Manual of European Environmental Policy

The following pages are a section from the Manual of European Environmental Policy written by the Institute for European Environmental Policy.

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This section is the text of the Manual as published in 2012. It is therefore important to note the following:

- The contents have not been updated since 2012 and no guarantee is given of the accuracy of the contents given potential subsequent developments.
- The sections include links to external websites (e.g. to legal texts). These links continue to work as long as those links are not broken by those websites.
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Energy

Summary of the issues

The production and use of energy is a major source of environmental problems, with combustion of fossil fuels contributing to greenhouse gas emissions, acidification and waste. Nuclear energy production involves risk and results in as yet unmanageable waste. There is consequently widespread agreement for the need to reduce the impacts of energy use, by managing demand, improving efficiency and increasing the share of energy from renewable sources. Furthermore, effective responses to the environmental implications of the energy sector, including climate change and acidification, require a coordinated approach across different policy sectors.

Gross inland consumption of energy rose 5.2 per cent between 1990 and 2005 in the EU-27, with energy intensity falling 21.5 per cent and carbon intensity falling 9.7 per cent. In 2005, households and services accounted for 41.1 per cent of final energy consumption, transport for 30.9 per cent and industry for 28 per cent. Greenhouse gas emissions due to energy use show marked differences – from 1990 to 2005, households and services fell 7.9 per cent, industry fell 15.3 per cent, but transport emissions jumped 33 per cent, to be the highest single emitting sector in the EU-27.

Selected EU level initiatives

The issue of energy and the environment has been on the European political agenda since the 1980s. In a Resolution of 1986 (86/C241/01) the Council adopted the Community target of improving the efficiency of final energy demand by at least 20 per cent by 1995. Integrating environmental considerations within energy policy was the theme of two subsequent Commission documents. The first was entitled Energy and the Environment (COM(89)369) and, according to the Commission, was the first time that Community energy policy addressed environmental problems in a global way. The document described the impact of energy production/consumption on emissions of SO_x, NO_x and CO_2, and examined ways in which this impact could be reduced. The principal emphasis was on the need for greater energy efficiency. A second document, A Community Strategy to limit carbon dioxide emissions and improve energy efficiency (SEC(91)1744), proposed an EC level carbon/energy tax, a range of legislative and research measures to reduce energy consumption, and complementary national CO_2 reduction programmes. The document was issued jointly in October 1991 by the Commissioners responsible for energy and environment.

In addition, a number of more general initiatives were developed, such as an overall framework for energy policy, a Commission Strategy on Combined Heat and Power (COM(97)514) and a White Paper for a Community strategy on renewable energy (COM(97)599). The latter was to encourage the penetration of renewable energy into the market with the aim of doubling its use between 1996 and 2010 (6 per cent of total consumption in 1996, 12 per cent in 2010). The target was subsequently endorsed by a Council Resolution (98/C198/01). An energy efficiency strategy was adopted by the Commission in 1998 (COM(98)246). A number of other energy policy initiatives have been

launched by the Commission, specifically linked to the Kyoto Protocol under the UN Framework Convention on Climate Change.

Despite these various initiatives, EU energy policy had hitherto been limited in scope, with key environmental measures involving the SAVE energy efficiency programme, the ALTENER programme to promote renewable energy (both now incorporated in the 'Intelligent Energy – Europe' programme discussed in the section on Intelligent Energy Europe), legislation on energy labelling for household appliances (see section on energy labelling), energy standards for boilers, fridges and freezers (see section on energy-using products), and information on fuel economy and CO_2 from passenger cars (see section on CO_2 from passenger cars). These areas reflected the Community's limited competence in energy matters under the EC Treaty and the requirement for unanimity in the Council when voting on 'measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply' (Article 175 EC Treaty). However, increased policy attention to climate change has further expanded the ambitions of Community energy policy, as described below.

