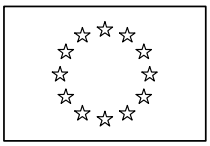

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 29.10.2009
COM(2009)594 final

COMMUNICATION FROM THE COMMISSION

'ELECTRA'

For a competitive and sustainable electrical engineering industry in the European Union

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1. INTRODUCTION

The May 2009 Competitiveness Council[1] identified the electrical engineering industry (EEI)[2] as one of the keys to a competitive and strong industrial base in the European Union (EU).

Electrical engineering is one of the biggest industries in the world. Its products range from simple consumer goods to highly sophisticated industrial turbines, power grids and power stations. In the EU, the industry numbers some 200 000 enterprises, mostly SMEs, employing around 2.8 million people. In 2008, total production was worth €411 bn and the EEI accounted for 10 % of EU exports, which represented a slight trade surplus[3].

The EU ranks second in world EEI production with 21 %, behind China (30 %) and ahead of the US and Japan (both 19 %). In terms of value added, it is second behind the US, ahead of Japan and China. European EEI products have a good reputation for quality and reliability. But competitors are catching up, while the EU has not yet managed to close the competitiveness gap with the US. A tailor-made vision for the EEI is needed to maintain and improve its competitiveness worldwide.

The European EEI's future as a producer of technologies for a wide range of applications depends on exploiting the high growth potential of particular markets among others in energy supply infrastructure, energy-efficient buildings, transport networks, industrial production and the development of smart technologies to suit existing and future societal needs.

This Communication sketches the short- and long-term growth potential of those markets and lists the actions and instruments needed to keep the EEI competitive while at the same time unlashing the industry's potential to contribute to the EU's 2020 climate change targets. It builds on the recommendations of the 2008 Electra report[4] and connects them with ongoing and planned EU policies. It also takes account of the European Economic Recovery Plan[5] geared to short-term business survival and job preservation in Europe.

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1 Doc 10082/09.

2 For the products covered, see: http://ec.europa.eu/enterprise/electr_equipment/electrareport_annex1.pdf.

3 http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136217,0_45571467&_dad=portal&_schema=PORTAL.

4 http://ec.europa.eu/enterprise/electr_equipment/electra.htm. The ELECTRA report was drafted with the assistance of the European Commission but does not necessarily reflect the opinion of the Commission.

5 COM (2008) 800.

2. TURNING CHALLENGES INTO OPPORTUNITES

2.1. Research, development and innovation

The EEI lacks access to RTD/innovation and its financing. A major reason for this is its strong SME nature. Financial markets and institutions tend to be cautious about investing in RTD projects, in particular where SMEs are concerned. There are a number of EU schemes supporting RTD/innovation, although they need to be better synchronised[6] and coordinated from both supply and demand perspectives.

Partners in the Enterprise Europe Network[7] and cluster organisations[8] need to improve and professionalise their support services and better integrate innovative SMEs. Clusters generally meet EEI needs because they provide or channel sector-specific and customised business support services.[9] This includes facilitating cooperation between SMEs and research institutes, promoting IPR[10] and technology transfer. Such services should reflect the Commission Recommendation on the management of intellectual property in knowledge transfer activities and the Code of Practice for universities and other public research organisations[11]. EEI businesses themselves need to become more proactive in supporting cluster initiatives and joining clusters.

Research and innovation may also be stimulated by fiscal instruments, for example through tax incentives or innovation vouchers, and by improving the conditions for risk capital investment, for instance for business angels or cross-border venture capital.

Concerns about the innovation capacity were key in selecting EEI in the framework of the product market and sector monitoring. An ongoing investigation aims to identify shortcomings by exemplary case studies and also to analyse these from a broader perspective. The investigation will assess how innovation can be improved to overcome existing shortcomings[12].

European Technology Platforms (ETPs) serve as a valuable indicator of technological trends, enhancing research activities with a high degree of industrial relevance and defining technology road maps. Single ETPs address the needs and challenges of their technology areas and are expected to be successful there at a precompetitive (early development) stage. A number of them are particularly relevant to the EEI.[13]

The Strategic Energy Technology (SET) Plan[14] aims to speed up research on and demonstration and deployment of low carbon technologies through cooperation between industry, research bodies and government. It provides a framework for carbon capture and storage and other key EU technology challenges with a view to meeting the EU climate change targets for 2020. Many of the proposals relate directly to EEI equipment and technologies.

