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Action Plan for Energy Efficiency: Realising the Potential**

Analysis of the Action Plan for Energy Efficiency: Realising the Potential

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## COMMISSION STAFF WORKING DOCUMENT

### Analysis of the Action Plan for Energy Efficiency: Realising the Potential

#### 1. INTRODUCTION

##### *The role of improved energy efficiency*

The Commission Green Paper of 2006 entitled "A European Strategy for Sustainable, Competitive and Secure Energy"<sup>1</sup> made it clear that a common energy policy was necessary and will require concrete action at Community level. The Spring 2006 European Council, in very unambiguous terms, called for an ambitious and realistic EU Action Plan on Energy Efficiency, listing specific actions<sup>2</sup>. It is also important to mention the High Level Group on Competitiveness, Energy and the Environment, created at the beginning of 2006<sup>3</sup>. The Group explicitly endorsed the 20% savings potential from the 2005 Green Paper on Energy Efficiency<sup>4</sup>. Progress achieved in this regard will now be assessed in the framework of the regular Strategic EU Energy Reviews<sup>5</sup>.

Energy efficiency has thus gradually increased in importance in European economic, social and environmental policy in recent years. Starting in March 2000, the Lisbon European Council<sup>6</sup> set the objective of making Europe the most competitive and dynamic knowledge-based economy in the world. To support this strategy and help put it into practice, the Competitiveness and Innovation Framework Programme<sup>7</sup> of 2005 was launched, bringing together specific Community programmes with a view to boost European **productivity, innovation capacity, entrepreneurship and growth**, while addressing **environmental** concerns.

Energy efficiency is thus an indispensable element of the Lisbon Strategy and of the programmes supporting it. Energy efficiency promotes the three core objectives of improving **competitiveness, security of energy supply** and of reducing **environmental impact** from economic activity. Improving energy efficiency accomplishes this by lowering costs, reducing import dependency and cutting increasingly dangerous carbon-dioxide emissions, all in a cost-effective manner<sup>8</sup>.

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<sup>1</sup> COM(2006) 105 final of 8 March 2006.

<sup>2</sup> Presidency Conclusions of 23/24 March 2006. 7775/1/06 REV1 of 18.05.2006

<sup>3</sup> First Report on the High Level Group on Competitiveness, Energy and the Environment., European Commission, 2.06.2006.

<sup>4</sup> [http://ec.europa.eu/enterprise/environment/hlg/doc\\_06/first\\_report\\_02\\_06\\_06.pdf](http://ec.europa.eu/enterprise/environment/hlg/doc_06/first_report_02_06_06.pdf)

<sup>5</sup> The Commission established that up to 20% of Europe's primary energy consumption could be saved in a cost effective way by 2020. Doing More with Less, COM (2005) 265 final of 22.06. 2005.

<sup>6</sup> The first annual Strategic EU Energy Review (SEER) is preliminarily scheduled for the end of 2006.

<sup>7</sup> Presidency Conclusions, Nr. 100/1/00 of 23.3.2000.

<sup>8</sup> COM(2005) 121 final of 6 April 2005.

<sup>8</sup> While the exact interpretation of cost-effectiveness in Community legislation on energy efficiency has deliberately been left open to Member States, the lowest life-cycle cost (LCC) method for meeting foreseen energy investments (on the energy supply or demand side) is

## *Common EU energy policy and the Action Plan*

The need for a common EU energy policy to meet the objectives of the Lisbon Strategy and the challenges of globalisation and climate change was underlined at the Hampton Court informal summit in October 2005<sup>9</sup>. These actions included strengthened EU leadership, full implementation of EU legislation, measures in the energy transformation and transport sectors, and engagement with third countries.

An **Action Plan for Energy Efficiency**<sup>10</sup> and an Executive Summary of the Impact Assessment Report<sup>11</sup> are presented in accompanying documents. The Action Plan describes in brief the priority actions set forth to realise the existing savings potential. In an annex to the Action Plan, all of the proposed measures – around 75 - are listed, together with approximate timetables. The present **Commission Staff Working Document** lists the measures in the Action plan and presents additional background, analysis and detail on these measures, sometimes in the form of sub-measures. A Report on the Impact Assessment<sup>12</sup> also accompanies these three documents.

## **2. OBJECTIVE AND SCOPE**

The immediate **objective** of the Action Plan for Energy Efficiency is to present an operational framework of policies and measures with a view to realising the energy savings potential that exists in the EU. This potential is now estimated to be more than 20 % of annual primary energy consumption<sup>13</sup>. The Plan sets forth cost-effective initiatives to be launched in the coming six years intended to realise this potential.

The broader and long-term **ambition** of the Action Plan is to produce lasting market, institutional, technical and behavioural change, while empowering and mobilising actors on the energy market. Together these are foreseen to lead to significant and lasting improvements in energy efficiency by providing EU citizens with the globally most energy-efficient buildings, appliances, processes, cars and energy systems.

For most measures, the present document also sets forth work programmes that are sufficiently detailed to allow market actors to plan their activities accordingly, including providing information for national Energy Efficiency Action Plans.

The **scope** of actions taken in the EU Energy Efficiency Action Plan corresponds to that in the Green Paper on Energy Efficiency. It covers all end-use sectors (residential, tertiary, the public sector, industry and transport), as well as the energy transformation sector. The international sector is also given special attention.

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generally regarded as the most straightforward and easy-to-interpret measure of economic evaluation.

<sup>9</sup> 27 October 2005

<sup>10</sup> COM (2006) 545

<sup>11</sup> SEC (2006) 1175

<sup>12</sup> SEC (2006) 1174

<sup>13</sup> A goal to realise 20% of primary energy consumption by 2020 was set forth in the Commission Green Paper on Energy Efficiency, “Doing More with Less”, COM (2005) 265 final of 22 June 2005.

### 3. TECHNOLOGIES

The further development and deployment of commercially available energy-efficient **technologies** with satisfactory life-cycle costs is essential to achieving EU energy objectives. The Action Plan therefore promotes a wide portfolio of technologies in all energy-using sectors and for all commercially viable energy vectors. The Plan also encourages the demonstration and use of new, innovative and emerging energy-efficient technologies and techniques, as well as applied research and development. A **strategic energy technology plan**<sup>14</sup> is under consideration, possibly together with a **European Institute of Technology** and a **European Energy Observatory** for monitoring, as proposed by the recent Green Paper on sustainability, competitiveness and secure energy.<sup>15</sup> These institutional developments, together with a strong political commitment from the Member States and active participation from the business and financial sectors, will contribute to a sustainable technology trajectory.

### 4. TIMETABLE

The approximate implementation dates set forth are also intended to help Member States to coordinate measures proposed in the EU Action Plan with initiatives in their own **national Action Plans for Energy Efficiency**. The latter are now required by the newly adopted Energy Services Directive<sup>16</sup>. National Action Plans have three-year cycles except for the first one, which is for four years.

The present EU Action Plan covers a six-year period, from 1.1.2007–31.12.2012. It allows sufficient time for proposed legislation to be adopted and transposed<sup>17</sup>. This Action Plan also comes six years after the first EU Action Plan for Energy Efficiency<sup>18</sup>. The actions in the first Plan have either been implemented or are now in the process of implementation. A mid-term review is planned with a view to monitoring progress with the Action Plan.

### 5. POLICY CONTEXT

The policies and measures proposed in the Action Plan are supported by the results of a number of reports, stakeholder consultations and political decisions. An impact assessment has also been carried out to help ensure the economic feasibility and the social and environmental viability of the proposed measures. Moreover, the impact assessment compares the costs and benefits of the measures with a view to prioritise certain measures due to their greater impact and lower costs.

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<sup>14</sup> Also to include the enabling contribution of relevant information and telecommunications technologies (ICT).

<sup>15</sup> Ibid.

<sup>16</sup> Directive 2006/32/EC on Energy End-use Efficiency and Energy Services and repealing Council Directive 93/76/EEC.

<sup>17</sup> The current Action Plan also falls within the timeframe for the Kyoto Protocol (2008 – 2012) and the 2007 – 2013 Financial Perspective. The six-year cycle will allow a new EU Action Plan to be adopted during 2012, based on results from the Commission mid-term review and the final review planned for the end of 2011.