In October 1998, a Commission Communication on 'Strengthening Environmental Integration within Community Energy Policy' was adopted (COM(98)571). The document examined three priority areas for further progress: energy efficiency, increasing the market share for clean energy and reducing the environmental impact of energy resources. This document was followed by a Council integration strategy presented at the Helsinki Summit in December 1999. The strategy identified a number of priority areas for further action, including developing the internal energy market, promoting an increase in renewable energy sources, enhancing energy efficiency and internalising external costs. Three action periods were outlined: firstly, implementing existing programmes and actions; secondly, strengthening the strategy by defining actions up to the year 2002; and thirdly, responding to needs beyond 2002. The first stage was to be achieved by *inter alia* implementing the internal market Directives for electricity and gas, and developing actions under SAVE, ALTENER, SYNERGY (see section on Intelligent Energy Europe) (external issues) and SURE (nuclear sector). The Commission was also invited to propose further actions on energy efficiency and to analyse practical implications of establishing an emissions trading regime in the context of the internal energy market. An Annex to the strategy contained a preliminary set of indicators to support the process of integrating environmental considerations within energy policy, and these were subsequently adopted by the Council. The energy sector was relatively well represented in the environment-related structural indicators agreed by the Council in December 2001 prior to the Laeken Summit (see section on the Sustainable Development Strategy and Lisbon Strategy). As well as greenhouse gas emissions, the seven agreed indicators included the share of renewable energy in electricity generation, and the energy intensity of the economy (i.e. energy consumption per unit of GDP). This list was subsequently rationalized, however, and the focus reverted to greenhouse gas emissions and energy intensity of the economy.

In November 2000, the Commission published a long-awaited Green Paper (COM(2000)769) on security of energy supply. Although based firmly in the field of security of supply – the original preoccupation of Community energy policy – it also paid some attention to the environment, which gradually became recognized as the third core objective of the policy. In particular it stressed the importance of climate change as a driving factor in energy policy, signalled a need for a long-term rebalancing towards demand-side policies, and once more highlighted the advantages of energy taxation.

The first analytical phase of the European Climate Change Programme was completed in 2001 (ECCP – see the climate change policy overview section). This programme catalysed a broader range of energy-related measures, putting forward many proposed measures that have subsequently become legislation, for example, the energy performance of buildings (see section on the energy performance of buildings), more ambitious plans for renewable energy (see section on promoting renewable energy), the promotion of biofuels (see section on promotion of biofuels), a greenhouse gas emissions trading scheme (see section on the Emissions trading scheme), and cogeneration (see section on). A framework Directive setting eco-design requirements for energy-using products was published in July 2005 (see section on energy-using products). A further measure on energy efficient public procurement was also envisaged, as was a proposal for promoting energy efficiency at the level of final consumption and energy services, which was eventually adopted as Directive 2006/32/EC on energy end-use efficiency and energy services.

At the end of 2005, during a meeting at Hampton Court, European Heads of State and Government called for a 'true European Energy Policy'. As a consequence in March 2006 the Commission published the Green Paper 'A European strategy for sustainable and secure energy' (COM(2006)150). It contained six priority areas including 'An integrated approach to tackling climate change'.

As a follow-up to the Green Paper, the Commission published the 'An Energy Policy For Europe' (COM(2007)1) in January 2007. This explicitly sought to address what was perceived to be the key challenges to the Community to the Community in this area: sustainability, security of supply, and competitiveness. In the opening paragraph of the communication, the Commission recalled that the early beginnings of the Community were based around the need for a common approach to energy (the 1952 Coal and Steel Treaty; 1957 Euratom Treaty), stating that in acting together to deliver sustainable, secure and competitive energy, the EU would be returning to its roots. In a speech in February 2007, the then Energy Commissioner Andris Pielbalgs, cast the energy package put forward by the Commission as 'the most wide-ranging reform of Europe's energy policy ever attempted, fundamentally changing the direction in which we are heading'[1]. An Energy Policy for Europe, contained what was in effect the first Strategic Energy Review. A second Strategic Energy Review was published in November 2008 (COM(2008)781), and a follow-up to this in July 2009 (COM(2009)361) focusing on measures completing the internal market for energy infrastructure and gas supply.

Recalling the communication 'Limiting Climate Change to 2°C – Policy Options for the EU and the world for 2020 and beyond' (COM(2007)2), published at the same time as An Energy Policy for Europe, the Commission argued that the EU's commitment to act on greenhouse gases should be at the centre of the new European Energy Policy, and this for three reasons (see section on climate change policy overview):

1. CO_2 emissions from energy make up 80 per cent of EU GHG emissions, reducing emissions means using less energy and using more clean, locally produced energy.
2. Limiting the EU's growing exposure to increased volatility and prices for oil and gas.
3. Potentially bringing about a more competitive EU energy market, stimulating innovation technology and jobs.

