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(Resolutions, recommendations and opinions)

# **OPINIONS**

# EUROPEAN ECONOMIC AND SOCIAL COMMITTEE

# 476TH PLENARY SESSION HELD ON 7 AND 8 DECEMBER 2011

Opinion of the European Economic and Social Committee on 'Industrial change to build sustainable Energy Intensive Industries (EIIs) facing the resource efficiency objective of the Europe 2020 strategy' (own-initiative opinion)

(2012/C 43/01)

Rapporteur: Mr IOZIA

Co-rapporteur: Mr JARRÉ

On 20 January 2011, the European Economic and Social Committee, acting under Article 29(2) of its Rules of Procedure, decided to draw up an own-initiative opinion on

Industrial change to build sustainable Energy Intensive Industries (EIIs) facing the resource efficiency objective of the Europe 2020 strategy.

The Consultative Commission on Industrial Change (CCMI), which was responsible for preparing the Committee's work on the subject, adopted its opinion on 17 November 2011. The rapporteur was Mr IOZIA and the co-rapporteur was Mr JARRÉ.

At its 476th plenary session, held on 7 and 8 December 2011 (meeting of 8 December), the European Economic and Social Committee adopted the following opinion by 143 votes with 7 abstentions.

#### 1. EESC conclusions and recommendations

1.1 The EESC considers that Europe will only be able to respond to intensified competition with emerging economies by implementing highly innovative systems and technological, environmental and production standards rising in line with the technological development. The workforce should be protected from the effects of changes, through proper and timely training. EU policies should favour such a development.

1.2 The products of the Energy Intensive Industries (EIIs) are the basis for the value chain for all manufacturing sectors, where a large proportion of EU jobs are allocated. Stability, timeliness, quality and security in supplying those sectors is the guarantee of their competitiveness in the global market as well the guarantee of as highly qualified jobs in the EU.

1.3 An adequate European framework needs to be created that addresses the common needs of EIIs, with the key goal of strengthening and maintaining competitiveness in Europe against a backdrop of economic, social and environmental sustainability. The sectors in question are of equal importance and are dependent on each other.

1.4 Moreover, given today's difficult economic climate, the EESC recommends investing even more strongly in research, development, deployment and training, and in the scientific activities that are applied to industry. These investments should

be given sufficient backing in the next framework programme and should make it possible to exchange experience and results at European level, at the very least. European and national programmes should focus more on energy efficiency research and innovations (<sup>1</sup>).

1.5 The EESC believes that there must be an integrated industrial policy that keeps external variables constantly in check and enables European businesses to compete with others globally on a level playing field and subject to reciprocal conditions. In order to guarantee sufficient competitiveness, common industrial and fiscal policies and strategic choices must be defined which cover European industry as a whole.

1.6 Europe cannot keep managing its economy by imposing ever stricter constraints if it does not also take the necessary steps to make stable and strategic common choices in governance, in order to defend its economic and social model and ensure optimum results, including environmental protection.

1.7 The EESC firmly believes that the EU must make every effort to establish flexible systems in order to achieve such objectives that are recognised to be necessary. These systems should take the specific nature of basic industry into account.

1.8 The EESC wonders whether importers should also be subject to ETS equivalent measures. The primary objective would be to secure an efficient global system by means of a strict and enforceable agreement. In the absence of such an agreement, and with a view to achieving the goals which the EU has chosen to set itself, there should be a level playing field (i.e., same treatment and conditions) for goods and services placed on the market within its borders as well as for exported goods and services.

1.9 The EESC strongly recommends that consideration be given to the possibility of retaining the system of allocating ETS certificates free of charge to firms which have already achieved levels of excellence and are close to the physic and thermodynamic limits of their specific technologies. The practice of auctioning emission permits, to be launched in 2013, is certainly a good one but only if it will be adopted by other parts of the world. The EU intends to open up trading with other, non-EU, operators, with the aim of building a global ETS market.