<sup>18</sup> COM(2000)247 final of 26.04.2000.

### ***Green Paper on Energy Efficiency***

The Green Paper on Energy Efficiency<sup>19</sup> proposed a number of possible policies and measures, posed 25 questions to stimulate discussion, and launched a public debate on the need for action at Community level.

Market failures and barriers outlined in the Green Paper on Energy Efficiency, including informational, technical, institutional and regulatory ones, point to a need for initiatives to be taken at EU level. Some autonomous improvement in energy efficiency has been registered as a result of market forces and earlier policies and measures. However, there remains a need for better implementation, increased enforcement and new measures to realise much of the remaining savings potential. The nature of this improved implementation and the possible new measures needed were main themes in the 25 questions that were posed.

### ***The Debate on the Green Paper on Energy Efficiency***

The present Action Plan on Energy Efficiency takes into account the 241 responses submitted during the public consultation on the Green Paper on Energy Efficiency<sup>20</sup> and discussions in the High-Level Group meetings and fora dedicated to energy efficiency.

Many important points are raised in the analysis of the debate and the responses to the questions in the Green Paper on Energy Efficiency. Among these is an apparent urgent need to improve the availability and quality of information on energy consumption and on available energy-efficient technologies and techniques. Information on financing possibilities and instruments is also shown to be lacking. More and higher quality energy audits are recommended. A number of possible new measures emerge for the building sector, including the wider use of passive technologies and stronger measures for smaller existing buildings, if these are introduced after transposition of the current Energy Performance of Buildings Directive<sup>21</sup>. The contribution of fiscal instruments to energy efficiency is underscored. Wider use of targeted and coherent tax incentives, both tax credits and tax differentiation to promote energy efficiency is recommended, including reduced VAT for energy-efficient products and higher excise tax for inefficient vehicles. Fiscal neutrality is considered important, mainly to prevent tax losses to Member State treasuries. Internalising external costs is considered necessary. National Action Plans, which are already required by the new Energy Services Directive, are strongly supported, as are sectoral energy savings targets, set by the Member States. State Aid rules to allow larger subsidies to education and training related to improved energy efficiency are recommended. There is a call for improving existing EU legislation, more self-regulation and less new legislation. Binding minimum efficiency requirements for automobiles are also called for.

### ***The European Parliament's Report on the Green Paper on Energy Efficiency***

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<sup>19</sup> Ibid.

<sup>20</sup> Report on the Analysis of the Consultation on the Green Paper on Energy Efficiency: Commission Staff Working Document (SEC (2006)693) of 29.05.06.

<sup>21</sup> Directive 2002/91/EC of 16 December 2002.

The European Parliament's Report on the Green Paper on Energy Efficiency<sup>22</sup> sets forth over 100 well defined and ambitious recommendations for improving energy efficiency. These cover all facets of energy savings. The report makes clear that better implementation of existing legislation is the most expedient way to improve energy efficiency in the Union. To accomplish this, the Parliament calls on the Commission, in addition to increasing the use of infringement procedures as a way to gain credibility, to provide clear, frequent and accessible updates on the state of implementation of EU energy Directives. In addition to improved and accelerated implementation of the Energy Performance of Buildings Directive, the Parliament asks the Commission to rapidly evaluate the impact on energy consumption on the economy of gradually extending the scope of the directive to cover all existing residential buildings. In the same impact assessment, minimum efficiency requirements for building components should be considered, according to the report, as well as means to further encourage the use of passive or natural sources of lighting, cooling and heating.

Parliament's Report also sets forth a number of proposals relating to different funding mechanisms, including for small and medium-sized enterprises (SMEs) and for energy service companies (ESCOs). The increased use of Structural and Cohesion funds, of Public-private partnerships and the creation of an Energy Efficiency Fund are proposed to improve the financing of energy efficiency. A framework directive on transport energy efficiency is proposed.

To address the problem of providing incentives for energy supply companies to promote energy efficiency measures and thereby sell less energy, the Parliament recommends the creation of a competitive energy services market with full transparency and equal treatment for all operators with a view to developing the alternative business of energy efficiency.

### ***Report on the Second European Climate Change Programme***

Several important findings are presented in the 2006 Review of the European Climate Change Programme<sup>23</sup>. One conclusion of the review is that it is possible, with effective policies and measures, to stabilise energy demand in spite of increased economic growth and increased demand for energy services. While total primary energy consumption for the EU as a whole grew by 0.8% a year between 1990 and 2003, energy consumption in some Member States has remained unchanged, mainly through improved energy efficiency in buildings, in the service sector and in industry. Others, on the other hand, have experienced a more-or-less constant rate of growth in energy consumption. In reviewing existing EU legislation on energy efficiency, the ECCP report also concludes that Member State reporting on their energy efficiency policies is minimalist. The new requirements for national Energy Efficiency Action Plans are expected to improve this. More ambitious implementation in Member States

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<sup>22</sup> Report on the Green Paper on Energy Efficiency, M. Vidal Quadras, rapporteur. EP Report P6\_A(2006)0160 of 03.05.2006.

<sup>23</sup> Final Report from the European Climate Change Programme, Energy Demand Group, European Commission.  
[http://forum.europa.eu.int/Public/irc/env/eccp\\_2/library?l=/eccp\\_review\\_energy\\_1&vm=detail&sb=Title](http://forum.europa.eu.int/Public/irc/env/eccp_2/library?l=/eccp_review_energy_1&vm=detail&sb=Title)

of EU legislation is necessary. In addition, some details of existing legislation need revision and supplementary policies adopted, including new European Norms.

## 6. SAVINGS POTENTIALS, COSTS AND BENEFITS

The cost-effective energy savings potential in the EU is now estimated to be around 1.9% per year during the next 15 years, assuming oil prices remain high and that an average GDP growth for the EU of 2.3% per year is achieved<sup>24</sup>. Achieving the 20% goal established by the Green Paper on Energy Efficiency would lead to an annual savings of primary energy by 2020 of around 390 mtoe. The savings necessary to achieve this from existing and new policies and measures is estimated to be 1.5 % per year, in addition to the estimated annual baseline or "business-as-usual improvements of 1.8% (autonomous improvements of 0.85% annually and the impact of previous Community legislative measures of 0.35 % annually, during the next 15 years. Annual structural changes of 0.6% are also estimated.<sup>25</sup>

A number of detailed scenario studies indicate that the 20% savings potential is in many respects a conservative estimate. With additional policies and measures it is considered completely feasible to realise cost-effective savings of around 28% by 2020. This is based on calculations showing potentials of 27% and 30% for the residential and commercial sectors, respectively, while industry is estimated to have a potential of 25%. For transport the savings potential is 26%, including modal shifts<sup>26</sup>.

The Impact Assessment Report for the Action Plan looks at the economic, environmental and social costs and benefits of the actions set forth in the Action Plan, using a multi-criteria analysis. It supports the feasibility of the proposed measures contributing to reaching the goal set forth in the Green Paper of saving 20% of primary energy consumption by 2020 in fulfilling a large share of the existing potential. The Impact Assessment also supports the proposition that improved implementation of existing measures can deliver substantial savings, approximately half of the available energy savings potential, and that new policies and measures will be required to realise additional savings. Selection criteria used give guidance regarding which policies and measures should be given priority. Improved security of supply, cost-effectiveness, environmental impact (primarily CO<sub>2</sub> emission mitigation) effects on administrative costs on business and EU competitiveness and persistence of impacts are core considerations. Underlying these criteria are of course other dimensions such as the trade and investment flows, innovation and research, employment, government budget impacts, social inclusion and others. Additional important findings include the fact that improved information, training and education, together with better compliance and enforcement can provide significant energy

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<sup>24</sup> A comprehensive and detailed energy savings potential study for the EU Member States has recently been launched by the Commission. When this is completed, in early 2007, it will provide guidance for Member States and the Commission in reviewing the progress made toward reaching the current final energy savings targets of 1% per year with the actions reported in national Energy Efficiency Action Plans. Several partial studies are cited in the Green Paper on Energy Efficiency and in the Impact Analysis. Report.

<sup>25</sup> Impact Assessment Report (SEC (2006) 1174 and European Commission energy scenarios 2006.