Thus the Commission proposed that the unilateral objective of a 20 per cent reduction of greenhouse gas emissions by 2020 over 1990 levels (with a view to moving to 30 per cent

given a suitable multilateral agreement) was brought into the heart of the EU's new energy policy as the strategic objective of that policy. (Note that this strategic objective (or target) was not meant to imply the abandonment of the threefold 'underlying' objectives of competitiveness, sustainability and security of supply. Rather they were to be taken as a whole, and with the action plan, as clear from the Commissioner's speech referred to above.) In order to achieve this, Europe would need to be transformed into a highly energy efficient and low carbon economy, nothing short of a 'new industrial revolution' would have to be catalysed, the shift to low carbon growth would have to be accelerated, and the amount of local, low emission energy produced and used would have to dramatically increase. To achieve this ambitious vision the Communication set out an action plan containing a set of seven interlinked measures (or key areas for action). These were based on seven main documents:

- An Internal Market Review and final conclusions of a Sectoral Competition Enquiry.
- An Action Plan on Energy Efficiency: 'Realising the Potential'.
- A Long Term Renewables Road Map and reports on renewable electricity and biofuels.
- A Communication preparing a Strategic Energy Research Initiative.
- The Priority Interconnection Plan.
- A Communication on Sustainable Power Generation from Fossil Fuels.
- The Illustrative Nuclear Programme.

A first area of intervention related to the Internal Energy Market, six measures were put forward: unbundling; enhancing the effectiveness of Regulation; measures relating to the transparency of energy company activities; an Energy Customers' Charter, aimed among other things at tackling fuel poverty; network security, and infrastructure. The Communication looked forward to the publication of legislative proposals as part of the third liberalization package, published in September 2007. Secondly, there were measures in concerned with solidarity between Member States with respect to security of supply for oil, gas and electricity. A third area concerned energy efficiency. In the speech referred to above, Commissioner Piebalgs asserted that 'of all the proposals put forward in the new European Energy Policy, efficiency [had] the potential to make the most decisive contribution to the EU's sustainability, competitiveness and security of supply'. The Communication did not put forward any new EU level proposal, but recalled the October 2006 Energy Efficiency Action Plan. It did, however, anticipate the development of a new international agreement on energy efficiency to bring OECD and key developing countries together to restrict the use of products failing to meet minimum standards and agree common approaches to save energy. This eventually became the International Partnership for Energy Efficiency Cooperation established in 2008. The fourth area of intervention concerned energy from renewable sources. The Renewable Energy Roadmap (COM(2006)848) was one of the seven documents accompanying An Energy Policy for Europe. In it, the Commission proposed a binding target of renewable energy in the EU's overall mix from 7 per cent to 20 per cent by 2020, and that targets beyond 2020 should be assesses in the light of technological progress. In the Renewable Energy Roadmap, and the Biofuels Progress Report (COM(2006)845), the Commission also proposed a binding minimum target for biofuels of 10 per cent of vehicle fuels by 2020. National Renewable Energy Action Plans were also proposed. An Energy Policy for Europe envisaged new renewables legislative package for later in 2007 setting out a new architecture to ensure greater effectiveness. This was eventually to become Directive Directive 2009/28/EC. A fifth area of intervention was in the area of research, in particular in relation to low carbon and renewable technologies. The Communication therefore looked

forward to a European Strategic Energy Technology Plan to be put forward later that year. This was eventually published as COM(2007)723 with a follow up in 2009 (COM(2009)519) Moving towards a low CO_2 fossil future constituted a sixth area of intervention. Recalling its Communication on Sustainable Power Generation from Fossil Fuels (COM(2006)843) published at the same time as An Energy Policy for Europe, the Commission envisaged starting work in 2007 to design a mechanism to stimulate the construction and operation by 2015 of up to 12 large-scale demonstrations projects as well as providing a clear outlook on when coal- and gas-fired plants would be required to have CO_2 capture and storage. Finally, the Communication asserted that nuclear is one of the cheapest sources of low carbon energy presently produced. It reiterated that it is for Member States to choose whether to have nuclear energy or not. The Nuclear Illustrative Programme (COM(2006)844) published along with An Energy Policy for Europe, foresaw the role for the Community to develop further, in conformity with Community law, the most advanced framework for nuclear energy in those Member States that choose nuclear power, meeting the highest standards of safety, security and non-proliferation as required by the Euratom Treaty. It recognized that nuclear power raises important issues regarding waste and decommissioning and, therefore, nuclear waste management and decommissioning should also be included in future Community policy. To this end, the Commission proposed to establish an EU High Level Group on Nuclear Safety and Security with the mandate of progressively developing common understanding and, eventually, additional European rules, on nuclear security and safety.