1.10 In the case of EIIs, the ETS could cause incalculable harm to the industry concerned, if not managed very carefully. Carbon leakage is not something that should be considered in the future only. It has been happening in the recent 10 years at least, since investments have been redirected from Europe to other countries like the US, China, India Brazil etc. An in-depth investigation of this phenomenon would be extremely useful. 1.11 Energy conserved in materials should be reused, boosting recycling operations where possible. Glass, iron and steel and aluminium can contribute significantly. Europe exports its noble materials. Instead, there should be incentives to reuse them within the EU and save, the energy contained in the various materials  $(^{2})$ .

1.12 EIIs should be encouraged to make long-term investments – possibly joining forces to do so – in the energy sector (especially in renewable energies) and given the opportunity to purchase energy via long-term contracts at fixed prices.

1.13 The EESC thinks that a stable, effective and enduring regulatory framework is extremely important. Economic investment cycles in EII run from seven to twenty years (for blast furnaces, for instance) and there is a reason for the fact that there has been lower than expectable investment in the integrated steel cycle for over thirty years.

1.14 The policies adopted to date have generally been geared towards penalising misconduct, rather than rewarding responsible behaviour and investment. This approach must be amended and fiscal incentives used to support the actions of firms which demonstrate that they have achieved impressive results in energy efficiency.

1.15 The tremendous results already obtained by EIIs in the period immediately before the ETS entered into force need stressing. They anticipated new needs and changing times and there is no reason why they should be severely penalised as a result and risk losing a million highly stable and qualified jobs (both direct and indirect).

1.16 Support must certainly be given to disseminating best practice between countries and between sectors, as well as to new pilot and demonstration projects.

1.17 Public support measures for research and innovation, with specific, dedicated programmes, have proven to be extremely important. The EESC calls on the European Commission, the Council and the Parliament to reinforce these programmes, focused on energy efficiency and diversification and make them a permanent part of development initiatives.

1.18 Small and medium-sized enterprises (SMEs) can significantly contribute to achieving the objectives through specific programmes tailored to them. Energy intensive companies can be found in every market sector. However, the costs involved in achieving high levels of energy efficiency are inversely proportionate to the company's size. It is SMEs, in fact, that can achieve the best overall results and they should be the focus of substantial effort and resources.

<sup>(1)</sup> OJ C 218, 23.7.2011, p. 38.

<sup>(&</sup>lt;sup>2</sup>) OJ C 107, 6.4.2011, p. 1;OJ C 218, 23.7.2011, p. 25.

# 2. Introduction

2.1 The Energy Intensive Industries are the foundation for all European manufacturing value chains since they supply the basic materials for the production of manufactured goods. These industries hold a crucial position in the development of a low-carbon economy.

2.2 The introduction of regulations aiming to obtain a 20 % reduction in consumption is a challenge that has to be met by the development of a new generation of products from EIIs. A great number of measures and incentives are needed to open the market for the new energy saving products.

2.3 The industrial manufacturing sector, which contributes 17,6 % to European GDP, accounts for 27 % of the final energy demand in the EU. The major primary materials industries (e.g., chemicals and petrochemicals (18 %), iron and steel (26 %) and cement (25 %),) are energy intensive and account for 70 % of industrial energy use.

2.4 The idea of reducing costs to maintain and possibly improve competitiveness has prompted many industries, especially the energy intensive ones, to make energy efficiency improvements, which has meant that their economic potential in 2020 is lower than in other sectors.

Table	1	

Trojected developments and energy savings potential in 2020	Projected	developments	and	energy	savings	potential	in	2020	(3
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	2020 (PRIMES 2007) [Mtoe]	2020 (PRIMES 2009 EE) [Mtoe]	Expected progress in 2020 without further action [%]	2020 Economic Potential [%]	2020 Technical potential [%]
	1	2	3 [=(2-1)/1 (*)100]	4	5
Gross inland consumption minus final non-energy use	1 842	1 678	- 9 %	– 20 % (EU target)	n.a.
Final Energy Consumption of which:	1 348	1 214	- 10 %	- 19 %	- 25 %
Industry	368	327	- 11 %	- 13 %	- 16 %
Transport	439	395	- 10 %	- 21 %	- 28 %
Residential	336	310	- 8 %	- 24 %	- 32 %
Tertiary	205	181	- 12 %	- 17 %	- 25 %
Energy transformation, trans- mission and distribution	494	464	- 6 %	- 35 %	n.a.