<sup>26</sup> Wuppertal Institute 2005, based on Mantzos (2003).



savings at low cost. National building codes, related to the Energy Performance of Buildings Directive, as well as better enforcement and use of the EU labelling scheme for appliances can increase the impacts from these Directives markedly. Other important findings of the Impact Assessment are found in the transport sector, where the improved labelling of energy performance of automobiles and a strengthening of the current ACEA agreement on energy performance are shown to have strong favourable impacts on energy efficiency as well as to provide other economic, social and environmental net benefits<sup>27</sup>.

The Impact Assessment Report finds that the measures proposed in this Action Plan on the whole have net positive benefits regarding security of supply, competitiveness, employment and the environment.

## **7. POLICIES AND MEASURES**

The policies and measures in the Action Plan are arranged under six main headings. In order to use the full potential of EU legal instruments, both existing and proposed it is essential that relevant market actors implement and fully enforce these measures. Improving energy transformation requires several different types of measures to ensure optimal production, transmission and distribution of energy. The transport sector also requires a programme of different types of measures, including infrastructural changes and modal shifting. Financing energy efficiency requires measures at local, regional, national and international level. Like all the sectors in the other headings, partnerships between the private and public sectors are crucial.

The importance of the task of changing energy behaviour cannot be over-stated. As additional measures are taken, it is imperative that market actors are provided with full information and correct price signals.

Finally, globalising energy efficiency is the only way to ensure that the energy efficiency improvements made in the EU are not neutralised by energy efficiency losses outside the EU. Evaluation and monitoring of progress in improving energy efficiency is essential and will be carried out inter alia using national Energy Efficiency Action Plans and Commission reports based partially on these.

### **7.1. Dynamic energy performance requirements for energy-using products, buildings and energy services**

The first pillar of the Action Plan builds to a great extent on the comprehensive framework of Community directives and regulations already in force designed to improve energy efficiency in energy-using products, buildings and energy services. Most of these were in fact proposed in the first Energy Efficiency Action Plan, adopted in 2000<sup>28</sup>. A co-ordinated and ambitious implementation, support for and

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<sup>27</sup> These positive impacts are also set forth in a number of other recent reviews and reports, as set forth in the Green Paper on Energy Efficiency.

<sup>28</sup> The Action Plan to Improve Energy Efficiency in the European Community (COM(2000) 247) final proposed a number of important measures that were subsequently adopted as Directives, almost all of which are now under implementation and will soon be reviewed and evaluated..

enforcement of this legal framework will lead to significant improvements in energy efficiency and to lasting market transformation. While enforcement is primarily a Member State matter, Community level measures to ensure enforcement are considered necessary.

The objective of action in this chapter is to ensure that Member States contribute to the development of an internal market for energy-efficient goods and services by transposing, implementing and enforcing Community legislation in this area as effectively as possible. While many measures are on track, in some cases market, institutional and other barriers still prevent proper implementation. These need to be removed and institutional capacity strengthened to ensure proper implementation, enforcement and monitoring. Amended Directives, new initiatives are also proposed when necessary.

Current EU energy efficiency legislation includes: the ECO-Design Directive<sup>29</sup>; the Labelling Directive (92/75/EC) and its 8 implementing Directives<sup>30</sup>; the Energy Star Regulation<sup>31</sup>, the Labelling Directive<sup>32</sup> and its 8 implementing Directives, the Directive on Energy End-Use Efficiency and Energy Services<sup>33</sup>; and the Energy Performance of Buildings Directive<sup>34</sup> ..

#### *7.1.1. The implementation of the Eco-Design Directive (2005/32/EC)*

Directive 2005/32/EC adopted on 6 July 2005 provides the framework for setting minimum energy performance standards within eco-design requirements for energy-using products. As regards energy consumption, this relates to setting maximum levels of energy consumption for a given performance/functionality of the product. Products which do not meet the requirements may not be put on the market.

The Commission considers **dynamic energy efficiency standards combined with energy performance rating and labelling** a powerful tool for market transformation towards energy efficiency, influencing both consumers and appliance and equipment producers. As part of the internal market core competence of the Commission, it also provides the basis for **complementary actions by the Member States**, such as information campaigns, white certificate schemes, rebates and public procurement.

Therefore, the Commission will develop eco-design requirements and labels for a range of key products **2007-2012** as a priority of its energy efficiency policy.

- **The Commission will develop eco-design requirements for 14 priority product groups** that have been identified for early implementation. These products offer a high potential for cost-effective energy efficiency improvements in relation to the associated costs and benefits of measures to reduce their environmental impact, as

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<sup>29</sup> OJ L 191, 22.7.2005, p. 29.

<sup>30</sup> Directive 92/75/EC, OJ L 297, 13.10.1992, p. 16-19.

<sup>31</sup> Regulation (EC) No 2422/2001.

<sup>32</sup> Directive 92/75/EC, OJ L 297, 13.10.1992, p. 16-19.

<sup>33</sup> OJ L114, 27.4.2006, p. 64.

<sup>34</sup> OJ L 1, 4.1.2003, p. 65.

laid down in Article 16.2 of the Directive.<sup>35</sup> **The results of studies on these product groups will become available between February and December 2007**, depending on the complexity of the products. **Work will continue 2007-2009**. The Commission will also **provide theoretical background** on eco-design, using workshops for Member State experts, environmental NGOs and consumer organisations. The product groups being studied are:

- boilers and combi-boilers (gas/oil/electric)
  - water heaters (gas/oil/electric)
  - personal computers (desktops & laptops) and computer monitors
  - imaging equipment: copiers, faxes, printers, scanners, multifunctional devices
  - consumer electronics; televisions
  - standby and off-mode losses of energy-using products
  - battery chargers and external power supplies
  - office lighting
  - (public) street lighting
  - residential room conditioning appliances (airco and ventilation)
  - electric motors (1-150 kW )
  - commercial refrigerators and freezers, including chillers, display cabinets and vending machines
  - domestic refrigerators and freezers
  - domestic dishwashers and washing machines.
- **Eco-design requirements for more product groups** will be adopted, pending the favourable results of impact assessments, calls for tender for preparatory studies will be launched and eco-design requirements developed **2008-2010**. Possible areas include the following:
    - Solid fuel boilers
    - Laundry driers
    - Industrial air compressors

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<sup>35</sup> The order in which these requirements will be developed will be decided on the basis of the results of the studies that have been undertaken, taking into account the available savings potentials.

- Electric heating appliances (incl. heat pumps)
  - Domestic or industrial lighting
  - Set-top boxes
  - Vacuum cleaners
- **To improve implementation of the Directive, a Consultation Forum will be set-up and convene** at the beginning of **2007** to deliberate on first draft implementing measures on possible self-regulatory initiatives, and on the 3-year Work Plan to be adopted by the Commission by July 2007, indicating product groups to be covered up to 2010.
  - **As part of the implementation of the Directive, a Regulatory Committee will be functional** in the 1st half of **2007**, in time to consider possible implementing measures.
  - **Self Commitments**, in which industry delivers energy savings faster and at lower cost than mandatory requirements, and which meet the criteria of Annex VIII of the Directive will be supported by the Commission during **2007-2012**.

#### 7.1.2. *The “Labelling” Framework Directive (92/75/EC)*

- **Two draft Commission Directives** are being prepared for the energy labelling of **gas water heaters** and **electric water heaters**. Their adoption by the Commission will be subject to the availability of suitable energy consumption measurement standards. It will be coordinated with work preparing for eco-design measures during **2007**.
- **Additional labelling implementing directives and revision of existing labels** will be adopted by the Commission for some of the products under examination in the above preparatory studies for eco-design, with a view to re-scale them every 5 years or when technically justified. Only 10 – 20 % of most energy-efficient models will normally be given A-label status. **The existing labelling classification will be upgraded by amendment**, based on the results of individual eco-design studies, and will address the issue of re-scaling the existing labelling system within the present A-G rating scheme in **2007-2009**. Life-cycle costs and expected energy savings will also be verified.
- **The Commission will, in considering amending Framework Directive 92/75/EC, seek** to enlarge its scope to include other equipment, pending an **impact assessment**. This assessment, to be carried out in **2007-2008**, will determine the benefits and costs of a revision.
- **The Commission will launch a comprehensive survey on the practical implementation** of Directive 92/75/EC and application of energy labelling in shops and other sales channels in the EU Member States. This is expected to be carried out during **2007**. The level of compliance directly influences the effectiveness of the Directive and the energy savings achieved

### 7.1.3. *Energy Star Agreement: Efficiency of office equipment*

- **A new Energy Star Agreement** with the USA on coordinating the labelling schemes for office equipment has been adopted by the Commission and will be concluded by 2007 for another 5 years. **Energy Star will introduce new, demanding efficiency criteria for imaging equipment** (copiers, printers, fax, scanners, etc.), for **computers and for other equipment with external power supplies**. In parallel with the conclusion of the new Energy Star Agreement by the Council, the Commission will **propose in 2007 amending Regulation (EC) No 2422/2001 with a view to improve implementation** of the programme in the EU.
- **The Commission will continue developing more demanding energy efficiency criteria for office equipment 2007-2011**. To determine the appropriate level of efficiency and the timing, the Commission will launch a survey on market penetration of Energy Star equipment and on new energy efficiency criteria<sup>36</sup>.

