and develop the necessary procedures and instruments.

3.12 Staff with expertise

The Committee repeats its strong recommendation⁽⁸⁾ that funding bodies, and also the Commission (or the planned executive agencies) in particular, should involve staff with proven scientific expertise who are familiar with and maintain their knowledge of the particular features and 'community' of the scientific area in question. Regular job rotation is very counterproductive in research and development.

3.12.1 Maintaining expertise and commitment

The Committee is also concerned that the looming trend towards outsourcing to external agencies tasks and activities related to promoting research and innovation that have hitherto been the province of the Commission might cause the Commission not only to dispense with its own expertise and judgment, but also to not be adequately engaged with the factual material. However, it is essential for the Commission to identify with that material so that it has the requisite expertise and commitment to successfully represent the key area of research, development and innovation at policy level. Otherwise the fragile system of checks and balances would be seriously upset.

⁽⁷⁾ Conclusions on the mobility and careers of researchers. 2999th Council meeting on competitiveness, held in Brussels on 1-2 March 2010.

⁽⁸⁾ OJ C 44, 16.2.2008, p. 1.

3.13 Further measures: Europe 2020 strategy

The EESC regards the Horizon 2020 programme as a necessary and critical plank of the Europe 2020 strategy. However, it must be supplemented by important additional measures, from both the Commission and, above all, the Member States. The Committee refers here to its initiatives on the Europe 2020 strategy. The main issue is to create or develop efficient and innovation-friendly economic⁽⁹⁾, social and education systems.

4. Specific comments of the Committee

4.1 Social sciences and humanities, education policy and innovation

The EESC welcomes the inclusion of research and innovation in the social sciences and humanities in each of the general objectives of Horizon 2020. It considers the themes mentioned to be relevant and important, and welcomes the priority given to them in the programme. The Committee also recommends that more emphasis be placed on efforts to develop a more effective education system at all levels of learning. This is a critical key task in promoting and harnessing talent in the EU in an optimal and skills-oriented way. As far as the objectives of Horizon 2020 specifically are concerned, the main issue is to train a sufficient number of qualified specialists at universities. But this means establishing the right preconditions in schools.

4.2 Societal challenges

The EESC endorses the list of *Societal challenges*, while recommending that even more emphasis be placed on the following.

4.2.1 Energy and climate issues

As regards priority-setting in the *Societal challenges* sub-programme, the EESC recommends, in view of the extremely ambitious goal of revolutionising our energy supply system by the year 2050 and switching completely to sustainable low-carbon technologies⁽¹⁰⁾, that this item also be given much greater consideration in the budget allocation⁽¹¹⁾. In particular, no adequate solution has been found to the problem of developing sufficient and affordable low-carbon energy-storage and buffer technologies to manage the fluctuating supply of wind and solar energy. The same goes for long-term fuel supplies for heavy goods traffic and air and waterborne transport. The impact on the economy and society also requires more detailed assessment.

4.2.2 Innovativeness of society and business

The EESC also recommends that the important theme *Innovativeness of society and business* be added to the list of challenges. **(Why were Google and Facebook not developed in Europe? Why do the Member States not all have an equally efficient management, economic and social structure?)** This item is subsumed under the heading 'Inclusive, innovative and secure societies' in the Commission proposal

(see point 2.3.2 - III – vi above), and the Committee feels that its considerable social and economic importance is therefore not sufficiently developed. After all, this is the main element of the *Innovation Union*⁽¹²⁾ flagship initiative. (The title of point 2.3.2 – III – vi would then be shortened to *Inclusive and secure societies*.)

4.3 SMEs and microbusinesses as stakeholders in innovation

The Committee welcomes the proposed improvements in supporting SMEs. It sees this as an important aspect of the overall Europe 2020 approach and refers here to its opinion on the Innovation Union⁽¹³⁾, in which it noted that 'the definition and rating of small and medium-sized enterprises should be reconsidered, since new networking opportunities enabled through ICT mean that micro-enterprises, and even one-man operations, are taking on increased significance. Perhaps thought should also be given to the dividing line between these and the liberal professions'. The Committee welcomes the Commission's indication that this recommendation has already been taken on board. With reference to section 7 of the present opinion, the EESC also notes that it is particularly important for SMEs to be properly and clearly informed about the various funding instruments of Horizon 2020 and access to them. Advisory services where SMEs could speak to a consultant would also be a good idea.