While an Energy Policy for Europe was under development, so was the Lisbon Treaty which was signed on 13 December 2007 and entered into force on 1 December 2009 (see section on Environment in the Treaties). The Lisbon Treaty introduced an energy chapter in the TFEU recognizing powers of the EU to develop an energy policy. Previously, the EU had the competence to adopt energy measures under various and different provisions were scattered throughout the EC Treaty (such provisions included Article 95 TEC concerning the internal market, Articles 154–156 TEC for trans-European networks, Articles 81–88 TEC concerning competition and Article 175 TEC for the adoption of energy measures adopted for the purposes of environmental protection). However, these did not explicitly recognize any EU competence on energy issues. The new energy chapter made it possible for the EU to develop a more strategic and harmonized energy policy to be implemented by the Union as a whole. Article 194 of TFEU (1) set up the policy framework of the EU energy policy and contained four objectives guiding its development[2] : 'In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:

- ensure the functioning of the energy market;
- ensure security of energy supply in the Union;
- promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
- promote the interconnection of energy networks'.

In March 2007, the European Council adopted an Action Plan for the period 2007–2009 as a milestone in the creation of an Energy Policy for Europe and a basis for further action. The Action Plan was based on the Commission's communication An Energy Policy for Europe, and attached as an Annex to the Presidency Conclusions[3] . The Council called on the Commission to submit proposals requested in the Action Plan as speedily as possible. Moreover, the Council stated that, in the light of the integrated approach to climate and energy policy, the Energy Action Plan would be kept under regular review. The European

Council would, on an annual basis, examine progress made and results achieved in implementing the EU's energy and climate change policies. The Commission was invited to put forward an updated Strategic Energy Review in early 2009 as a basis for a new Energy Action Plan from 2010 onwards to be adopted by the Spring 2010 European Council.

In November 2008, the Second Strategic Energy Review: An Energy Security and Solidarity Action Plan was published by the Commission (COM(2008)781). It recalled the measures that had been put in place to deliver the '20–20–20' objectives: the third Internal Energy Market legislative package in September 2007, the proposals for revising the EU emission trading scheme for the period 2013–2020, a so-called effort sharing Decision for sectors not covered by the emission trading scheme and a new Renewable Energy Directive, all subsequently proposed in January 2008. It also recalled the Parliament's and Council's expressed desire to ensure that the proposals were adopted rapidly. The Second Strategic Energy Review proposed a five-point EU Energy Security and Solidarity Action Plan:

1. Infrastructure needs and the diversification of energy supplies.
2. External Energy relations.
3. Oil and gas stocks and crisis response mechanism.
4. Energy efficiency.
5. Making the best use of the EU's indigenous energy resources.

The Action Plan reiterated the paramount importance of energy efficiency, and observed that important progress had been made towards the 20 per cent energy efficiency objective, likely to ensure an improvement in energy efficiency of some 13–15 per cent. In order to close the gap, the Commission therefore tabled, together with the Action Plan, a new 2008 Energy Efficiency Package, including a revision of the Energy Performance of Buildings Directive. The Second Strategic Energy Review was endorsed by the Energy Council in January 2010 by the European Parliament and the Spring European Council in February 2010.

In January 2010, the Spanish Council Presidency launched a debate on energy policy with a view to informing a new Energy Strategy for Europe. This followed the First Strategic Energy Review of 2007, the Second Strategic Energy Review of 2008, and the Follow-up to the latter in July 2009. The consultation document, published by the European Commission 7 May 2010[4], is part of the preparatory work for a new Energy Strategy for Europe which the Commission aims to adopt in early 2011. Stakeholders were invited to provide their views by 2 July 2010.

The "stock-taking document" *Towards a new Energy Strategy or Europe 2011-2020* was prepared by DG Energy. According to this, the overall goal of European energy policy remains "to ensure safe, secure, sustainable and affordable energy for all". However, "the challenges of global energy security and energy geopolitics, slow progress in combating climate change at the global level, the urge to recover on growth and jobs in the EU and the need to invest in tomorrow's energy networks call for a new Energy Strategy to further deliver on those objectives". In the Commission's view, completing the internal energy market, achieving energy savings and promoting low-carbon innovation are "the main vectors to reach the objectives of competitiveness, sustainability, and security of supply".