### 7.1.4. *The Energy End-Use Efficiency and Energy Services Directive (2006/32/EC)*

- The Commission will promote the development of the market for energy services by mobilising energy suppliers and regulators, as well as installers and suppliers of energy-using equipment and builders. Energy service companies (ESCOs) will also be promoted.
- **The Commission will consider to hold national and EU stakeholder conferences in 2007** to prepare for the first national Energy Efficiency Action Plans.
- **The Commission will prepare in 2007 a Memorandum of Understanding with the Council of European Energy Regulators (CEER)** through the co-operation of the European Regulators' Group for Electricity and Gas (ERGEG), setting forth guidelines and a code of conduct on improving energy end-use efficiency. These will facilitate the development of measures to comply with the Directive, including Article 10 on tariff structures. Requirements on distribution tariff structures that promote energy efficiency, while being cost-reflective, will be considered, taking into account progress reported by Member States in transposing Article 10. The Commission will also consider additional means for regulators to facilitate the meeting of Member State energy savings targets
- **The Commission will review the Directive by the end of 2008**, based on the first Commission report in January 2008, which assess the National Energy Efficiency Action Plans submitted June 2007. Impact assessments will be scheduled, with a view to further strengthen the Directive where it is found to be appropriate.
- **A Community-wide White Certification Scheme** will be assessed in **2008**, based on Commission progress reports on the development of a harmonised measurement system for energy efficiency improvements. A Commission Communication on the subject will be considered, based on recent studies.

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<sup>36</sup> Energy Star and Eco-design requirements will be co-ordinated.

- **Increased coherence in national public procurement guidelines** will be sought in 2008 to strengthen Member State and existing Community guidelines as required by Article 5.
- **The Commission will seek more stringent and harmonised requirements for voluntary agreements.** A review and a possible Commission Communication on the criteria and conditions for voluntary agreements will be carried out by 2009 with a view to strengthen the application of the criteria in Article 6 2.(b). The effectiveness of different associated financial incentives—including tax rebates—will be studied. Weaknesses and strengths of existing and future voluntary agreements, including those allowed in the Energy Performance of Buildings Directive, will be considered with a view to improve their effectiveness and relevance and to avoid the creation and acceptance of low-performing voluntary agreements.
- **The Commission will issue a mandate in 2008 for an EN standard for investment grade energy audits** for industry and for buildings with a view to improve the quality of the energy audits in Article 12. This will be based partially on national Energy Efficiency Action plans. Audits used in the Energy Performance of Buildings Directive will also be studied and compared with progress reported by Member States in their national Action Plans.
- The Commission will consider in **2009** and propose as appropriate **more detailed metering and billing requirements**, to complement those set out in Article 13. Mandatory requirements for the use of smart metering will be proposed if appropriate. The frequency and quality of billing will also be evaluated, with a view to introduce mandatory requirements if appropriate.
- In conjunction with a future **European Institute of Technology** and a **European Energy Observatory** for monitoring the energy market, as proposed by the recent Green Paper on sustainability, competitiveness and secure energy,<sup>37</sup> the Commission will consider supporting or establishing in 2008 a Centre for Technology Monitoring and Development, to identify and improve emerging and existing technologies and promote them, all in close dialogue with industry. One example will be to improve existing technologies (e.g. insulation material and intelligent glass), by establishing groups of prospective purchasers to set technical specifications. In an open tendering process, the group will then invite manufacturers to meet these specifications. Some co-financing from the RTD Framework Programme is foreseen.

#### 7.1.5. *The Energy Performance of Buildings Directive (2002/91/EC)*

The transposition deadline for the EPBD was January 2006, but most Member States have experienced delays and have requested extra time – in a few cases up to three years – for transposing Articles 7, 8 and 9. **An amended Directive and strengthening measures will be considered** in 2009. It will build on and include the following:

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<sup>37</sup> Ibid.

- **A Commission Staff Working Document on the state of implementation of the EPBD** will be prepared during 2007. This analysis will be carried out to meet the requirements of Articles 11 and 13 on the review procedure. Support projects<sup>38</sup> and national Energy Efficiency Action Plans will also be used in the analysis. The levels of the minimum performance requirements being adopted in Member States will be studied.
- **The Commission will propose an expanded role for the public sector to demonstrate new technologies and methods.** During 2009, an assessment of the costs and benefits of expanding the role of the **public sector** to demonstrate new energy-efficient and renewable technologies and methods will be carried out with a view to amending the EPBD to include such an obligation in Article 7.3. This obligation will be facilitated by the use of results from Community support programmes<sup>39</sup>.
- **The Commission will propose lowering significantly the threshold for minimum performance requirements for major renovations in 2009.** An impact assessment will be carried out on the costs and benefits of lowering the **1000 m<sup>2</sup> threshold** in Article 6. The analysis will also consider an alternative definition of “**major renovations**”.
- **The Commission will consider proposing EU minimum performance requirements (kWh/m<sup>2</sup>) for new and renovated buildings in 2009.** During 2007-2008, a study will be carried out on the costs and benefits of setting **EU minimum performance standards** for different types of new and renovated buildings for different European climate zones. Integrated performance requirements, as well as building component requirements (for walls, roofs, floors, windows, and systems<sup>40</sup>), and combinations of the two methodologies will be considered. A target for new buildings in the EU will be to approach the level of passive houses, with minimal needs for external energy supply for heating and cooling will be considered.
- **The Commission will develop by the end of 2008 a strategy for very low energy or passive houses.** An impact assessment of the extended use of **passive heating and cooling, biomass and other renewables** to complement or replace conventional (electrical and gas) heating and cooling will be carried out in 2007-2008. This will be done inter alia with a view to include passive housing requirements in an **amended Article 5**. A lower threshold and more precise links to the results of the feasibility studies will be sought.
- **The Commission will propose in 2009 measures for Member States to provide financing for investments recommended in investment grade audits, if these are highly cost-effective.** During 2008-2009 an assessment will be carried out of the impacts of requiring Member States to **provide guaranteed financing** for all

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<sup>38</sup> *EPBD Concerted Action, EPBD Buildings Platform* and other IEE-funded projects.

<sup>39</sup> Including dissemination of the results from IEEA and RTD Framework Programme Concerto and Eco-building and demonstration projects and the use of Structural and Cohesion Funds..

<sup>40</sup> Domestic hot water/heating, ventilation, air-conditioning and lighting systems.

investment grade audit recommendations for improvements resulting from **Article 7** on the certification of buildings, providing these meet certain cost-effectiveness criteria. Such criteria will include a maximum pay-back period, a minimum financial threshold and acceptable risks.

#### 7.1.6. *Construction Products Directive*

- The Commission will propose in **2008** to strengthen and accelerate the use of energy efficiency criteria in the Construction Products Directive. Energy efficiency and energy performance criteria in the Directive will be evaluated with a view to accelerate the development of technical specifications for new energy-efficient building components.

### 7.2. **Improving energy transformation**

The energy transformation sector uses around one-third of all primary energy. At the same time, average transformation efficiency for electricity generation, for example, is around 40%. New generation capacity can have an efficiency that is close to 60%. This creates a large potential for improving energy efficiency, especially as considerable new generation capacity needs to be installed in coming years. Measures are called for and judged to be very cost effective. Losses in the transmission and distribution of electricity - often as high as 10% (2% in transmission and 8% in distribution) - can also be reduced. Emissions trading is a strong driver but additional measures are required.