Sources: PRIMES for columns 1, 2 and 3 and Fraunhofer Institute for columns 4 and 5.

(\*) The data on the economic potential in the energy transformation sector are based on DG ENER calculations.

2.5 Nevertheless, not all the opportunities have yet been fully exploited, especially where small and even some medium-sized industries are concerned (<sup>4</sup>).

#### 3. Technological state of the art for the various EIIs

The energy intensive industries explore and produce a number of products and technologies that are needed to tackle climate change and other global challenges. A key prerequisite for improving energy and resource efficiency is an active industrial policy and innovation. R&D must be more focused on energy and resource efficient technological and organisational solutions. In addition, companies together with employees and their representatives, have to make energy and resource efficiency improvements targeted at driving innovation in products and processes.

An overview of the main EIIs follows.

<sup>(3)</sup> SEC (2011) 779 final.

<sup>(&</sup>lt;sup>4</sup>) Energy Efficiency Plan 2011, COM(2011) 109 final; Impact assessment study, Ib. n. 3., OJ C 218, 23.7.2011, p. 38; OJ C 318, 29.10.2011 p. 76.

# 3.1 Chemical and petrochemical industry

3.1.1 The chemical industry employs 1 205 000 people across 29 000 companies, with a production value of EUR 449bn (2009 Eurostat) and almost double that figure in turnover, equating to 1,15 % of EU GDP. Only 8 % of oil is used in the chemical industry as fuel, while the majority is processed. In terms of energy consumption, the processing sector accounts for 18 % in the industrial sectors.

3.1.2 The chemical industry converts raw materials into products for other industries and consumers. Basic raw materials can be divided into organic and inorganic. Inorganic raw materials include air, water and minerals. Fossil fuels and biomass belong to the class of organic raw materials.

3.1.3 About 85 % of chemicals are produced from about twenty simple chemicals called base chemicals. The base chemicals are mainly produced from ten raw materials and these base chemicals are converted into about 300 intermediates. Base chemicals and intermediates are classified as bulk chemicals. About 30 000 consumer products are produced from intermediates. Where these chemicals go: 12 % of the cost of a car (seat cushions, hoses and belts; airbags), 10 % of the cost of a house (insulation pipes and electrical wiring), 10 % of what the average household consumer uses every day (food products, clothing, footwear, health and personal care products, etc).

3.1.4 Coal, oil and natural gas (NG) are the primary raw materials for production of most bulk chemicals. Each stage adds value: relative value of crude oil: 1; fuel: 2; typical petro-chemical: 10; typical consumer product: 50.

3.1.5 Fossil fuels are also the most important sources of energy: oil (approx. 40 %), coal (approx. 26 %), and then NG (approx. 21 %).

3.1.6 The chemical industry uses a huge amount of energy. About 8 % of total crude oil demand is used as raw material: the balance is used for fuel production mainly for transport.

# 3.2 Non ferrous metals industries

3.2.1 The non ferrous metals industries are very diverse and include the production of various metals, such as aluminium, lead, zinc, copper, magnesium, nickel, silicon and many others. In total, the sector directly employs around 400 000 people (*Eurometaux*, July 2011). Its biggest, most important subsector is aluminium, which, in 2010, had a total workforce of 240 000 and a turnover of EUR 25bn. Bauxite production accounted for 2.3 Mt, alumina production accounted for 5.9 Mt while the total production of aluminium (primary and recycled) totalled 6 Mt (270 plants). The benchmark defined by the European Commission is 1 514 kg of CO<sub>2</sub> eq/tonne for the production of primary aluminium.