As the title suggests, the document took stock of a certain number of issues for consideration for further action. It first recalled progress made since the Energy Action Plan of 2007 (which formed part of the First Strategic Energy Review), before identifying a collection of gaps and

shortcomings. In light of these, the document then set out the next steps, outlining key issues for the new energy strategy. These included a strong focus on improving the implementation of agreed policies and the full integration of the 2011-2020 strategy with the longer term perspective of decarbonising energy by 2050. It also set out a number of priority areas for the future strategy. These included:

- Modern integrated grids.
- Making progress towards a low-carbon energy system.
- Leadership in technological innovation.
- A strong co-ordinated external energy policy.
- Protecting the EU citizen.

In the area of "making progress towards a low carbon energy system", the Commission noted that a reduction can be made by reducing emissions, reducing energy needs, and by increasing the production and use of carbon-free energy. Most attention was brought to bear on the two latter options. The Commission recalled that while the 20/20/20 package includes a target of 20 per cent energy savings by 2020 as an indicative overall target, there are no individual targets on Member States. Within the framework of the new Europe 2020 Strategy (see section on the Sustainable Development Strategy and the Lisbon Strategy), the Commission is discussing with Member States how these could be determined as a way of monitoring progress towards the EU common objective, and as a way of adjusting national strategies. Parallel to this the Commission had also embarked on the preparation of "a new framework for energy efficiency."

In the area of "increasing the production and use of carbon-free energy" the Commission's stock-taking document assumed that "there is an urgent need to replace aging power generation capacity." It also referenced the conclusions of the Second Strategic Energy Review that nearly two-thirds of European electricity generation could be low carbon in the early 2020s (from the current level of 44 per cent), provided that investment decisions were taken rapidly. While the stock taking document was careful to note that this would require a massive expansion of energy from renewable sources, it was also clear that nuclear was assumed to be part of the mix "for Member States that choose to have this source in their energy mix."

On 10 November 2010 the Commission published 'Energy 2020 – A strategy for competitive, sustainable and secure energy' (COM(2010)639). In the Communication, DG ENER positioned the energy test as one of the greatest challenges that Europe has to face. It also conveyed a certain urgency: the price of failure is too high; despite the importance of energy policy aims, there were serious gaps in delivery; Member States' energy interdependence requires more European action; Europe should build on what it has achieved and be bold in its ambition; far-reaching changes in energy production, use and supply are urgently needed. Against this background the Commission proposed five priorities:

1. Achieving an energy efficient Europe (four actions): tapping into the biggest energy-saving potential – buildings and transport; reinforcing industrial competitiveness by making industry more efficient; reinforcing energy efficiency in energy supply; and finally, making the most of the National Energy Efficiency Action Plans.
2. Building a truly pan-European integrated energy market (four actions): timely and accurate implementation of the internal market legislation; establishing a blueprint for the European infrastructure for 2020-2030; streamlining permit procedures and

market rules for infrastructure developments; and finally, providing the right financing framework.

3. Empowering consumers and achieving the highest level of safety and security (two actions): making energy policy more consumer-friendly; continuous improvement in safety and security.
4. Strengthening Europe's leadership in energy technology and innovation (three actions): implementing the Strategic Energy Technology Plan (SET Plan) without delay; the launch by the Commission of four large scale projects (on smart grids; on energy storage; on large-scale sustainable biofuels production; and on providing cities, urban areas and rural areas with ways of making greater energy savings); the final action is aimed at ensuring long-term EU technological competitiveness.
5. Strengthening the external dimension of the EU energy market (four actions): integrating energy markets and regulatory frameworks with the EU's neighbours; establishing privileged partnerships with key partners; promoting the global role of the EU for a future of low-carbon energy; and finally, promoting legally binding nuclear-safety, security and non-proliferation standards worldwide.

Immediately following this, on 17 November 2010 the Commission published 'Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network' (COM(2010)677). This defined a limited number of EU 'priority corridors'. Based on these, a number of concrete projects of European interest will be identified in 2012. The intention is that such projects will in turn benefit from financing and faster building permits. This latter is to include a time limit for final decision 'while ensuring full respect of environmental legislation and public participation'. In the electricity sector four priority corridors were identified:

- An offshore grid in the Northern Seas and connection to Northern and Central Europe to transport power produced by offshore wind parks to consumers in the big cities and to store power in the hydro electric power plants in the Alps and the Nordic countries.
- Interconnections in South Western Europe to transport power generated from wind, solar, hydro to the rest of the continent, including Spain-France interconnections.
- Connections in Central Eastern und South Eastern Europe, strengthening the regional network.
- Integration of the Baltic Energy Market into the European market.