#### 7.2.1 *Minimum Efficiency Requirements for New and Existing Generation Capacity*

- **For new electricity and district heating<sup>41</sup> and cooling generation capacity lower than 20 MW the Commission will propose and develop by 2008, together with the manufacturing industry, minimum efficiency requirements,** taking into account the effects of existing legislation in this area<sup>42</sup>. The Commission will also consider the necessity of such requirements for larger production units.
- **For existing generation capacity,** the Commission will propose and develop by 2008, in collaboration with the electricity and heating and cooling supply industries, guidelines on good operating practices. The application of these guidelines will subsequently be evaluated and additional measures, including legislation, will be proposed if necessary.

#### 7.2.2 *Certification of Heat and Electricity Plant Engineers*

- **The Commission will in 2008 issue a mandate for a European Norm for a certification scheme** to ensure that chief operating engineers at plants above a given size are qualified to maintain maximum operating efficiency of heat and electricity generation plant, including cogeneration. **While possible to use branch**

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<sup>41</sup> Assumes adoption 2007 of the methodology to measure the energy performance of district heating, based on a preliminary European Norm (prEN) currently undergoing public enquiry.

<sup>42</sup> Integrated Pollution Prevention and Control Directive, Large Combustion Directive, CHP Directive and the Emissions Trading Directive.



**organisations as certifying bodies, legislation may be considered and proposed as appropriate on the use of this certification .**

### 7.2.3 *Improving Existing Transmission and Distribution Networks*

- **The Commission will develop by 2008, and agree thereafter guidelines in co-operation with the Council of European Energy Regulators (CEER) on good regulatory practices to reduce transmission and distribution losses, developed in collaboration with the European Regulators` Group for Electricity and Gas (EREG), considering *inter alia*, charges, incentives, locational signals and cross-border incentive differences.**

### 7.2.4 *New regulatory framework for distributed generation*

Centralised electricity generation has advantages in the form of economies of scale. Often, however, these advantages are outweighed by transmission and distribution losses.

The second electricity directive (2003/54/EC) already contains an incentive for Member States and national regulatory authorities to promote distributed generation by taking account of its benefits for the transmission and distribution networks in the form of avoided long-term investment costs. Member States must also ensure that authorisation procedures for this type of generation take account of its small-scale nature. However, strengthening measures are required.

- With a view to ensure conformity to Community rules on freedom of establishment and of provision of services based on objective, non-arbitrary and non-discriminatory criteria, **the Commission will in 2007 propose a new regulatory framework** for the promotion of grid access and connection of distributed (decentralised) generation.

### 7.2.5 *Promotion of Cogeneration (CHP) and implementation and amendment of the Directive on the Promotion of Cogeneration*<sup>43</sup>

The objective of the Directive on the Promotion of Cogeneration (2004/8/EC), currently under implementation is to improve primary energy efficiency by promoting and developing high efficiency cogeneration of heat and electricity. To further promote CHP, the Commission will:

- **Accelerate harmonisation of the calculation methods** for high-efficiency CHP in 2008-2011 among Member States through comitology with a view to increase coherence in support schemes.
- **In 2008 issue a mandate for a European Norm (EN) for certification of chief engineers for CHP plants** with a view to increasing the operating efficiency of CHP plants by the application of a certification process, prepared in co-operation with national branch organisations or similar bodies.

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<sup>43</sup> OJ L 52, 21.2.2004, p.50

- **Encourage Member States through the comitology procedure to reach agreement in 2007-2009 on a harmonised electronic Guarantee of Origin.** This will accelerate and simplify the process of recognising CHP Guarantees of Origin.
- **Propose stricter requirements 2008-2011, either through a new common regulatory framework or through other legislation for market regulators to promote CHP grid access and penetration.**
- **Propose to require Member States to identify heat demand suitable for CHP and national potentials for waste heat in 2007-2008. In order to identify heat demand suitable for the development of CHP and of waste heat from industrial processes and power generation suitable for district heating, Member States will be asked to provide quantified information.**
- **Propose minimum efficiency requirements for district heating (2007 – 2008)** based on a recently developed European Norm (EN) for measuring energy performance of district heating systems. The Commission will consider the manner in which these requirements will be applied, taking into account existing legislation .
- **Issue a mandate in 2007-2009 for a minimum efficiency requirement for micro CHP, considering also related grid access questions, and including requirements for maximum methane emissions from gas-motors in CHP to avoid efficiency gains being neutralised by increased emissions of methane, taking into account the effects of existing legislation and fiscal incentives in this area.**

### 7.3. Moving on transport

The transport sector is of vital importance to the European economy, accounting for almost 20 % of total primary energy consumption. It continues to be the fastest increasing consumer of energy, indicating its strategic importance.. However, as almost all of the energy consumed in this sector is fossil fuel, transport is also the fastest growing source of greenhouse gases.

#### 7.3.1. Fuel efficiency in road vehicles

In line with the renewed Sustainable Development Strategy, the following fuel efficiency objectives will be implemented<sup>44</sup>:

- **140 g CO<sub>2</sub>/km by 2008/9:** Progress towards the current ACEA, JAMA and KAMA<sup>45</sup> voluntary agreements target of 140 mg CO<sub>2</sub>/km by 2008/2009 has been made, but additional efforts by manufacturers will be required to meet the target.

<sup>44</sup> In addition, it has to be pointed out that the 2005 Commission proposal introducing a CO<sub>2</sub> element in passenger car taxes is a step already undertaken in this direction (COM(2005) 261, Proposal for a Council Directive on passenger car related taxes.

<sup>45</sup> *European, Japanese and Korean car manufacturers associations.*

- Should it become clear that the commitments in the current agreements will not be honoured, the Commission will, in 2007-2008 investigate the measures, including legislative ones, to ensure that the necessary CO<sub>2</sub> reductions are delivered.
- Before the end of 2006 a Communication on a revised strategy to reduce CO<sub>2</sub> from cars beyond the current voluntary commitments will be forwarded to the European Parliament and Council, aimed at reaching the Community objective of **120 g CO<sub>2</sub>/km by 2012** through a comprehensive and consistent approach, involving car manufacturers and other stakeholders, such as the oil and tyre industries. In addition, the future strategy will address not only passenger cars (M1 vehicles) but also progress on light-commercial vehicles (N1 vehicles), between 2007 and 2011. The Commission will in this context encourage quick adoption by the Council of its proposal on passenger car taxation<sup>46</sup> aiming at creating a CO<sub>2</sub> element in passenger car taxes to promote achieving the objective of reducing emissions.
- The Commission will continue **2007-2012 to strengthen** its efforts to develop markets for cleaner, more energy-efficient, smarter and safer vehicles through public procurement and awareness-raising. A legislative proposal for public procurement has already been made<sup>47</sup>. The Commission will also facilitate co-operation between manufacturers, local and regional authorities, and other entities with large vehicle fleets and car-sharing organisations, with a view to encourage these buyers to collectively acquire less polluting and energy-efficient vehicles at lower cost through joint procurement actions and the exchange of information<sup>48</sup>.
- The Commission will strengthen and improve existing EU-wide real-time traffic and travel information (RTTI) systems and traffic management during the period **2007-2012**<sup>49</sup>. Information and communications technologies will be increasingly used to reduce congestion and to improve safety and energy performance in the transport sector<sup>50</sup>.
- Further use of the environmental guidelines for State Aid rules will be considered in **2007**, with a view to accelerating market introduction of energy-efficient vehicles .
- **The Commission will propose in 2007 an amended Car Fuel Efficiency Labelling Directive (1999/94/EC)** with a view to changing the design of the fuel

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<sup>46</sup> COM (2005) 261, Proposal for a Council Directive on passenger car related taxes.

<sup>47</sup> Proposal for a Directive on the promotion of clean road transport vehicles (COM (2005)634).

<sup>48</sup> **The Commission will** consider action 2007-2012 on the energy efficiency of heavy-duty vehicles, aiming to reduce fuel consumption in heavy-duty road freight and bus passenger transport in a cost-effective manner. Possible measures will range from technical improvements of vehicles and powertrains to support for driver training.