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6 Mini-study on 'Synergies between EU instruments supporting innovation', June 2008.
7 http://www.enterprise-europe-network.ec.europa.eu/index_en.htm.
8 COM(2008)652.
9 Europe INNOVA™ initiative: http://www.europe-innova.org/index.jsp.
10 http://www.ipr-helpdesk.org/.
11 C(2008) 1329.
12 http://ec.europa.eu/economy_finance/publications/publication13083_en.pdf.
13 For the list, see: http://cordis.europa.eu/technology-platforms/individual_en.html.
14 COM(2007) 723.

The European Economic Recovery Plan includes 'smart investment' in research to support innovation in the manufacturing, construction and automotive sectors, which are particularly affected by the crisis and face significant challenges in the transition to the green economy. Three public-private partnerships worth a total of more than €3.2 bn are being set up to promote public interest with industrial commitment and leadership in determining strategic research activities in these three sectors. The EEI should benefit as it produces many of the technologies in question.

2.2. The need to supply and maintain skills

A serious problem which hampers the development of the EEI, particularly its RTD/innovation performance, is the shortage of engineers and other high-skilled personnel designing and producing advanced technologies. This has to be redressed in order to maintain the EU's technological leadership.

In the short term, Member States need to set up or intensify training schemes or scholarships to ensure that workers' skills are not lost in the economic crisis but upgraded in anticipation of economic recovery. The future competitiveness of the engineering sector and its ability to provide technologies relevant to the EU's climate change objectives will depend largely on how the crisis affects its existing workforce.

In the long term, the challenge for the industry, social partners, national authorities and education and training systems[15], preferably in cooperation, is to ensure a supply of highly qualified and well-educated workers with the right combination of theoretical and practical skills[16].

To this end, the EU is promoting various policies including the New Skills for New Jobs initiative[17], flexicurity[18], lifelong learning[19] and e-skills[20]. It is currently exploring the feasibility of setting up Europe- and sector-wide skills and employment councils to provide a platform for information sharing and exchange of good practice between the sector's stakeholders, national authorities and those responsible for education and vocational training. The challenge of ensuring a highly educated workforce is also recognised by the European social partners. The Commission will promote EU sectoral social dialogue as a tool of good governance also in the EEI sector to contribute to fostering skills development and improving skill matching. Other sectors with similar challenges such as the European gas and electricity sectors can share positive experiences in this respect.

Persisting barriers to mobility within the EU, in particular for researchers and highly skilled people, are being tackled inter alia through the recently launched European Partnership for Researchers as part of the European Research Area (ERA). The ERA enables Europe to speak with a consistent voice in international fora and with its main international partners. Public authorities at all levels jointly promote consistency between their R&D cooperation activities and develop joint initiatives that give Europe leadership in addressing global challenges and

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15 COM(2008) 865.
16 http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=529&furtherNews=yes.
17 COM(2008) 868.
18 http://ec.europa.eu/social/main.jsp?catId=102&langId=en
19 http://ec.europa.eu/education/index_en.htm.
20 COM(2007) 496; http://ec.europa.eu/enterprise/sectors/ict/e-skills/index_en.htm.

reaching sustainable development goals[21]. In this context, the lack of EU-wide recognition of engineers' qualifications is still an unsolved problem.

Another important measure is the 'Blue card' Directive[22] aiming to respond to fluctuating EU labour market needs by creating a fast-track and flexible procedure for admitting highly qualified specialists from outside the EU.

2.3. Tackling climate change and energy efficiency

The EEI is a key producer of efficient and environmentally friendly technologies. Contributing substantially to meeting the 2020 climate change targets provides an opportunity to boost its future competitiveness and its worldwide technological leadership[23]. The best way is to target energy efficiency across all market segments, making full use of technologies which are already available. Today the direct use of electricity in buildings, industry and transport accounts for up to 23% of the EU's total energy consumption[24]. The full energy-saving potential up to 2020 (compared with 2005) ranges between 25% and 30%[25]. Since around 80% of currently installed energy-using products will still be in place in 2020[26], it is not enough to replace products at their end of life with more efficient models: the products now in use must be upgraded to use more energy-efficient techniques.