4.4 Universities

The EESC welcomes the option provided for in the participation and dissemination rules of 100 % funding for total direct eligible costs. It sees advantages in this for researchers or groups of researchers working at universities in the natural sciences, engineering and humanities. This would contribute to achieving an objective that the Committee has called for many times, namely that of creating and maintaining world-class EU universities. However, as pointed out in the Matias report (European Parliament report A7-0302/2011), these measures require additional support from cohesion policy resources to allow the necessary capacity-building in those Member States that have not yet been sufficiently involved in the Framework Programme. Further important measures are still needed to achieve this objective, but discussion of them does not fall within the scope of this opinion.

4.5 Research infrastructure

As noted on several occasions, the Committee considers that large-scale infrastructure offers critical support and tools for technological and scientific studies and excellence that would otherwise not be feasible at all. Hence its high attractiveness and impact for intra-EU cooperation and for mobilising the best engineers and scientists worldwide⁽¹⁴⁾. Moreover, the potential uses for large-scale infrastructure exceed the capacities and needs of a single Member State, which means that such infrastructure is often set up and run by individual Member States in partnership.

⁽⁹⁾ See for example: <http://www.worldbank.org/>.

⁽¹⁰⁾ COM(2011) 885 final.

⁽¹¹⁾ OJ C 21, 21.1.2011, p. 49.

⁽¹²⁾ OJ C 132, 3.5.2011, p. 39.

⁽¹³⁾ *Ibid.*

⁽¹⁴⁾ OJ C 182, 4.8.2009, p. 40.

4.5.1 Subsidiarity principle

Large-scale infrastructure is thus a perfect example of EU funding according to the subsidiarity principle. The EESC therefore deplores the failure to reflect the exceptional significance of such infrastructure, in form and substance, in the proposed indicative budget allocation. It recommends that the estimates for the other indicative budgets (except the budget for SMEs) should each be reduced by 2-2.5 % and that the amount thus saved should be added to the infrastructure heading. The fact that electronic infrastructure, which is important and will be even more so, would fall into this category makes this all the more necessary.

4.5.2 Operating costs

In addition, the Committee recommends that the Commission also contribute to the operating costs of infrastructure, and it asks the Commission to clarify that it actually intends to do this.

4.6 Key technologies

As the Committee has on several occasions pointed out⁽¹⁵⁾, development of, proficiency in, and marketing of key technologies is a critical multidisciplinary task, both for strengthening the competitive position of the EU and for managing such social challenges as sustainable energy supply or health. The EESC therefore welcomes the appropriate weight given to this area, particularly as key technologies are also an effective catalyst for cooperation between research bodies and industry, and hence public-private partnerships. The FET-Open part of the programme is particularly important in this context.

4.7 Accounting procedure I

The Committee welcomes the proposal to recognise the payment systems used in the Member States by research bodies and firms (e.g. hourly rates in industry). This must also include expenses resulting from application of value added tax.

4.8 Accounting procedure II

The Committee also welcomes the considerable simplification resulting from the 100 %-20 % or 70 %-20 % method in the participation rules (explained in points 2.2.3 and 2.2.4). Over and above the substantial administrative benefit, this could have financial advantages for various participant groups compared with the current quotas, though there may also be financial disadvantages. The Committee therefore recommends that some experience be gained with this method and the funding rates for indirect costs later raised slightly if necessary.

4.9 Importance of public procurement

When developing research infrastructure and large-scale equipment, industry is often called upon to develop and build very complex and demanding individual components. This

means entering new areas of technology, which may give rise to the typical problems described by the Committee in its opinion on knowledge transfer⁽¹⁶⁾. In that opinion it recommended that 'the experience arising so far from the EU's and Member States' existing rules on state aid, budgets, procurement and competition be thoroughly reviewed to see that they are conducive to the purpose of keeping the skills and specialist knowledge gained by industry under such contracts and using them to make Europe more competitive, and indeed for subsequent follow-on contracts ...'.