<sup>49</sup> The Commission will adopt in 2007 the 3<sup>rd</sup> eSafety Communication, reporting on the Member States' implementation of eCall. eCall promotes rapid assistance and clearance of accident sites and thus reduced congestion through an automatic accident notification and location system. Congestion reduction is estimated to be as much as 20%. See section 2.2. of the Commission's 2<sup>nd</sup> eSafety Communication "Bringing eCall to Citizens" (COM(2005) 431 final).

<sup>50</sup> Communication on the Intelligent Car Initiative (COM(2006) 59 final) and 2<sup>nd</sup> eSafety Communication (COM)2005 431 final).

efficiency label, broadening it and harmonising it among Member States. "A" label status will be reserved for the 10 -20 % best performing cars, requiring the labeling scheme to be updated every 3 years. The scope of the Directive will be widened to include light commercial vehicles (N1 vehicles).

### 7.3.2. *Energy Savings through tyres and components*

Maintenance of correct tyre pressure and optimal rolling resistance can reduce fuel consumption by over 5% according to most estimates. Air-conditioning systems are usually not included in fuel efficiency testing and manufacturers thereby lack adequate incentives to improve efficiency. Therefore, **the following measures will be initiated by the Commission:**

- **A mandate for a recognised European Norm and possible international standard to measure tyre rolling resistance** will be issued in **2008** with a view to developing maximum rolling resistance limits, taking full account of safety requirements.
- **The Commission will work towards developing in 2007-2008, in collaboration with European and international manufacturers, measurement protocols and minimum efficiency requirements for automobile air-conditioning systems.**
- **A labelling scheme for tyres** will be proposed in 2008, based on recent studies and the standards used to measure rolling resistance and other impacts. .
- **The Commission will in 2008-2009 facilitate voluntary agreements on accurate tyre pressure monitoring systems for existing road vehicles**, and take other measures to ensure accurate tyre pressure in co-operation with the transport fuel supply industry and other energy suppliers.
- **The Commission will consider in 2008-2009 compulsory fitting of tyre pressure monitoring systems on all new road vehicles.**

### 7.3.3. *EU integrated approach for urban transport*<sup>51</sup>

The Commission's recent Strategy on Urban Environment<sup>52</sup> builds on the premise that 80% of Europeans live in an urban environment. Urban transport accounts for 40% of CO<sub>2</sub> emissions of road transport and up to 70% of other pollutants from transport. The EU is in need of **an integrated approach for urban transport**. Energy savings of around 400 to 500 kg fuel per inhabitant annually are made in cities with a high modal

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<sup>51</sup> Energy efficiency will also be promoted in railways. The Commission will continue in 2007-2012 policy measures to improve the focus on costs of operators in the rail sector. The Commission is also keen to support the International Union of Railways' initiative on improving railway energy efficiency. Support for such activities will be considered through Community programmes in 2007. See [www.railway-energy.org](http://www.railway-energy.org)

<sup>52</sup> COM (2005) 718 final.

share of public transport, compared with cities relying mainly on the private car<sup>53</sup>. Urban and non-motorised transport provide a major source of energy savings potential.

- **The Commission will assess in 2007-2008 in the framework of a forthcoming Green paper on urban transport<sup>54</sup>, and propose as appropriate, a new approach to encourage the use of public transport modes and other alternatives such as non-motorised transport modes<sup>55</sup> in European cities.** This assessment will recognise the responsibilities of the local and regional authorities. The approach will also include video-conferencing, telecommuting and car-sharing. This paper will examine where, in full respect of subsidiarity, there is a consensus to implement joint solutions of European interest based upon the measures that have been successfully tested by Europe's most ambitious cities. Harmonisation, generalisation and/or coordination at European level will be sought. This might also include car-sharing, and telecommuting, as well as **harmonised rules and criteria for restricted traffic access zones** in central city areas to allow better environmental protection while respecting the principle of free movement<sup>56</sup>.

#### 7.3.4. *Changing driver behaviour*

- Because of the universality of drivers' education and its potential for reaching energy consumers, **the Commission will propose in 2008 through legislation harmonised requirements for promoting fuel efficiency in drivers education curricula.** This will be supported by Community-funded projects to encourage projects to promote energy-efficient and eco-driving in 2007-2012.

#### 7.3.5. *Improving energy efficiency in the aviation sector*

- While road transport is currently the key sector in terms of energy efficiency improvement potential, it is also important to address energy efficiency in other transport sectors and through the combined inter-modal use of different transport modes.
- **The Commission will propose during the period 2007-2012 greater use of the Single European Sky Air Traffic Management Research project (SESAR) as a means of improving energy efficiency through improved traffic management and logistics.** It will also continue its efforts to remove legal barriers in bilateral air service agreements to the application on a non-discriminatory basis of energy taxation to aviation fuel.

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<sup>53</sup> UITP (2005): Mobility in Cities Database project, 120 urban mobility indicators in 50 cities worldwide

<sup>54</sup> See also Cars 21 Final Report..

<sup>55</sup> A rough estimate of how much energy was saved by pedestrians and cyclists not driving a car or motorcycle for their journeys in EU-15 countries in 2000 gives us a staggering 8 mtoe.

<sup>56</sup> The Commission will also in 2007-2008 explore synergies between the promotion of non-motorised transport and action to reduce obesity as flagged up in its Green Paper on Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases.

- The Commission will consider in 2007-2012 market-based instruments it could envisage using for both the aviation and maritime sectors, without putting into jeopardy the overall competitiveness of either of these industries.
- In September 2005, the Commission adopted a Communication on reducing the climate impact of aviation<sup>57</sup>. Alongside the continuation of existing measures (including research into cleaner air transport, improved Air Traffic Management and efforts to remove legal barriers to kerosene taxation in bilateral agreements), the Communication **recommended the inclusion of aviation in the EU Emissions Trading Scheme (Directive 2003/87/EC)**, which could incentivise aircraft fuel efficiency. Following on from this, and analysis, **the Commission is considering putting forward a legislative proposal** to this effect by the end of 2006 or the beginning of 2007.

#### 7.3.6. *Improving energy efficiency in the maritime sector*

- **The Commission will** explore in 2007-2008 the potential for optimising hull cleaning of ships to reduce their resistance. It will also continue in 2007-2012 to support the use of the International Maritime Organisation (IMO) work on energy efficiency, including the IMO index for measuring improvements.
- **Following on from its Recommendation on the use of shore-side electricity, the Commission will** monitor the use of shore-side electricity within the Community and consider in 2008-2009 further measures as required to realise the energy saving benefits it can offer.
- The Commission will promote **short sea shipping** and **the motorways of the sea**.

#### 7.3.7 *Improving energy efficiency in rail transport*

- Energy efficiency in the rail transport sector will be promoted in a number of ways, including by the thorough implementation of the existing legal framework addressing rail transport in 2007 – 2012.

### 7.4. **Financing energy efficiency, economic incentives and energy pricing**

A well functioning capital market, viable contractual forms, correct pricing and different financial and tax incentives are prerequisites for improving energy efficiency in a cost-effective manner. Further, the removal of institutional barriers and regulatory failures are necessary. The Commission considers that steps are necessary to facilitate the financing of energy efficiency and also to ensure a targeted and coherent use of taxation.

Measures to ensure the proper use of co-financing such as the EU Cohesion and Structural funds, EBRD funding, EIB Group, IFIs, and public-private partnerships are also important to leverage private sector investments for energy efficiency. Increased

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<sup>57</sup> COM(2005)459 final.

institutional capacity is needed to ensure the proper use of available funding. In this regard, the following key measures will be implemented:

#### *7.4.1. Contracting forms for energy efficiency*

- **The Commission will seek to identify and remove in the Member States remaining legal barriers to the use of shared- and guaranteed savings, third-party financing, performance contracting and similar financing models often used by Energy Service Companies.** A study will be carried out in **2007** on Member State and candidate country legislation to identify remaining barriers and recommend further measures. Standardised monitoring and verification protocols will be developed in **2007 - 2009**, as well as simplified and standardised contract models, designed to improve their quality and wider use.