The four main markets where EEI technologies can already impact on energy supply and demand are:

- power supply
- industrial applications
- transport
- buildings.

It is mainly up to the industry to develop and improve products and processes to trigger market take-up, but public authorities need to provide the appropriate framework: removing regulatory obstacles, raising awareness, mobilising financial assets and instruments, activating market forces and fostering technology development, research and innovation. Despite the current economic crisis the public and private sector investment needed to achieve substantial energy savings will have to be given high priority.

The EU Emission Trading System (ETS)[27] to reduce greenhouse gas emissions can boost the competitiveness of EEI as a producer of technologies limiting CO_2 emissions. Sustainable ETS programming can contribute to achieving CO_2 reduction, technology pull, creating more jobs and avoiding 'production leakage' in the EU and 'carbon leakage' outside the EU.

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21 http://ec.europa.eu/research/era/index_en.html.

22 Council Directive 2009/50/EC of 25 May 2009, OJ L 155, 18.06.2009.

23 http://ec.europa.eu/enterprise/electr_equipment/electrareport_annex3.pdf – market values for energy supply and automation would increase from €22 bn and €58 bn to €34 bn and €84 bn respectively from 2005 to 2020.

24 COM (2005) 265.

25 COM(2006) 545.

26 http://ec.europa.eu/enterprise/electr_equipment/electrareport.pdf.

27 Doc 17271/1/08 — Presidency Conclusions December 2008.

Moreover, from 2013 onwards, State revenues from the ETS — if directly used, in line with the State aid rules — might be a major source of co-financing for the highest-impact investments, which would also limit the risk of relocation of CO_2 emitters.

2.3.1. Power generation, transmission and distribution

Fossil-fuel plants are the major power generators in the EU-27, with 53.6% of gross electricity generation in 2006[28]. However, the efficiency of electricity generation by these plants averages less than 40%[29]. Almost 60% is lost in generation and a further 5% to 10% in transmission and distribution, so only 30% reaches customers as final available electrical energy[30]. Focusing on improving average efficiency in power generation by means of equipment upgrade can raise the average from 40% to 60% and, if combined heat and power technologies are used[31], even up to 85%[32]. If proven successful, such power plants could be in demand internationally, particularly in emerging economies like China, India and Brazil. As such equipment is usually installed for at least 20-30 years, timing is crucial to achieving the intended results.

Renewable sources of energy are increasingly seen as alternatives to fossil fuels. Their growth could drive EEI and have an effect on grid stability, but would require the development of dynamic energy storage on a large scale. The directive on the promotion of the use of energy from renewable sources[33] is expected to help speed up market absorption of technologies in question.

To adapt to using decentralised renewable sources and to improve efficiency more generally power grids in the EU need to be modernised[34]. Maintaining and improving reliable, efficient grids, vital for a modern society and for the EU's energy security, will require substantial investment[35] in smart metering and smart grids so as to manage space- and time-varying sources of energy.

Member States should accelerate the granting of approvals and permits for large infrastructure investment and coordinate such processes where cross-border connections are planned.

Energy transport losses can be reduced by converting to direct current for long-distance transport, to replace alternating current, which is more suitable for shorter links. Direct current is particularly suitable if production centres are far from consumption centres and for underwater operations, for instance to connect offshore wind parks to onshore networks. Where the industry is unable to agree on self-regulation, the Commission is considering proposing implementing measures for certain products with high energy consumption used for infrastructure under the EuP Directive[36]. In this context, the Commission is investigating the scope for introducing requirements for transformers and related equipment.

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28 http://ec.europa.eu/energy/publications/doc/statistics/part_2_energy_pocket_book_2009.pdf p.30.

29 'Energy Technology Perspectives 2008' of the International Energy Agency.

30 'Energy Technology Perspectives 2008' of the International Energy Agency.

31 Directives 2004/8/EC and 2007/74/EC.

32 'Energy Technology Perspectives 2008' of the International Energy Agency.

33 Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009, OJ L 140, 5.6.2009, p. 16–62.

34 The current grid system is primarily built for the distribution of electrical power in one direction.

35 http://ec.europa.eu/enterprise/electr_equipment/electrareport_annex2.pdf.