In the gas sector, three priority corridors were identified:

- Southern Corridor to deliver gas directly from the Caspian Sea to Europe to diversify gas sources.
- Baltic Energy Market Integration and connection to Central and South East Europe
- North-South corridor in Western Europe to remove internal bottlenecks.

The Commission estimated that about €200 billion of investments will be needed for gas pipelines and power grids to 2020. The Communication anticipated that some €100 billion will be delivered (on time) by the market alone, while another €100 billion will require public action on permitting and levering necessary private capital.

On 8 March 2011, the Commission published the Energy Efficiency Plan 2011 (COM(2011)109). On the same day, the Commission also published a Communication setting out a roadmap for moving to a competitive low carbon economy in 2050 (See section

on Overview of EU policy: climate change). In both Communications, the Commission observed, that while the EU is on track to meet the overall greenhouse gas emission reduction goal of 20 per cent, as well as the renewable energy objective of 20 per cent, at present the EU is set to achieve only half of the objective to reduce final energy use by 20 per cent by 2020. However, implementation of the Energy Efficiency Plan 2011 would allow the EU not only to deliver on exiting policy commitments under the climate and energy package by meeting the energy savings target, but also move closer the conditional objective of 30 per cent, achieving a 25 per cent overall greenhouse gas emission reduction by 2020. The Energy Efficiency Plan 2011 contained seven central sections: on the public sector leading by example; three sections based sections on the building, industry, and transport sectors; a section on financing; a section on consumers; and finally a section on a framework for national efforts.

While the Energy Efficiency Plan 2011 contained some valuable elements, it was clear that several of these would only be made concrete in the context of a legislative proposal later in the year. This was published by the Commission on 22 June 2011 (COM(2011)370). The proposed Directive establishes a common framework for promoting energy efficiency in the Union to ensure the target of 20 per cent primary energy savings by 2020 is met and to pave the way for further energy efficiency afterwards.

For end-use sectors, the proposed Directive includes measures that lay down requirements on the public sector, both as regards renovating the buildings it owns and applying high energy efficiency standards to the purchase of buildings, products and services. The proposal requires Member States to establish national energy efficiency obligation schemes for utilities. It requires regular mandatory energy audits for large companies and lays down a series of requirements on energy companies regarding metering and billing.

For the energy supply sector, the proposal requires Member States to adopt national heating and cooling plans to develop the potential for high-efficiency generation and efficient district heating and cooling, and to ensure that spatial planning regulations are in line with these plans. Member States must adopt authorisation criteria that ensure that installations are located in sites close to heat demand points and that all new electricity generation installations and existing installations that are substantially refurbished are equipped with high-efficiency combined heat and power (CHP) units (Member States should however be able to lay down conditions for exemption from this obligation in certain cases). The proposal also requires Member States to establish an inventory of energy efficiency data for installations undertaking the combustion of fuels or the refining of mineral oil and gas, and sets requirements on priority/guaranteed access to the grid, priority dispatch of electricity from high-efficiency cogeneration and the connection of new industrial plants producing waste heat to district or cooling networks.

Other measures proposed include: efficiency requirements for national energy regulatory authorities; information and awareness-raising actions; requirements concerning the availability of certification schemes; action to promote the development of energy services; and an obligation for Member States to remove obstacles to energy efficiency, notably the split of incentives between the owner and tenant of a building or among building owners.

Finally, the proposal provides for the establishment of national energy efficiency targets for 2020 and requires the Commission to assess in 2014 whether the Union can achieve its target of 20 per cent primary energy savings by 2020. The Commission is required to submit its

assessment to the European Parliament and the Council, followed, if appropriate, by a legislative proposal laying down mandatory national targets.

An important part of the motivation of the proposal was the weaknesses in the existing Energy Services Directive 2006/32/EC, and Co-generation Directive 2004/8/EC, and the more general need to tighten up and broaden the scope of the framework for the promotion of energy efficiency in the Union. These two Directives would therefore be repealed if the proposal were to be adopted, with the exception of provisions regarding the achievement, by 2017, of an indicative energy saving target of 9 per cent of final energy consumption in each Member State (under the Energy Services Directive). This was seen to facilitate progress towards the 2020 target. The Communication however stopped short of proposing binding targets. In the current economic climate, due attention would clearly have to be given to how the obligations placed on the public sector can be funded.