#### *7.4.2. Clearing houses for information and bundling of small investment projects*

- **In 2007-2009, local revolving funds and other instruments will be developed or adopted to be financed by EBRD, EIB Group, Structural and Cohesion Funds** and private banks, each affiliated with a local information clearing house. These funds will combine capacity building and performance-related grants with commercial sources of finance, drawing on existing models such as the EBRD's energy efficiency credit lines in Bulgaria<sup>58</sup>, and the new International Energy Efficiency Financing Protocol (IEEFP). Priority areas will be installation and building companies, as well as enterprises and households implementing energy savings projects.

#### *7.4.3. Financing facilities for SMEs and ESCOs and for housing*

- **A framework will be considered and further developed in 2007 for public-private partnerships with EBRD, EIB Group and other IFI funding** to attract more equity, including venture capital applications for new energy-efficient technologies in the EU, especially for SMEs and ESCOs and other enterprises offering energy services.
- **The Commission will in 2007-2012 promote the use of grants and other public-private financial measures, including funds, for SMEs and the public sector to encourage the use of energy audits and specific energy efficiency investments identified in energy audits.** If audits lead to implementation of measures, part of the loans may be transformed into a grant. EBRD, EIB Group and EU Structural and Cohesion Funds will be considered for participation. These measures will also be used to improve the possibilities for the more intensive use of the Structural and Cohesion Funds for energy efficiency investments, including the housing sector in new Member States, in particular multi-family and social housing. In addition, the Commission will promote networking among Member States and regions to ensure financing of best practices in energy efficiency.

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<sup>58</sup> Cf. PHARE Energy Efficiency Co-financing Scheme, 1998-2008.

- **The Commission will in 2007–2012 encourage the use by SMEs of Green Investment Funds** co-financed by the Competitiveness and Innovation Framework Programme 2007 – 2013<sup>59</sup> for the development and promotion of eco-innovations.

#### 7.4.4. *Tax credits for production of energy-efficient products*

- **The Commission will consider in 2007 the costs and benefits of using tax credits as incentives for enterprises on the one hand, to promote the increased production of certified (e.g. with EU labelling scheme) energy-efficient appliances and equipment, and for consumers on the other, to promote the purchase and increased use of such appliances and equipment.**

#### 7.4.5. *Taxation, rebates and feebates in an incentive framework*

- **The Commission will prepare in 2006-2008 a Green Paper on indirect taxation** as a way to enhance EU policy implementation, including energy. It will analyse the possibility better to link taxation to policy objectives such as environmental aspects, thus allowing for better targeted tax differentiation in *inter alia* the Energy Tax Directive.<sup>60</sup>
- **The Commission will review in 2008 the Energy Tax Directive** in order to strengthen the links between taxation and EU policy objectives.
- The Commission will propose in **2007** special tax arrangements for commercial diesel, aiming at narrowing excessive differences in tax levels between Member States. This proposal should increase energy efficiency in the transport haulage sector (because of less “tank tourism”).
- The Commission will encourage quick adoption by the Council of its proposal on passenger car taxation<sup>61</sup>.

### 7.5. **Changing energy behaviour**

Behavioural change is brought about through increased public awareness and information, through dedicated and regular education and training. It is also achieved through energy advisors, energy audits and related methods. Information campaigns and advice are considered both a way to improve implementation of the legislative framework and to change behaviour and lifestyles related to energy consumption and energy efficiency. According to results from stakeholder consultations and debates, the EU is looked upon to provide leadership and to ensure objective and reliable information.

The efficient use of energy requires factors that motivate, facilitate and reinforce rational behaviour. Institutional capacity, awareness, clear, credible and accessible information on energy-using technologies and techniques as well as the related

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<sup>59</sup> COM (2005) 121 final.

<sup>60</sup> 2003/96/EC.

<sup>61</sup> COM (2005) 261, Proposal for a Council Directive on passenger car related taxes.



financial and environmental benefits are important predisposing elements for rational market behaviour. They also serve to mobilise actors on the energy market. Institutions, standards of conformity, labelling of appliances, buildings and vehicles help to ensure full information, knowledge and rational decisions.

In order to achieve its objectives in the area of changing energy behaviour, the following measures will be taken:

#### *7.5.1 Leadership by Example: The EU Institutions, EMAS<sup>62</sup> and Public Procurement*

The European Commission and the other EU Institutions will **take the lead in improving energy efficiency, demonstrating new, energy-efficient technologies** in their buildings, vehicles, office supplies and other energy-using equipment, and **adopting procurement guidelines for their services**. Using and demonstrating best available technologies and techniques can influence behaviour and energy in a cost-effective way.

**EMAS** was established by Regulation (EC) No 761/2001 and further developed by subsequent recommendations and decisions. EMAS allows voluntary participation by public and private organisations and provides them with guidance on establishing an environmental management system capable of demonstrating full compliance with environmental legislation and continuous improvement of environmental performance. Additionally, public reporting, employee involvement and flexibility make EMAS a powerful tool.

- **By the end of 2007, 29 of the European Commission's 65 buildings in Brussels will be EMAS certified.** All Commission-owned buildings will be certified by the end of 2009. It will be proposed to extend EMAS certification to all other EU Institutions by 2010.
- **The Commission will propose in 2007 in an amended regulation a revised EMAS** with a stronger focus by participating organisations on the key environmental priorities of the European Union, including energy efficiency.
- **A Commission Decision** will be adopted by end 2008 **to provide regularly updated energy-efficiency procurement guidelines** to facilitate Commission procurement, in line with requirements in Member States<sup>63</sup>. The Commission will also ensure that all **new energy-efficient technologies in Commission premises are accompanied by information to inform the public of its benefits**, using labelling schemes and information campaigns and programmes.

#### *7.5.2 Energy Management for Industry, transport, SMEs and the Public Sector*

In non-energy-intensive industries, SMEs and in the public sector there is a saving potential of over 30% in cross-cutting technologies such as lighting, motor systems,

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<sup>62</sup> Eco-Management and Audit Scheme, [http://europa.eu.int/comm/environment/emas/index\\_en.htm](http://europa.eu.int/comm/environment/emas/index_en.htm)

<sup>63</sup> As required by Directive (2006/32/EC).

boilers, etc. Improved energy management practices are a cost-effective way of realising this potential. The following will be carried out 2007-2012.

- **Energy efficiency management schemes will be developed with co-financing from Community programmes and strengthened and complemented with additional tools.** These will build on the success of voluntary programmes and databases such as “GreenLight”<sup>64</sup>, “EuroDEEM”<sup>65</sup> for electric motors and “Motor Challenge”<sup>66</sup>. Priority areas will include **standardised energy audits, guidelines on how to promote energy-efficient products for enterprises and public authorities, best practice and benchmark guidebooks, and education and training plans for energy managers**<sup>67</sup>.
- **The Commission will publish a new Reference Document on energy efficiency in 2007** in the context of information exchange under Directive 96/61/EC. Energy efficiency data in IPPC and other existing sector-specific documents will be updated and improved.
- **Tools developed to assist stakeholders in improving energy efficiency will be placed in coherent frameworks**, linked through common portals, and promoted. The Commission’s **objective** will be to seek ways to ensure the **institutionalisation and mainstreaming** of these activities by increased financing from the beneficiaries and from commercial interests. The existing networks of national and local energy agencies and equipment trade associations already in place will be called upon to widen the area of replication and application of these tools. Energy Service Companies and public-private financing partnerships will be encouraged to help implement and finance the identified savings opportunities.

### 7.5.3. *Public Education and Energy Efficiency*<sup>68</sup>

The formal education system is one of the best routes to reach and influence energy consumers and teach them about their energy choices. Funded pilot projects and incentives will help to introduce educators and educational authorities to the tools needed to reach out to teachers, students and other stakeholders to raise awareness on energy matters, motivate and mobilize. Therefore, the Commission will take a number of measures in this area:

- **Selected funded pilot projects and programmes will be mainstreamed and institutionalised 2007-2012 as appropriate to help introduce educators and educational authorities** to the tools needed to reach out to teachers, students and other stakeholders to raise awareness on energy efficiency, to motivate and to mobilize.