36 Directive 2005/32/EC on the eco-design of Energy-using Products (EuP); OJ L 121, 22.7.2005.

Overhead lines have triggered public concern about exposure to low frequency electromagnetic fields and environmental debate. Deployment of underground cables could be one solution in some cases[37] but it is not widespread. It should be an integral part of the European transport networks strategy, thus creating synergies and reducing costs and timescales[38]. Environmental concerns, linked to 'Natura' (nature conservation) legislation, will also have to be taken into account.

Generally, in electricity generation, transmission and distribution, market forces in the EU are still too weak and regulatory barriers persist. A prerequisite for more competition in the electricity market is a fully liberalised internal energy market.

2.3.2. Industrial applications

Industry consumes 30% of the final energy demand in the EU[39]. By changing certain production processes, savings of 30% and even up to 65% can be obtained[40]. To fully explore the overall saving potential, EU industry as a whole needs to regard investing in energy-efficient applications as a strategic management decision, by using for instance the ISO energy management model[41].

High energy savings can be achieved in two main production processes:

– Electric motors use up to 70% of the electricity consumed in industrial applications and half of them could be retrofitted with variable speed drives, yielding significant energy savings up to 50%. Moreover, only about 12% of them are electronically controlled. An implementing measure of July 2009[42] under the EuP Directive, aiming at improving the energy and environmental performance of electric motors, will be a key element.

– Most of the waste heat from industrial processes could be recovered and used for local power generation by steam turbines.

In addition, EU industry as a whole could improve its energy efficiency by making optimum use of low-consumption, high-efficiency loads such as lighting systems, motors, power capacitors, transformers and cables through appropriate automation and controls. Procedures and tools to monitor performance and maintain systems are also important in this regard.

2.3.3. Transport

The transport sector accounts for around 30% of final energy demand[43] in the EU. The potential energy savings are considerable: approximately 26% by 2020 compared with 2005[44]. Optimisation of transport logistics and traffic management can provide major energy efficiency gains. Innovative EEI technologies help to save energy and reduce CO_2 emissions.

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37 Underground electricity networks have limitations in replacing overhead lines, in particular because they have a large capacitive load that must be compensated about every 50 km.

38 COM(2007) 135.

39 COM(2005) 265.

40 http://ec.europa.eu/enterprise/electr_equipment/electra.htm.

41 http://www.iso.org/iso/pressrelease.htm?refid=Ref1122.

42 Commission Regulation (EC) No 640/2009.

43 Green Paper on energy efficiency.

44 COM(2006) 545.

Member States' recovery plans to mitigate the effects of the crisis for the car industry[45] have an impact not only on energy saving and CO_2 emissions, but also on related employment within the EEI.

The Green Cars Initiative in the European Recovery Plan offers an opportunity to act both on vehicle technologies and on distribution infrastructure and energy supply. It is a set of measures targeted at the crisis in the European automotive sector. Its main pillar concerns the electrification of road and urban transport, including different types of research activities supported by ETPs like ERTRAC (European Road Transport Research Advisory Council) and EPoSS (European Technology Platform on Smart Systems Integration). The Initiative involves EIB loans to car producers and suppliers to finance innovation and FP7 research funding in public-private partnerships (for total research efforts of €1 bn); some Member States have also introduced demand-side measures to boost the uptake of new vehicles and help scrap older vehicles.

Given the importance of reducing carbon emissions from road transport, and the price and security of oil supply, electric cars may well be an alternative to traditional internal combustion engines using fossil fuels. In the long-term mass production of electric cars will help car manufacturers to achieve Community CO_2 emissions targets for passenger cars[46] and will contribute to the overall aim of reducing CO_2 emissions — provided that electricity is generated from renewable or low-carbon sources. Besides low greenhouse-gas emissions, these vehicles have no pollutant tailpipe emissions such as particulates and nitrogen oxides and produce only low noise. Electric vehicles could potentially be used to store energy in a distributed energy system and may thus contribute to eliminating peak loads in the network. According to the CARS21 mid-term report[47], in the short to medium term, hybrid technologies (hybrids and plug-in hybrids) are likely to be used alongside internal combustion engines. For the medium to longer term, fully electric vehicles and hydrogen-powered vehicles are the most promising options. However, strong efforts to make electric cars a commercially viable option are still necessary. A significant barrier is the cost of electric vehicles related to the cost of high power-density batteries, the continuous R&D investment and small economies of scale at the early stages of market introduction. The short driving range and scarce charging infrastructure are practical problems for consumers. Finally, there is a need to ensure the proper functioning of the internal market of electric vehicles through the adoption of harmonised approval requirements.