3.2.2 Various analyses show that raw materials and energy are the most important competitiveness factors for the EU's non

ferrous metals industry. Depending on the sub-sector, energy and raw material costs represent roughly between 50 % and 90 % of the total costs of refined metals production. Raw material costs range from 30 % to 85 % of total costs, while energy costs vary from 2 % to 37 % of total costs. With regard to raw materials, scrap recycling is as important as the use of ores and concentrates for EU metal production.

3.2.3 On imports dependency, the EU metals industry was claiming in 2005 that bauxite, magnesium, silicon and copper concentrates were the most sensitive raw materials (e.g. China accounts for 50 % of the world's coke exports and Chile for 40 % of the world's copper concentrates exports).

3.2.4 According to the industry, supply risks exist for aluminium scrap, copper scrap and blister, zinc and lead concentrates and, in a longer-term perspective, for aluminium and copper scrap and copper concentrates and blister.

3.2.5 The non ferrous metals industry is highly electrointensive; this is particularly true for aluminium, lead and zinc producers, which are very large electricity consumers.

3.2.6 A large part of EU non ferrous metals consumption is already supplied by imports and, if no remedies are found, that percentage will increase as European non ferrous metals producers close. This will result in carbon leakage.

#### 3.3 Iron and steel industries

3.3.1 Europe's iron and steel industries directly employ 360 000 people and generated a turnover in 2010 of EUR 190bn. Their total energy consumption amounts to 3 700 GJ, which is around one quarter of the energy consumed by manufacturing industry: total  $CO_2$  emissions come to around 350 Mt, equivalent to 4 % of all EU emissions.

3.3.2 There are two main routes to producing steel. The first route is called the 'integrated route', which is based on the production of iron from iron ore – but on average also in this route 14 % is produced from scrap. The second route, called the 'recycling route', uses scrap iron as the main iron-bearing raw material in electric arc furnaces.

3.3.3 In both cases, energy consumption is related to fuel (mainly coal and coke) and electricity. The recycling route has a much lower energy consumption (about 80 %). The 'integrated route' relies on the use of coke ovens, sinter plants, blast furnaces and basic oxygen furnace converters.

3.3.4 Current energy consumption for the integrated route is estimated to lie between 17 and 23 GJ per tonne of hot-rolled product [1][SET\_Plan\_Workshop\_2010]. The lower value is considered by the European sector as a good reference value for an integrated plant. A value of 21 GJ/t is considered as an average value throughout the EU27.

3.3.5 Part of the steep decrease (by about 50 %) in energy consumption in European industry in the last forty years has been due to the increase of the recycling route at the expense of the integrated route (the share has increased from 20 % in the 1970s to around 40 % today).

3.3.6 However, a prospective shift to recycling is confined by scrap availability and its quality. In Europe about 80 % of  $CO_2$  emissions related to the integrated route originate from waste gases. These waste gases are used greatly within the same industry to produce about 80 % of its electricity needs [EUROFER\_2009a].

3.3.7 The production of crude steel in the EU in 2008 was 198 Mt, representing 14,9% of the total world production (1 327 Mt of crude steel) [WorldSteel\_2009]. Ten years earlier, with a slightly lower production (191 Mt of crude steel), the share of the same European countries was 24,6%.

# 3.4 Ceramics Industry

3.4.1 The ceramics industry directly employs 300 000 people and covers a wide range of products ranging from brick and roof tiles, clay pipes, wall and floor tiles, through sanitary ware and table and decorative ware to abrasives, refractory products and technical ceramics (<sup>5</sup>).

3.4.2 These sectors cover applications for construction, high temperature processes, automotive, energy, environment, consumer goods, mining, shipbuilding, defence, aerospace, medical devices and much more. Ceramics sectors are characterised by their dependence on both domestic and imported raw materials.

3.4.3 The European ceramics industry is largely composed of SMEs, which represent around 10 % of the installations under the European Emissions Trading Scheme (ETS), but less than 1 % of the emissions.