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<sup>64</sup> [www.eu-greenlight.org](http://www.eu-greenlight.org)

<sup>65</sup> <http://energyefficiency.jrc.cec.eu.int/eurodeem/index.htm>

<sup>66</sup> [www.motor-challenge.eu](http://www.motor-challenge.eu)

<sup>67</sup> The Commission will present by the end of 2006 or beginning of 2007 an Environment Programme to increase the environmental performance of SMEs (SME-Environment). Co-funded by Life+ and CIP, it will include an energy efficiency toolkit for SMEs.

<sup>68</sup> EU and Member State competences in curricula are described in Article 149 (basic education and youth) and Article 150 (vocational education) of the Treaty.

- **The Commission will propose a recommendation in 2007 developing the European energy security and climate change dimensions in the area of national education curricula**, while giving priority to using Community programmes to provide practical measures such as information material and teaching guidelines, and using networks such as *ManagEnergy*<sup>69</sup> to help disseminate them.
- In its vocational training policy, the Commission, in co-operation with the European Centre for the Development of Vocational Training (Cedefop)<sup>70</sup> **will consider in 2008 a vocational educational training initiative to facilitate the adaptation of curricula to the changing importance of energy efficiency and energy-efficient technology**, while fully respecting the responsibility of the Member States for the content and organisation of vocational training. One objective of this initiative is, at an early stage, to expose future installers and technicians to the availability and proper maintenance of new, energy-efficient technologies.

#### 7.5.4. *Behaviour, technological development and information and communications technologies (ICT)*

Behaviour and consumer demand play an important role in determining technological development and pathways. Influencing behaviour today can thus have a potentially strong impact on technologies that are developed in the future, placing additional requirements on energy-efficient technologies.

ICT can also play an increasingly important role in improving energy efficiency. This is true for end uses in buildings, in industry and in transport, as well as for in energy transformation.

#### 7.5.5. *National Energy Efficiency Action Plans*

- **National Action Plans will be used i.a. to monitor progress, report on results and ensure proper enforcement and compliance of Community energy efficiency legislation**<sup>71</sup>. The Commission will provide reporting templates and guidelines to the Member States to use with their National Energy Efficiency Action Plans beginning in 2007 and continuing through 2012. These will specify reporting obligations for EU energy efficiency legislation, measurement and verification of energy efficiency improvements for meeting savings targets, and information on national enforcement mechanisms for energy efficiency laws and regulations. These instruments shall be reviewed by the Commission in regular reports prepared six months after Member States have submitted their national Energy Efficiency Action Plans. Progress and shortcomings will be communicated to the Member States. Reference to this progress will also be made in the regular Strategic Energy Reviews<sup>72</sup>.

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<sup>69</sup> <http://www.managenergy.net>

<sup>70</sup> Council Regulation (EEC) No 337/75 of 10 February 1975 establishing a European Centre for the Development of Vocational Training.

<sup>71</sup> Required by Directive 2006/32/EC.

<sup>72</sup> COM (2006) 105 final of March 2006.

#### 7.5.6. *Sustainable Energy Europe (SEE) Campaign: raising public awareness*

The Sustainable Energy Europe Campaign is a broad public awareness campaign developed by the Commission. It has a large potential for reaching out to and influence actors on the energy market, both consumers and producers of energy and those working with energy-using equipment and infrastructures. To increase its impact, additional measures will be taken.

- **SEE will create and operate new communication and networking activities** with associated working groups. By focusing on specific groups working with energy, the programme will increase its.

#### 7.5.7. *National, Regional and Local Energy Agencies Working Together*

**The national energy agencies, through EnR<sup>73</sup> and the over 350 regional and local energy agencies, through ManagEnergy, will participate in elements of this Action Plan between 2007-2012.** Measures that lend themselves to implementation at local and regional level, such as dissemination of information on good and best practices and benchmarks, information on the use of **cohesion, structural and rural development funds**, programmes *inter alia* for the **training and education** of energy advisors, sales personnel and other actors will be placed in a broader framework programme and mainstreamed.

#### 7.5.8 *Energy efficiency in Member State Schools*

In addition to providing the institutional framework for education and training, schools also provide an opportunity to develop an understanding of practical issues related to energy efficiency, such as energy management, improving energy performance and optimal allocation of energy resources. For this reason, the Commission supports projects related to energy efficiency that can be carried out in a school environment.

- The Commission will in 2007 – 2008, with support from the Sustainable Energy Europe Campaign and the Intelligent Energy-Europe Programme, organise a competition in each of the Member States for the purpose of awarding a prize to the school considered to be the most energy efficient, according to a number of selection criteria. Among these criteria will include how well the school's energy systems are managed, what progress has been made in improving energy efficiency, the general energy performance of the school and the level of knowledge of energy efficiency and sustainability of the students. A European-wide prize will also be considered.

#### 7.5.9 *A Network of Mayors*

- A “Covenant of Mayors” representing 20-30 large, pioneering European cities, together with the Commission, will be created in 2007, based on a Memorandum of Understanding on Energy Efficiency. It will build on a number of existing

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<sup>73</sup> European Energy Network. Association of national energy agencies.

initiatives, including Civitas<sup>74</sup>, and create permanent networks with a view to exchanging best practices. The question of financing will also be addressed. The Commission will issue a Guidance document on sustainable urban transport plans as announced in the Urban Strategy.

#### **7.5.10. Intelligent Energy-Europe Agency (IEEA)**

**The Intelligent Energy-Europe Agency (IEEA) will facilitate the implementation of** the Action Plan, in co-operation with Member State governments and energy agencies. The unique competences of the IEEA and its position in the policy and implementation chain will continue to play an important role in ensuring a full and ambitious implementation of Community energy efficiency policy.

The Agency will also promote as appropriate the launching of projects related to existing and forthcoming Community legislation, in cases involving most or all Member States, EEA and Candidate Countries, between 2007 and 2012.

### **7.6. International partnerships**

Energy efficiency is very much a global issue. Countries around the globe are interconnected through international trade, through development policy and by international agreements and treaties. These same instruments can be used to increase the application of energy-efficient technologies and techniques not only in the EU but abroad.

#### *7.6.1. An International Framework Agreement on Energy Efficiency*

- **The Commission will in 2007 launch an initiative for an international framework agreement on energy efficiency**, involving both developed and developing countries. This will be part of a global effort to mitigate climate change and secure energy supplies. This will be done in collaboration with the UN, G8, International Energy Agency, the World Trade Organisation, the World Bank, the EIB Group, the EBRD and other institutions. Through it will be developed a group of nations, organizations and enterprises with mutual self-interest covering many aspects of an energy-efficient world economy, including standardization, statistical data, measurement of energy efficiency improvement, monitoring and evaluation, labeling and certification, energy audits, stand-by losses, codes of conduct, best available technologies and other aspects. Countries expected to participate will include Brazil, China, India, Japan, Russia and the United States. Others may be considered. A Memorandum of Understanding will be sought.
- **Cooperation and sharing of measurement methods** used in setting minimum efficiency requirements will be increased in 2007-2012 under the agreement to the extent possible. At least for globally traded products, harmonised measurement methods shall be developed to promote trade in more efficient equipment and facilitate the widespread adoption of these technologies. Test methods developed as European Norms (EN) as well as those developed by international

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<sup>74</sup> Programme in the RTD Framework Programme to help cities to achieve a more sustainable, clean and energy-efficient urban transport system.

standardisation bodies such as IEC and ISO may be selected as the basis for internationally recognized standards. Successful examples are the recently developed test methods for standby and external power supplies.

#### *7.6.2. Voluntary Agreements with export industries*

- **Agreements (commitments) with industrial branch organisations will be sought** in 2007 by the Commission to help provide more information on energy efficiency and energy demand management in countries receiving European technologies. The wider use of EU energy labelling will be promoted.

#### *7.6.3. Energy efficiency included in bi-lateral agreements on trade and energy supply*

- **The energy efficiency dimension of existing and planned international dialogues, trade agreements and other cooperation instruments and treaties will be strengthened in 2007-2012** to include more energy-efficiency considerations.

#### *7.6.4. Network For Dissemination of Information on Technologies*

- **An international network of local energy centres** abroad to disseminate information on energy-efficient and renewable technologies from the EU will be proposed in 2009. Existing institutions will be used. **A study will be carried out on the costs and benefits of establishing such a network.**