2.3.4. Buildings

Commercial, public and residential buildings account for some 40% of total final energy demand, of which more than 27% is in the form of electricity[48]. The potential energy savings could be up to 30% by 2020 compared with 2005[49]. Most of this energy is used for heating (boilers, water heaters) and lighting. The energy efficiency of lighting is covered by two measures[50] under the EuP Directive, and new rules on minimum energy efficiency and labelling for boilers and water heaters should be adopted over the coming months. Public and

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45 http://ec.europa.eu/enterprise/automotive/pagesbackground/competitiveness/index.htm.

46 In line with the Regulation (EC) No 443/2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO2 emissions from light-duty vehicles. Please see: http://ec.europa.eu/environment/air/transport/co2/co2_home.htm.

47 CARS 21 Mid-Term Review High Level Conference — Conclusions and Report.

48 Green Paper on energy efficiency.

49 COM(2006) 545.

50 Commission Regulation (EC) No 244/2009 and Commission Regulation (EC) No 245/2009.

private lighting equipment and systems consume 20% of total final demand for electricity. Lighting industries have an energy-saving potential of between 30% and 65%[51]. Modern technologies like light-emitting diodes (LED) could save 30% of today's consumption by 2015 and up to 50% by 2025[52].

Energy management systems can greatly reduce the CO_2 footprint of buildings. The key challenge is to devise solutions that cover current buildings, as up to 80% of them will still be in use in 2020. Return on investment will be a key point for owners and their tenants. Often the investor is not the user of the building, which means that the initial expense may matter more to him than energy efficiency over the building's lifetime. Education of professionals in the sector, information for customers, incentives to renovate and insulate private buildings, a commitment on the part of governments to improve the energy efficiency of publicly owned buildings, and regulation or codes are all needed. In this respect, the Energy Performance of Buildings Directive (EPBD) and its revision is a key Community instrument for addressing the energy efficiency of buildings.

Results could be achieved with high-efficiency and flexible products and systems (domestic appliances, heating, ventilation, etc.), optimisation of transformer loads and variable-speed drives, presence detection to activate pumps and ventilators in shopping centres, and automation and control systems. These not only optimise technical building systems while saving energy, but also increase safety and security. Awareness-raising, training programmes, public procurement and tax measures promoting the best-performing products will contribute to these ends[53]. Existing buildings offer the most scope for improvement but also entail weak points, like safety. The Commission will launch a study to assess how to improve the safety of electrical installations in buildings while at the same time increasing their energy efficiency and enabling safe integration of renewable energy sources and new services like charging of electric vehicles.

In the current crisis, Member States' investments in upgrading the energy efficiency of public buildings such as offices, hospitals and schools deserve higher priority. So far, Member States' measures to support energy-efficiency investment, in particular focusing on reducing the energy consumption of buildings, amounts to a fiscal stimulus of around €20bn, or 0.16% of EU GDP, over 2009-10[54].

2.4. Coping with societal needs — growth markets

Current and future needs of EU citizens derive *inter alia* from demographic changes due to an ageing society, necessitating reliable and quick healthcare systems, building infrastructures that allow intelligent living/ambient assisted living and a greater emphasis on security. The EEI thus has wide scope to develop innovative technologies for future infrastructure and applications to cope with these societal needs within quite a short time.

The following applications help to meet these needs, have a strong technological and industrial base in Europe and depend more than other markets on the creation of favourable framework conditions through specific public policy measures.

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51 French Agency for the Environment and Energy Management.

52 COM(2008) 241.

53 COM(2008) 660.

54 http://ec.europa.eu/economy_finance/publications/publication15666_en.pdf p.57-63 and p.72.

Electromedical products

There is increasing demand for good healthcare and advanced treatments. E-health systems will be important because they allow better information sharing among professionals and with patients, thereby creating more 'patient-friendly' healthcare services. By developing new E-health systems, the EEI will not only help patients, but will also create strong competitive assets on a global scale. The Commission is determined to encourage new E-health communication systems, e.g. through standardised solutions.