# 3.5 Cement

3.5.1 In 2010, the European cement industry directly employed 48 000 people, producing 250 Mt and turning over EUR 95bn. Benchmark energy consumption is equivalent to 110kWh/tonne: total  $CO_2$  emissions were equivalent to 3 % of the EU total.

3.5.2 Cement is an essential material for building as well as for civil and hydraulic engineering. The output of the cement industry is directly related to the general state of the construction sector and closely reflects the economic situation as a whole.

3.5.3 In the European Union, cement is primarily produced using modern 'dry-method' technology. This requires approximately 50 % less energy than burning clinker in kilns using the wet method.

3.5.4 In 2009, the production of cement in the 27 EU countries amounted to approximately 250 million tonnes, representing 8,6 % of world cement production totalling some 3 billion tonnes (6). Asia accounts for the largest share of world production (75 %), with China alone responsible for around half of the cement produced (54,2 %). This data shows that a very large proportion of the world's cement is produced in countries that do not apply the Kyoto Protocol.

3.5.5 The key features of the European cement industry are: its highly capital-intensive nature – EUR 150 million per million tonnes of production capacity; its high energy consumption – 60-130 kg per tonne of oil or oil equivalent plus an additional 90-130 KWh of electricity per tonne.

3.5.6 One further important feature of the European cement industry is the existence of regional cement markets which cover a radius of no more than 200 miles.

3.5.7 The cement industry is one of the largest emitters of CO<sub>2</sub>. Its carbon dioxide emissions make up around 5 % of global emissions caused by human activity (<sup>7</sup>). The main sources of CO<sub>2</sub> emissions from the cement industry are the decarbonisation of raw materials and fuel combustion.

3.5.8 It is estimated that emissions from the decarbonisation process make up approximately 50 % of total cement plant emissions, with fuel combustion accounting for a further 40 %.  $CO_2$  emitted as a result of these two processes is referred to as direct emission. Sources of indirect emissions (around 10 % of cement plant emissions) include transport and electricity generation for use in cement plants (<sup>8</sup>).

3.5.9 The development of the cement production sector in the EU is very highly dependent on EU policies and decisions on emissions of  $CO_2$  and other pollutants.

3.5.10 In the cement sector, the ETS is applied to the production of cement (clinker) in rotary kilns with a daily capacity of over 500 tonnes. Data from recent years (<sup>9</sup>) reveals lower than expected cement sector emissions. The high price of  $CO_2$  emission rights can prove to be more of a lure than the production of greater volumes of cement. The design of the ETS could limit output. Accordingly, the allocation of quotas should be preceded by an analysis to set sustainable goals, avert disruption on the market and motivate entrepreneurs to improve energy efficiency and reduce  $CO_2$  emissions at the same time.

(9) Report published in Euronews in May 2006.

<sup>(&</sup>lt;sup>5</sup>) OJ C 317, 23.12.2009, p. 7.

<sup>(6)</sup> Information report on 'The development of the European Cement Industry', CCMI/040, CESE 1041/2007. CEMBUREAU, Evolution & Energy Trends – Cembureau Web site May 2011.

<sup>(7) &#</sup>x27;Carbon dioxide emissions from the global cement industry', Ernst Worrell, Lynn Price, Nathan Martin, Chris Hendriks and Leticia Ozawa Meida, Annual Review of Energy and the Environment, November 2001, Vol. 26, pp. 303-329.

<sup>November 2001, Vol. 26, pp. 303-329.
(<sup>8</sup>) Vanderborght B., Brodmann U., 2001. The Cement CO<sub>2</sub> Protocol: CO<sub>2</sub> Emissions Monitoring and Reporting Protocol for the Cement Industry. Guide to the Protocol, version 1.6 – www.wbcsdcement. org.</sup> 

### 3.6 Glass Industry

3.6.1 The European glass industry directly employs 200 000 people, including 1 300 producers and processors, with a total production in 2010 of 34 Mt (30 % of the global total). Recycling one tonne of glass prevents 670 kg of  $CO_2$  from being emitted. Annual  $CO_2$  emissions are around 25 Mt.