The Energy Council is expected to discuss the proposal on the 24 November 2011, and a report is expected to be adopted in the European Parliament committee responsible on the 28 February 2012. Voting on a final European Parliament position is expected in the second half of April 2012.[5]

As part of the preparation of an Energy Roadmap to 2050 (to be adopted towards the end of 2011), the Commission invited views around a set of seven questions during a public consultation between 20 December 2010 and 1 March 2011. The Energy Roadmap follows the Low Carbon Economy Roadmap 2050 adopted by the Commission on 8 March 2011 and will specifically focus on decarbonisation in the energy sector. The consultation did not put forward proposals, but rather invited views were invited on the following set of questions:

1. How to ensure credibility of the work.
2. The EU's position in a global policy context.
3. Societal challenges and opportunities.
4. Policy developments at EU level.
5. Milestones in the transition.
6. Key drivers for the future energy mix.
7. Additional thoughts and contributions.

Nearly 400 contributions were received; about half from organisations and half from individuals. Some half a dozen Member States sent a formal reply to the public consultation.[6]

Following the publication of the results of a public consultation on the Energy Roadmap 2050, the Energy Roadmap 2050 (COM(2011)885/2) was published by the Commission on 15 December 2011. This explored the challenges posed by delivering the EU's 'decarbonisation objective' of reducing greenhouse gas emissions to 80-95 per cent below 1990 levels by 2050 while at the same time ensuring security of energy supply and competitiveness (the other objectives of the EU's energy policy). The Roadmap contains four sections. An introductory section set out the nature and purpose of the document. A second section was dedicated to establishing that a secure, competitive and decarbonised energy system in 2050 is possible. The Roadmap set out seven scenarios for how the energy system may develop in the future (two 'current trend' scenarios and five 'decarbonisation' scenarios (high energy efficiency; diversified supply technologies; high renewable energy sources; delayed carbon capture and storage (CCS) and low nuclear uptake). These were used as a basis for putting forward ten 'structural changes' which will be required for energy system

transformation and which should, argued the Commission, help shape decarbonisation strategies today:

- Decarbonisation is possible and can be less costly than current policies in the long-run;
- Higher capital expenditure and lower fuel costs;
- Electricity plays an increasing role;
- Electricity prices rise until 2030 and then decline;
- Household expenditure will increase;
- Energy savings throughout the system are crucial;
- Renewable energy rise substantially;
- Carbon capture and storage has to play a pivotal role in system transformation;
- Nuclear energy provides an important contribution; and
- Decentralisation and centralised large-scale systems increasingly interact.

A third section set out the challenges and opportunities of moving from 2020 to 2050. This set out the technological dimensions of 'transforming energy systems', argued the need for 'rethinking the energy market', 'highlighted the desirability of mobilising investors through a unified and effective approach to energy sector incentives', drew attention to the importance of 'engaging the public', as well as of 'driving change at international level'.

In a final section the way forward to 2050 is outlined. This put forward ten 'conditions' which must be met to achieve the EU's decarbonisation goal of 85-95 per cent below 1990 levels by 2050:

1. Implement fully the EU's Energy 2020 Strategy (application of existing legislation and proposals under discussion on energy efficiency, infrastructure, safety and international co-operation to be adopted swiftly);
2. Make the energy system and society as a whole dramatically more energy efficient;
3. Particular attention to be given to the development of renewable energy, including timely consideration for 2030 milestones;
4. Higher public and private investments in R&D and technological innovation in order to speed up the commercialisation of low-carbon solutions;
5. Address regulatory and structural issues preventing the internal market from delivering its 'full potential';
6. Energy prices need to better reflect costs. Special attention must be paid to vulnerable groups in this context to avoid energy poverty;
7. More rapid progress on new energy infrastructure and storage capacities across Europe;
8. Strengthen safety and security framework for new and traditional energy sources;
9. Broaden and more coordinated EU approach to international energy relations, including 'redoubling work to strengthen international climate action'; and
10. In the context of the low carbon economy roadmap, define the 2030 policy framework.

On the basis of these 'conditions' the Commission promised to 'continue to bring forward initiatives' and to start with proposals on the internal market, renewable energy and nuclear safety during 2012.

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