Buildings for intelligent living and ambient assisted living

This market will be driven both by increasing energy costs and by the increase in single person households and working from home. These factors will trigger developments in technologies such as interoperable remote access and control and 'greener buildings', including both passive and active energy-efficient technologies.

Security

The EU is facing increasing security threats in the form of terrorist attacks and illegal migration. The EU EEI can contribute to this end being a producer of the technical solutions required[55] in order to enhance security, for citizens, infrastructure and utilities, at the EU's borders, and within the framework of crisis management[56].

2.5. Internal Market and standardisation

The internal market system, with its uniform regulatory approach, greatly facilitates the free movement of electrical appliances. The recent measures to create a New Legislative Framework (NLF) for EU harmonisation legislation for products should make it much easier for the EEI and others to market their products. As part of this process, by the end of 2010 the Commission will draft a proposal on the obligations of economic operators and the role of notified bodies, intended to make the relevant legislation more coherent. Another NLF component, the Regulation on Accreditation and Market Surveillance (RAMS), Regulation 765/2008, which comes into effect on 1 January 2010, should strengthen market surveillance systems for products. These measures should also reinforce the credibility of CE marking.

Standardisation is a prerequisite for workable EU rules for electrical products. Voluntary standards and technical specifications supplement the requirements of EU law. With the assistance of the European Standards Organisations (ESOs), including CENELEC[57], new technologies are spread through the implementation of electrotechnical standards, providing open access to innovation.

The ESOs must continue to produce the standards necessary to facilitate market take-up of energy-efficient and environmentally friendly systems and products, in particular electrical, electronic, mechanical and ICT equipment. To this end, they must deepen the integration of environmental and energy efficiency aspects in the standardisation process[58] and set priorities

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55 http://ec.europa.eu/enterprise/electr_equipment/electrareport_annex3.pdf.

56 See also COM(2009)149 on Critical Information Infrastructure Protection.

57 http://www.cenelec.eu.

58 Communication 'Integration of Environmental Aspects into European Standardisation' COM(2004) 130 final.

in related work programmes and mandates. Standardisation activities also need to become a more integral part of RTD projects under the framework programmes.

3. CONCLUSIONS & FOLLOW-UP

This Communication identifies areas with growth potential to which the EEI can significantly contribute. In particular, EU climate and energy policies should be seen as an opportunity for the EEI to develop new businesses, new industries and new jobs, especially in times of recession. Full implementation of the measures outlined below should encourage long-term investment in energy infrastructure and ensure high-skilled human capital, thus reinforcing the EU's technological base.

It should also be noted that as part of the Lisbon agenda the Commission is carrying out product market and sector monitoring as a follow-up to the Single Market Review[59] including radio, TV and communication equipment and major household appliances, and the retail sale of electrical household appliances, radio and television sets. The EEI was selected for this in-depth sector investigation, as one of the sectors with problems in terms of market functioning and which are also either economically important or important for improving the adjustment capacity of the EU economy. Final results of this work are expected by the end of 2009.

The following specific actions need to be taken:

Industry should:

(1) step up its R&D efforts, for example to improve the energy efficiency of equipment in electricity grids and power plants, notably those that are fossil fuelled.

(2) invest in automation and ICT within industrial applications.

(3) go for voluntary agreements on the energy performance of products, where such action is likely to deliver policy objectives faster or in a less costly manner than mandatory requirements without conflicting with EU law.

(4) develop harmonisation in intelligent home control systems, including smart metering systems, allowing networking of household appliances and better management of electrical loads along with better temperature control. A good example is the 'smart home' project[60] supported by the Commission.

Utilities are encouraged to:

(5) proactively upgrade electricity grids allowing integration of a varied portfolio of electricity generation including centralised and decentralised sources[61], and equipment in power plants to reduce primary energy demand and CO_2 emissions, in order to ensure a proper functioning of the internal energy market and security of supply.

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59 http://ec.europa.eu/citizens_agenda/docs/sec_2007_1517_en.pdf

60 http://www.smartenergyhome.eu/.

61 COM(2008) 241 and the updated Strategic Energy Review.

Member States are invited to:

(6) facilitate new trans-national energy connections which allow better use of existing capacity on the basis of industry responsibility and concepts. Attention should be given to the deployment of underground power cable systems.