4.10 New approaches to industrial and competition policy

New approaches to industrial and competition policy should therefore be considered. It is questionable here whether the Commission's ideas on 'pre-commercial procurement' put forward would provide a suitable instrument. The Committee sees a risk here of choosing to forego industrial leadership and performance entirely for fear of possible knowledge monopolies. That would be a big mistake. At the same time there is a risk of failing to obtain the best product because of over-protectionist measures that undermine research and because the best product is only available outside the EU. The Committee therefore recommends that the different objectives, which are sometimes mutually incompatible, and requirements of research policy, innovation policy and industrial policy should be identified, and discussed and clarified with the various stakeholders. Special arrangements may even be needed in certain cases (see point 4.9).

4.11 Efficient project size

The trend towards ever larger projects, such as the joint technology initiatives, KICs and now also the FET flagship initiatives, should be monitored. These demand ever more resources and work effort for self-governance, and numerous consultation processes, and they should not develop into a tower of Babel.

4.11.1 Collaborative projects as a key instrument

Pooling resources can be helpful, but at a certain level this squeezes smaller players out of the Framework Programme, because they lack the necessary, and costly, legal and administrative support. This concerns in particular SMEs and university research groups. **Manageable collaborative projects with a workable number of participants should therefore remain the main instrument of Horizon 2020.**

4.12 European Institute of Innovation and Technology (EIT)

As the EIT is funded from the budget for Horizon 2020, the Committee sees this body's activities as equally part of the strategy pursued under Horizon 2020, and its recommendations also cover this sphere. A separate opinion is being drawn up on the EIT⁽¹⁷⁾.

⁽¹⁵⁾ OJ C 48, 15.2.2011, p. 112.

⁽¹⁶⁾ OJ C 218, 11.9.2009, p. 8; point 1.8 and section 5.

⁽¹⁷⁾ COM(2011) 822 final – EESC opinion EIT – *Strategic Agenda* (See page 122 of this Official Journal).

4.13 Evaluation criteria

The Commission's proposed evaluation and selection criteria⁽¹⁸⁾ – **excellence, impact, and quality and efficiency** – are listed in point 2.2.6 above. The EESC endorses these criteria, provided the pre-eminence of excellence is not undermined, since this is certainly the most important performance criterion. In relation to frontier research, the Committee cautions against placing too much emphasis on most frequently cited publications, as this creates a bias towards research areas that are already well established. It repeats its general reservation with regard to formal evaluation systems.

4.13.1 For promoting innovation in particular, considerable importance must obviously be attached to **market factors** as an evaluation criterion⁽¹⁹⁾. However, initial wrong estimates, as happened for example with the development of the personal computer, show that market evaluation is by no means easy in a hypothetical scenario, particularly where novel techniques are involved, and that it does not necessarily give accurate results.

4.14 Joint Research Centre

The Committee welcomes the proposals for direct funding of the Joint Research Centre. It also points out that the JRC's activities should be subject to the same evaluation processes as those of other bodies. If the Joint Research Centre also applies for indirect funding under the Specific Programme, an absolutely level playing-field must be ensured vis-à-vis other applicants or stakeholders that are outside the Commission.

5. Euratom

5.1 The EESC sees in the proposal for the Euratom programme essentially, and appropriately, an unbroken continuation of the 2012–2013 Euratom programme, which the Commission presented only recently and which was analysed in detail by the Committee⁽²⁰⁾. The Committee reiterates and reaffirms its main point made then, namely that: 'the level of knowledge about nuclear technologies, their use and their consequences must be maintained and developed. Given that it plays a coordinating role in pooling resources and integrating joint efforts, the Euratom R&D framework programme offers significant European added value in this connection.' The EESC also reaffirms its detailed comments and recommendations made at the time, in view of which it focuses here only on certain specific points. The key task is to develop reactor systems with maximum safety and minimum long-lived high-level radioactive waste.

5.2 The Committee is pleased to see that its recommendations in that analysis have been broadly taken into account in the proposal for the Commission programme. These include:

- improved reactor safety, permanent disposal of high-level nuclear waste, transmutation to reduce long-term radio-toxicity, monitoring of fissile material and radiation protection;
- consequences of the stress test;
- development work on energy production from nuclear fusion, with the ITER as a major international project;
- training specialists and ensuring that enough basic knowledge is taught in schools.

