

*Thorsten Diercks\**

## COAL IN CURRENT EUROPEAN UNION POLICIES — THE ENERGY PACKAGE OF JANUARY 2007

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### 1. Overview and main messages of the Energy Package

On 10<sup>th</sup> January 2007, the European Commission put forward a number of energy-related Communications. This so-called Energy Package of more than 1000 pages follows the Green Paper of March 2006 and the discussions carried out since then. It should form the basis of a common, integrated climate and energy policy, till 2050. The Commission stresses that all EU Member States face the challenges of climate change, increasing import dependence and higher energy prices. In this context, the Commission refers to the energy policy roots of the European Union, that go back to the signature of the ECSC Treaty in 1952.

At the Summit of EU Heads of State and Government in March 2007, the Energy Package was at the centre of discussions. The Council supported all the fundamental objectives of the European Commission (see below). The European Parliament will also take position with a series of decisions.

The Energy Package includes ten main documents (Tab. 1).

TABLE 1

**The main documents of the Energy Package**

AN ENERGY POLICY FOR EUROPE		
Renewable Roadmap	Sustainable Power Generation from Fossil Fuels	Internal Market for Gas and Electricity
Renewables in Electricity	Nuclear Safety and Security	Gas and Electricity Infrastructures
Biofuels in Transport		Strategic Energy Technology Plan

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\* European Association for Coal and Lignite (EURACOAL)

The Communication “An Energy Policy for Europe” contains an Introduction, an Overview and the main messages. It is proposed to develop a highly efficient and low CO<sub>2</sub> energy economy and to catalyse a “new industrial revolution”. The Commission underlines the perspective of reducing global Greenhouse Gas (GHG) emissions in 2050 by up to 50% compared to 1990, implying reductions in industrialised countries of 60 to 80% in order to limit the global temperature increase to 2°C compared to pre-industrial levels. Having this as a basis, a bunch of objectives is formulated, looking at the year 2020. A new commitment to achieve in any event at least a 20% reduction of GHG by 2020 compared to 1990 is suggested. Developed countries are asked to go for 30% reduction in the framework of international negotiations.

The greenhouse gas objectives are underlined by the proposal for a binding target of increasing the level of renewable energy in the EU’s overall mix from less than 7% today to 20% by 2020. Improved energy efficiency should also be brought about with a series of measures. The hope is to thereby achieve a 20% reduction of primary energy demand in the EU by 2020, despite challenging growth objectives.

- Greenhouse gas reduction in EU-27 of 20% (2020 compared to 1990) — objective of 30% to be proposed in international negotiations — aim of 50% reduction by 2050;
- 13% less energy use from now to 2020;
- 20% energy efficiency increase (from 1990 to 2020);
- 20% share of renewables in 2020; even more in electricity production.

This list already shows that first measures extend to 2020. For the period after 2020 structural changes and a drastic reduction of GHG are envisaged. There is no doubt that this must be connected with a lot of Research and Development.

The Commission makes it very clear that the EU must limit its external vulnerability to imported hydrocarbons and that growth as well as employment must be promoted, thereby providing secure and affordable energy to consumers. Objectives related to a secure and competitive energy supply have however not yet been formulated.

In the Communication on Sustainable Power Generation from Fossil Fuels: Aiming at near Zero Emissions by 2020, the Commission reveals its view how coal can contribute to the long-term EU energy future. This paper will be dealt with separately (see part 3 and 4).

## **2. Comment on the Energy Package from the coal industry’s perspective**

A general consideration of the texts shows that the Commission collected a huge amount of information and presented genuine ambitions in line with long-term concerns in order to develop a secure, sustainable and competitive energy supply. The Commission has indicated 2020 as deadline to achieve new objectives and to prepare for a long-term view

and future. These objectives are well-accepted by the public and the Member States. The consultations within Council show that they indeed support the medium-term objectives till 2020, particularly a binding target for renewables of 20% in 2020.

It would be important that European and national policy establish on this basis a long-term, stable framework in order to achieve security of energy supply, an affordable supply of energy and more sustainability. However, the Energy Package does not make clear how to distribute the burdens of far-reaching measures among the Member States. The Communications may lead to the Commission and the European Parliament claiming more competences in the field of energy policy. Especially coal-consuming Member States must be aware of potential disproportional burdens that the EU would put on them in the future.