(7) foster solutions that boost consumer take-up of energy-saving technologies for existing and new buildings, including incentives for consumers to replace their old appliances with more efficient ones.

(8) ensure that products put on the market comply with the applicable legislation.

The Commission will:

(9) assess, in cooperation with the ESOs, the need for standardisation work to cover EPBD requirements and to help implement other legislation on energy efficiency like the Eco-design Directive, the Energy Labelling Directive and the Eco-Label Regulation.

(10) continue to support the ISO energy management model[62], which will provide organisations and companies with a widely recognised framework for building energy efficiency into their management practices.

(11) launch a study to assess how to improve the safety of electrical installations in buildings while at the same time increasing their energy efficiency and enabling safe integration of renewable energy sources and other new applications.

The Commission will closely monitor these actions, measures and impacts, in cooperation with stakeholders, who should report on progress in their implementation. In line with the conclusions of the May 2009 Competitiveness Council, the Commission will report in 2012 on the implementation of the proposed measures.

[62] http://www.iso.org/iso/pressrelease.htm?refid=Ref1122.

Annex I
EEI-relevant EU policy initiatives

The most relevant EU policies for the EEI are:

- The climate and energy package, including the emission trading system (EU ETS) and Directive 2009/31/EC on the geological storage of carbon dioxide[63].

- The internal market in electricity[64], the Communication 'An energy policy for Europe'[65], Decision 1364/2006/EC laying down a series of TEN-E (Trans-European Networks-Energy) guidelines and the Green Paper on TEN-E[66] as part of the Second Strategic Energy Review[67] presented in November 2008.

- The 'Sustainable Consumption and Production (SCP) and Sustainable Industrial Policy (SIP) Action Plan'[68], which aims to improve the energy and environmental performance of products, with incentives (e.g. public procurement or tax measures) to promote the best-performing products.

- The Ecodesign of Energy-using Products (EuP) Directive[69], which has given rise to a number of implementing measures for certain products. The SCP/SIP Action Plan contains proposals for extending the scope of the EuP Directive, revising the Ecolabel Regulation and revising the EU Eco-Management and Audit Scheme Regulation, plus a Communication on Green Public Procurement.

- The Energy Efficiency Action Plan (EEAP)[70], which incorporates 85 legislative and other measures to be implemented from 2007 to 2012, covering products, appliances, buildings, transport, energy conversion, financing, incentives, etc. The EEAP will be reviewed in 2009. In November 2008, the Commission adopted a Communication on energy efficiency[71] together with proposals for revising the Energy Labelling Directive and for recasting the Energy Performance of Buildings Directive.

- The second Strategic Energy Review[72], adopted in November 2008, which updates and elaborates on solutions applicable to the EEI and other industries.

- The Environmental Technologies Action Plan (ETAP)[73], which deals with eco-friendly and advanced environmental technologies and products to be used in investment and purchasing decisions. It also provides for financing facilities.

- The Cohesion Policy for 2007-2013, under which Member States may provide financial support for the EEI as suggested in this Communication. The Community Strategic

63 OJ L 140, 5.6.2009.
64 COM(2007) 528.
65 COM(2007) 1.
66 COM(2008) 782.
67 http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm.
68 COM(2008) 397.
69 2005/32/EC.
70 COM(2006) 545.
71 COM(2008) 772.
72 http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm.
73 COM(2004) 38.

Guidelines give priority to innovation, support for SMEs and sustainable development. In response to the financial and economic crisis, the Cohesion Policy allows Member States to accelerate and increase support for low carbon services and technologies.[74] For example, a proposed amendment to the ERDF Regulation allows Member States to dedicate up to 4% of their total ERDF allocation to energy efficiency and renewable energy investments in housing.

- The Proposal for a Directive on industrial emissions (IPPC)[75], which recasts seven existing Directives into a single clear and coherent legislative instrument. It will lead to significant benefits for the environment and human health by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques.

- The ongoing feasibility study on the setup of sectoral councils on employment and skills at European level which could potentially lead to the creation of such councils for the EEI if the sector's representatives support such initiative.

[74] COM(2008) 876 'Cohesion policy: investing in the real economy'.
[75] COM(2007)843 final.