5.2.1 The EESC points again to the need, irrespective of the Member States' individual decisions for or against the use of nuclear energy, to 'prioritise the development of and dissemination of our knowledge within the EU on safety issues and the associated technologies. [...] The abandonment of comprehensive knowledge would be dangerous and tantamount to burying one's head in the sand'⁽²¹⁾. The Committee is concerned that in those Member States which are now abandoning nuclear energy, or plan to do so in the future, the acquisition and development of such skills could be lost. This must be avoided at all costs.

5.3 European Nuclear Energy Forum (ENEF)

In relation to issues of nuclear fission technology, the Committee supports in particular the procedures and recommendations of the European Nuclear Energy Forum (ENEF), in whose work it is itself involved through its representatives in cooperation with the Commission.

5.4 Stress tests

The decision to carry out stress tests on all nuclear power plants in the EU was a logical consequence of the nuclear accident at the Fukushima reactor after the Japanese tsunami. As soon as all the results of these stress tests are available, it is necessary not just to draw conclusions for existing plants but also to set appropriate priorities within the Euratom programmes for research, development and demonstration activities.

5.4.1 Particular attention should be paid here to watching for possible beyond-design-basis accidents.

5.5 Nuclear fusion

A public debate has arisen in some quarters about the nuclear fusion programme, partly because it cannot be expected to make any significant contribution to low-carbon energy production by 2050 (the timescale of the Energy Roadmap) and partly because the construction costs of the international ITER project (which on the Commission's recommendation are to be defrayed outside the Framework Programme) have increased considerably compared with original estimates.

⁽¹⁸⁾ See in particular point 4.2 in OJ C 132, 3.5.2011, p. 39.

⁽¹⁹⁾ See in particular point 3.7.2 in OJ C 132, 3.5.2011, p. 39.

⁽²⁰⁾ COM(2011) 71 final, 72 final, 73 final and 74 final; OJ C 318, 29.10.2011, p. 127.

⁽²¹⁾ OJ C 318, 29.10.2011, p. 127; point 3.4.

5.5.1 Energy Roadmap 2050

The EESC will be drawing up an opinion specifically on the Energy Roadmap 2050⁽²²⁾. It is enough to note here that in view of global demographic trends and growing worldwide energy hunger, there is no way that the EU measures implemented by 2050 will be able to resolve the global energy problem for the long term. This makes fusion energy the only other option that is not yet in use, available or known, in the armoury of potential technologies to address this enormous task.

5.5.2 ITER I

Although only the (European) scientific and technical preparatory work for ITER is part of the Euratom programme (the construction costs of ITER are to be borne from other sources⁽²³⁾), it is right to regard ITER as the flagship of worldwide fusion research and of the European fusion programme. Irrespective of the scope and need for design improvements and alternatives, ITER is a decisive and internationally unique step towards the future application of fusion energy. The aim of the project is to produce thermal fusion power of 500 megawatts (with a net power gain) for the first time anywhere in the world⁽²⁴⁾.

5.5.3 ITER II

ITER is also a **testbed for international cooperation on an unprecedented scale** between key industrialised countries. **The partners are China, the European Union, India, Japan, South Korea, Russia and the United States.** Their interest in helping to develop crucial new technologies evidences the high expectations of fusion as another valuable carbon-free energy source. However, the novelty and complexity of this cooperation is also one reason for revising the original assumption that the total costs for each individual partner would fall as the number of partners increased. The great value of this partnership does not lie chiefly in the cost savings, but rather in the gains represented by expertise, ideas and highly skilled specialists. Like the international space station, it is also delivering a contribution to international understanding and peace that should not be underestimated (ITER was originally proposed and launched by Presidents Gorbachev, Mitterrand and Reagan). The Committee believes that the Commission's approach of raising the EU contribution to ITER construction costs outside the EU budget must on no account be allowed to undermine the project.

5.5.4 Member State involvement – contracts of association

In its recent opinion on the Euratom programme⁽²⁵⁾, the Committee highlighted the crucial importance of these 'associations' as the foundation and think tanks of the fusion programme and in leveraging Member States' support. The

EESC draws attention to its comments in that opinion and once more warns against jeopardising this important support or allowing it to wither away. Such associations are also a tried-and-tested tool for achieving the Commission's ambition of joint programming in research⁽²⁶⁾. Even in the event of an organisational restructuring of the European fusion programme, effective joint programming instruments must still be available to ensure that the programmes of the Member State laboratories involved can be coordinated at EU level and logically integrated, so as to maintain the EU's current leading role in this area of research and the necessary support provided by the Member States.