Certainly, the objectives mentioned by the Commission push forward measures at a faster pace. It seems especially difficult to aim at reducing primary energy by 13% by means of improved energy efficiency by 2020 compared with today in the case of sustained industrial growth. Furthermore, the share of 20% of renewables in the energy mix during the same period will probably result in extremely high costs and require new solutions. If it proved possible to decrease primary energy demand as wished and to significantly increase the share of renewables, then a 20% reduction of CO<sub>2</sub> emissions compared with 1990 would appear possible.

The Commission established objectives only for sustainability, including Climate Protection as a major element. Precisely here however, European solutions are not sufficient, Climate Protection is on the contrary a global responsibility. Even the EU's most ambitious efforts to reduce GHG emissions are not sufficient to avoid global warming. EURACOAL therefore shares the Commission's view to combine wide reaching EU objectives with the introduction of similar internationally acceptable emission reduction objectives in other industrialised or industrialising regions of the world. Climate Protection can only be effective if at the same time the competitiveness of the EU industry as well as its security of supply are guaranteed. A close combination of "Climate — Home Affairs" with "Climate — Foreign Affairs" policies is inevitable.

### **3. The Communication on Sustainable Power Generation from Fossil Fuels: Aiming at near Zero Emissions from Coal after 2020**

For the coal industry, the specific and therefore the most important part of the Energy Package is the Commission's "Communication on Sustainable Power Generation from Fossil Fuels: Aiming at near Zero Emissions from Coal after 2020". The Commission refers to the growing demand for electricity and to the IEA expectations that worldwide, electricity produced from coal needs to be doubled by 2030. Without further measures, the CO<sub>2</sub> emissions from coal use would therefore increase significantly. Developing Clean Coal and Carbon Capture and Storage is therefore seen as crucial. Action will be required to catalyse international research and action on CO<sub>2</sub> Capture and Storage.

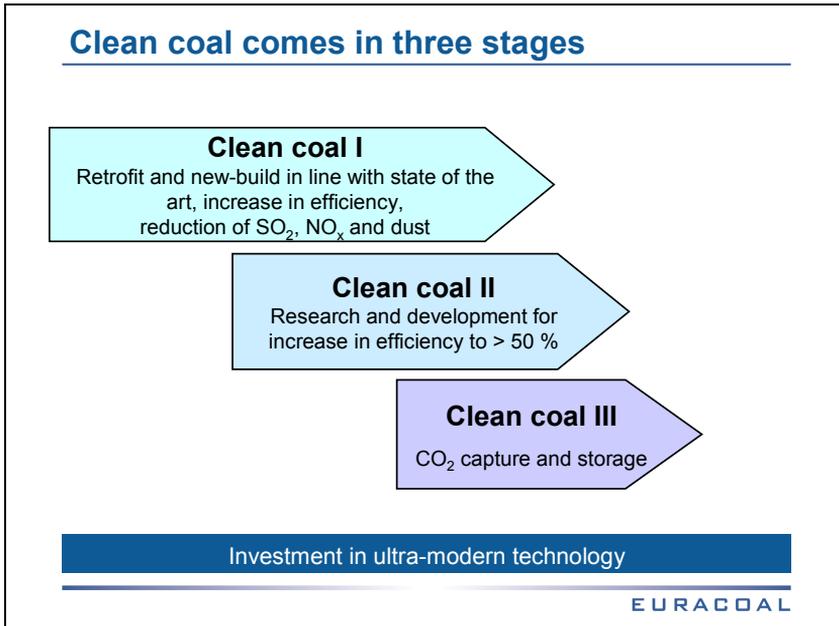
Key elements of the Communication are:

- Coal has major advantages. However, it “will remain a key contributor to the EU’s energy supply “only with technologies allowing for “drastic reduction of the carbon footprint of its combustion”. The global character of the energy and coal challenges is stressed.
- There is scope for substantial energy efficiency improvements as a precondition for Carbon Capture and Storage (CCS). But this is not sufficient in view of Climate Protection. Both efficiency and CCS are needed.
- CCS is to be developed industrially and deployed within 15 years. 10-12 demonstration plants to be expected in Europe by 2015 as announced by the TP ZEP. After that they will have to be operated and demonstrated for at least 5 years, to be continued in parallel by industry and the EU.
- CCS can probably deliver relatively cheap carbon reductions at acceptable costs. A structure to coordinate and adequately support industry-scale demos may be needed, even Joint Technology Initiatives or Joint Undertakings are mentioned.
- Capture readiness is an integral part of fleet modernisation to avoid a “non-CCS technology lock-in”. In this respect, the Commission wants to consider legally binding instruments as soon as possible, after a proper impact assessment.
- The economic and regulatory environment must reward low-carbon technologies. EU law must remove barriers and provide economic incentives. EU work on that will start in 2007; it may acknowledge CCS within the EU Emissions Trading Scheme.
- The Commission wants power plants with CCS to become “the business model of choice” for coal-fired power generation after 2020. It may propose incentives “to discourage traditional coal-based power generation” and binding measures for maximum allowed CO<sub>2</sub> emissions per kWh after 2020 and/or a timed phase-out of all non-CCS generation, e.g. by 2050. The EU will “evaluate what is the optimal retrofitting schedule... after the viability of Sustained Coal technologies is demonstrated”.