Annex II
EU funding for EEI activities

The following instruments are potential sources of grants, loans, loan guarantees, venture capital, private equity, technical assistance, interest rate subsidies or risk capital.

- The Cohesion Policy Funds — For the period 2007-2013, Member States plan to use more than €10 billion from these Funds to support sustainable energy projects, for example, infrastructure, co-generation, renewable energies, energy efficiency and training and services including energy performance audits. This amount will be complemented with national public and in some cases private funding that can approximately double it.

  Beyond this, Cohesion Policy provides the largest EU support for SMEs, some €55 billion, which covers access to capital, advanced business services, start-ups, cluster initiatives, measures to stimulate RTD, eco-technologies and processes, etc. This amount is also to be topped up by national public and private capital.

- The 7th Framework Programme for RTD[76] — €2.35 billion over the period 2007-2013 for non-nuclear energy, such as renewable energy generation, CO_2 capture and storage technologies, clean coal technologies, smart energy networks, energy efficiency and savings and knowledge for energy policy-making.

- The Competitiveness and Innovation Programme (CIP)[77] — €700 million in its operational programme Intelligent Energy Europe over the period 2007-2013 is reserved for support for measures in the areas of low carbon energy, innovative technologies, energy efficiency and renewable energy sources, rational use of energy resources and energy-specific legislation.

- The Trans-European Energy Networks TEN-E[78] — €155 million over the period 2007-2013 to help promote interconnection and interoperability of electricity and gas infrastructures.

- The Common Agricultural Policy[79] — €3 billion for climate-friendly investments in rural development, like perennial energy crops, bio-energy plants, improving energy efficiency in machinery or renewable energy sources for on-farm or local use[80].

- The European Social Fund[81] for capacity building and vocational training to limit skill shortages in energy-efficient and environmentally friendly technologies.

Additional sources that can be used:

- Many Member States offer incentives for consumers to buy energy-efficient products such as vouchers for purchasers or personal income tax relief. When such incentives are granted without discrimination based on the origin of the product, they generally do not constitute State aid. State aid supporting environmentally friendly technologies or energy saving may

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76 http://cordis.europa.eu/fp7/home_en.html.
77 http://ec.europa.eu/cip/index_en.htm.; http://ec.europa.eu/energy/intelligent/index_en.html.
78 Decision 1364/2006/EC.
79 http://ec.europa.eu/agriculture/bioenergy/index_en.htm.
80 Regulations (EC) No 1698/2005 and No 1974/2006.
81 http://ec.europa.eu/employment_social/esf/index_en.htm.

be allowed under the conditions stipulated in the Community guidelines on State aid for environmental protection[82], adopted as part of the Climate Package in January 2008. State aid to support RTD/Innovation projects, clusters, innovation actions, and the loan of highly qualified staff can be granted to SMEs and to large enterprises under the conditions stipulated in the Community Framework for State Aid for Research and Development and Innovation.[83]

- The General Block Exemption Regulation ('GBER')[84] offers wide scope for Member States to grant aid in support of environmental protection easily and immediately without notifying the Commission.

- A concise summary of the legislation on the possibilities to support SMEs, not only for environmental protection but also, for example, for boosting RTD/Innovation activities, clusters or risk capital measures, is presented in the 'Handbook on Community state aid rules for SMEs'.[85]

- Guarantees are another form of State aid to encourage private financing.[86]

- On 17 December 2008, the Commission adopted a temporary framework for State aid authorising Member States to ease access to finance for companies through subsidised guarantees and loan subsidies for investments in products going beyond EU environmental standards. It promotes clean technologies and energy efficiency.[87]

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82 http://ec.europa.eu/comm/competition/state_aid/legislation/horizontal.html.

83 OJ C 323 of 30.12.2006, p. 1. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2006:323:0001:0026:EN:PDF.

84 Commission Regulation (EC) No 800/2008 of 6 August 2008 declaring certain categories of aid compatible with the common market in application of Articles 87 and 88 of the Treaty (General block exemption Regulation), OJ L 214, 9.8.2008, p. 3.

85 http://ec.europa.eu/competition/state_aid/studies_reports/sme_handbook.pdf.

86 2008/C 155/02.

87 COM(2008) 800 p.10, as amended on 25 February 2009, OJ C 83, 7.4.2009. Consolidated version: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:083:0001:0015:EN:PDF**}**.