6. European Research Area: a single market for researchers

6.1 The Commission assumes that the European Research Area will be completed by 2014. This is to be hoped for, but the Committee doubts that it can be achieved because it requires that the elements of a single market be in place, e.g. an EU patent or a single market for researchers⁽²⁷⁾.

6.2 With reference to the Council decision of 2 March 2010⁽²⁸⁾, the Committee identifies an urgent need for action to improve the unsatisfactory social security situation of young researchers working at public research institutes and universities, a situation which is starkly at odds with the objective of making the research profession highly attractive, or at least ensuring that it is not less appealing than other equivalent professions.

6.3 The Committee acknowledges that scientific organisations in some Member States have already made certain improvements in this area and have been continuing their efforts. It also recognises that the Commission is trying to improve matters, e.g. through the Marie Curie and Erasmus programmes.

6.4 The problem lies essentially in the public sector wage and social security systems of the Member States, under which scientists working at public research institutes and universities are generally remunerated. These systems tend to assume an uninterrupted career path with the same employer, for which they reward the worker. But precisely because of this, such systems are not appropriate to the particular needs of research and development.

6.5 The reason is that they do not take account of or recompense the very demanding and lengthy selection process, which includes post-graduate study (doctorate), which young scientists must already have successfully completed, or of the fact that at least initially their career path is not unbroken but consists of temporary contracts, often without any prospect of extension or later permanent employment. The quite justified long-term concern about future career and associated stress not only have a negative impact on science and research, but also on personal partner relationships and starting a family.

⁽²²⁾ See footnote 10.

⁽²³⁾ COM(2011) 931 final. The Committee will draw up a separate opinion on this.

⁽²⁴⁾ See: <http://www.iter.org/>.

⁽²⁵⁾ OJ C 318, 29.10.2011, p. 127; point 4.5.1.

⁽²⁶⁾ COM(2008) 468 final; OJ C 228, 22.9.2009, p. 56.

⁽²⁷⁾ See OJ C 44, 16.2.2008, p. 1; point 1.3.

⁽²⁸⁾ See footnote 1.

6.6 This distinctly higher social risk is not offset by a correspondingly higher income or by better social protection, however. Nor is any account taken of the fact that a minimum of mobility is required for a successful career in science; on the contrary, mobility tends to be penalised under these systems.

6.7 The wage systems of the Member States are quite incompatible with each other, and the 'social credits' accumulated through work abroad are hardly transferable, which makes mobility between Member States more disadvantageous.

6.8 As a matter of urgency, therefore, the wage and social security systems of the Member States should be adapted to meet the particular conditions urged for scientists. Since this objective could doubtless only be reached after a very long-drawn-out process, the EESC points to the Council decision referred to above and recommends that the Commission should press ahead with its efforts to set up a special fund jointly with the Member States (to be financed through the Social Fund), which would offset the above-mentioned disadvantages for young scientists with commensurate compensatory benefits. These benefits should reflect the social risk inherent in a series of temporary contracts as well as the reduced or lost 'social credits' resulting from mobility (especially cross-border mobility).

7. User-friendliness and information: a short guide and advisory services.

7.1 The EESC repeats its urgent call on the Commission – given the multitude of funding instruments, processes, networks and technical terms (e.g. projects, KICs, technology platforms, innovation partnerships, flagship initiatives, ERA-Nets, joint programming, Erasmus, Marie Curie, COST, Eureka) – to draw up a comprehensible overview and short guide, available on the internet, which clearly presents the essential features of the specific instruments with their requirements and objectives. This would be a major contribution to simplification and transparency and perfectly complement the CORDIS portal, which is otherwise working very well.

7.2 The Committee recommends that this guide be limited to the essential facts and leave out promotional or explanatory remarks. Even in the case of the documents under discussion, it would have been a relief for the Committee if the essential substance had been presented with less analysis.

7.3 The Committee proposes that a special version of this guide be published that is designed for SMEs and their particular needs and level of knowledge. In addition, competent advisory services should be set up, e.g. through special training seminars to enable regional bodies such as chambers of industry and commerce to function as information points.

Brussels, 28 March 2012.

The President
of the European Economic and Social Committee
Staffan NILSSON