3.6.2 Glass is primarily made of a glass former silica (high quality sand), alkalis to change the state of silica from solid to liquid (mainly soda and potash), stabilisers to reduce weathering of the glasses (calcium oxide, magnesium and aluminium oxide), some refining agents and small quantities of other additives to give different characteristics to the individual types of glass.

3.6.3 The most widely used classification of glass type is by chemical composition, which gives rise to four main groupings: soda lime glass, lead crystal and crystal glass, borosilicate glass and special glasses.

3.6.4 'Container glass' is the largest subsector in the EU glass industry, representing more than 60 % of total glass production. Its products are glass containers (bottles and jars). Container glass is produced in all EU Member States except Ireland and Luxembourg. The EU is the largest producing region for glass containers worldwide, with approximately 140 installations.

3.6.5 Flat glass is the EU glass industry's second largest sector, representing around 22 % of total glass production. It includes the production of float glass and rolled glass. Five manufacturers of float glass and five rolled glass manufacturers operate in the EU.. Total  $CO_2$  emissions from the flat glass sector were around 7 Mt in 2008, with around 6.5 Mt from float glass production and around 0.5Mt from rolled glass (source: CITL).

3.6.6 Continuous filament glass fibre (CFGF) is produced and supplied in a variety of forms: roving, mat, chopped strand, textile yarn, tissue, and milled fibre. The main end use (approximately 75 %) is the reinforcement of composite materials, mainly thermosetting resins, but also thermoplastics. The main markets for composite materials are the building industry, the automotive and transport sectors (50 %), and the electrical and electronics industry.

3.6.7 Some data about the CO<sub>2</sub> footprint:

- Average production: 870 000 tonnes/year of CFGF product

- Average CO<sub>2</sub> direct emissions: 640 000 tonnes

- Average CO<sub>2</sub>/tonne: 735 kg CO<sub>2</sub> / tonne CFGF product.

3.6.8 The special glass sector produces around 6 % of glass industry output, and in terms of tonnage is the fourth largest sector. The main products are: glass for televisions and monitors, lighting glass (tubes and bulbs), optical glass, laboratory and technical glassware, borosilicate and ceramic glasses (cookware and high temperature domestic applications), and glass for the electronics industry (LCD panels). 3.6.9 The domestic glass sector is one of the smaller sectors of the glass industry, with approximately 4 % of total output. This sector covers the production of glass tableware, cookware and decorative items, which include drinking glasses, cups, bowls, plates, cookware, vases and ornaments.

### 4. General overview of CO<sub>2</sub> emissions in 2010 in Europe

4.1 The EU ETS caps the emissions of about 12 600 installations, including power plants, factories and oil refiners. The scheme accounts for about 40 % of total EU greenhouse gas emissions. Analysts estimate, based on industrial output data, that emissions rose in 2010 by 3,2 %, compared with a drop of nearly 11,3 % in 2009 (Barclays Capital, Nomisma Energia, IdeaCarbon).

4.2 According to the European Environment Agency, total EU greenhouse gas emissions were about 4.6 billion metric tons in 2009. If these rose in line with industry carbon emissions last year, this would suggest that the EU was about 300 million metric tons above its target of 4.5 billion metric tons of greenhouse gases in 2020. EU climate officials forecast that the EU will undercut that target if it meets renewable energy and efficiency goals.

4.3 CO<sub>2</sub>

EU ETS emissions rose in 2010, as power demand and broad industrial output rose, meaning businesses burned more fossil fuels to generate electricity and heat (Sikorski).

In addition, higher gas prices forced power plants to burn more coal, which emits more carbon dioxide.

# 5. Comments of the European Economic and Social Committee

5.1 The value chain depends on the availability and quality of raw materials and Europe's basic industries supply top quality raw materials. The European processing industry benefits from this high quality and the continuous innovation generated by research. For instance, in the steel industry, 70 % of the quality is dependent on the type of casting. This quality should be maintained and, where possible, strengthened.

5.2 Without a strong, competitive and innovative industrial sector, Europe will be unable to achieve any sustainable objectives, such as those set by the Commission with regard to  $CO_2$  emissions.

5.3 The EU ETS is a 'cap and trade' system which has been adopted as an important instrument for reaching the EU's self-imposed goal of cutting greenhouse gas emissions by at least 20% by 2020 compared to 1990 levels and by 30% if an international agreement is reached. The ETS covers about 12 500 plants in the energy and industrial sectors, which combined account for almost half of the EU's  $CO_2$  emissions and 40% of overall greenhouse gas emissions.

5.4 The ETS currently operates in thirty countries (the 27 Member States plus Iceland, Liechtenstein and Norway). Compared to other sectors which are not part of the scheme, such as transport, ETS installations succeeded in significantly cutting greenhouse gases. However, EIIs are always subject to a permanent drive to improve energy efficiency because of ever growing costs for energy. Thorough analysis of emission cuts attributed to the EU ETS would be highly desirable.

# 6. The social and environmental aspect

6.1 The only way of safeguarding the European industrial system, European workers and interests, the environment, health and consumers is if none of these interests predominates, and if the optimal balance is struck between environmental, social and economic policies.

6.2 The EESC backs the environmental and social sustainability objectives and identifies several key areas where integrated action with a holistic approach should be taken.

6.3 First and foremost, we need effective programmes to support professional growth, through training to generate the skills needed to tackle and overcome technological challenges and achieve more and better results in the field of energy efficiency. EIIs are characterised by continuous production processes and a high level of responsibility, which means they are not attractive to young people. Special incentives to support vocational programmes (including scholarships) are needed to preserve European skills in the field.

6.4 Incentives are needed to foster the mobility of technicians and specialised workers in order to disseminate knowledge and best practice, both nationally and internationally.

6.5 Particular attention must be paid to transition periods, guaranteeing appropriate support for workers affected by restructuring resulting from the changes needed to align production with current needs. Public investment should support this process.

6.6 A real commitment to industrial change in EIIs must be adequate by appropriate assessments of the impact on society and workers, so as to avoid negative social consequences and to prepare ahead, for the introduction of new production models. 6.7 It is essential to build knowledge, understanding and public awareness of the benefits that can be achieved through highly energy efficient industry. Accordingly, as well as promoting product labelling, the energy efficient processes used to manufacture these products should also be labelled. In other words, there should be dual labelling: identifying not only the product, but also the factory which has helped to maintain a high level of overall efficiency.

6.8 EIIs need more support for research and innovation. The current EU funding system should implements dedicated instruments (e.g., like the SPIRE PPP for sustainable industry) to allow more space for industrial projects. The Technology Platforms have worked hard, to prepare a more favourable environment where industries can better address the EU Framework Programmes. The role of the Research and Technology Organisations (RTOs) should also be emphasised as well, since they play an extremely important part in the innovation chain, taking the idea forward to its industrial application.

#### 7. The international dimension

7.1 The USA, Japan, Russia, Brazil, India and – above all – China (number one on the emission-producing list, with 22 % of the total) must shoulder their responsibilities. These countries, together with Europe, produce over 70 % of  $CO_2$  emissions (2007). An agreement for the climate and the Earth's wellbeing is indispensable if we are to tackle and overcome the challenges of rising temperatures caused by anthropogenic factors.

7.2 The EESC has on several occasions expressed its support for such European policies, recommending that every effort be made to reach a fair international agreement which spreads the responsibilities and costs and takes account of a wide array of broader considerations and not just bare facts and figures.

7.3 Climate change policies can only succeed, if the forthcoming conference in Durban is able to establish the new, post-Kyoto targets for the world's largest emitting countries. Europe has pledged to meet still more ambitious targets, subject to a global agreement. The EESC supports this move, provided that the considerations expressed regarding sustainability for European firms and workers are built into the text and respected.

Brussels, 8 December 2011.

The President of the European Economic and Social Committee Staffan NILSSON