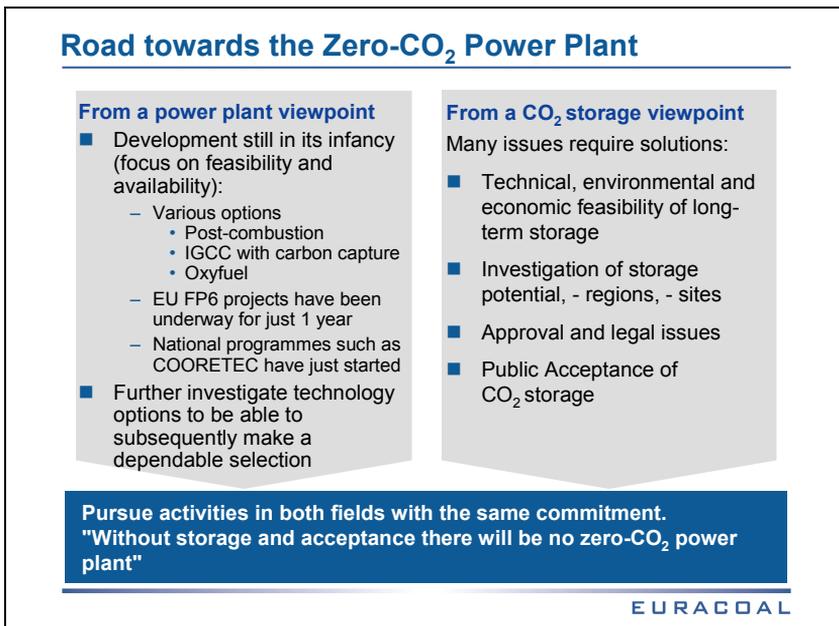
#### **4. EURACOAL’s comment on the Sustainable Fossil Fuels Communication**

The European Coal Industry welcomes the fact that the Commission describes the role of coal as an important element of the EU energy mix and that it aims to present the actions needed for the continued contribution of coal in Europe and worldwide. Major aspects of EURACOAL’s Clean Coal Concept (Fig. 1) have been taken on board. The Commission has accepted that Carbon Capture and Storage still require long periods of research and development (Fig. 2).

Even if the Communication clearly focuses on Carbon Capture and Storage, the Commission has acknowledged that energy efficiency improvements are necessary in order to significantly reduce CO<sub>2</sub> emissions resulting from coal utilisation in the medium-term.



**Fig. 1.** Major aspects of Clean Coal Concept



**Fig. 2.** road towards the Zero CO<sub>2</sub> Power Plant

The support to up to 12 demonstration installations in the 7<sup>th</sup> Framework Programme 2007–2013 is most important. However, the 7<sup>th</sup> Framework Programme funds available for these projects have been limited to a total amount of 400 million € over 7 years.

The European coal industry does not share the Commission’s fears that decisions to invest in coal-fired power plants could make the inclusion of CCS at a later stage very difficult or impossible. Therefore, it is not appropriate to consider building only capture-ready power plants as from 2010 or even later. This would interfere with existing plans. Furthermore, such an obligation would only be possible after defining the concept “capture-ready” and also after an objective and thorough evaluation.

The Technology Platform Zero Emission Fossil Fuel Power Plants (ZEP) and the Commission assume that CCS would not be commercially available for large power plants before 2020. Even if after this date, CCS were to be technically and commercially operational, not all existing power plants inevitably need to be retrofitted with CCS. Installations as well as locations could exist where top efficiencies (Fig. 3) are the best solution also in respect of resources protection. Eventual legal obligations to retrofit must not be decided before it is known which is the best technical solution in the framework of widespread CCS research. Without that, the consequences for the efficiency of power plants and the costs for power generation that are tied to it cannot be judged.

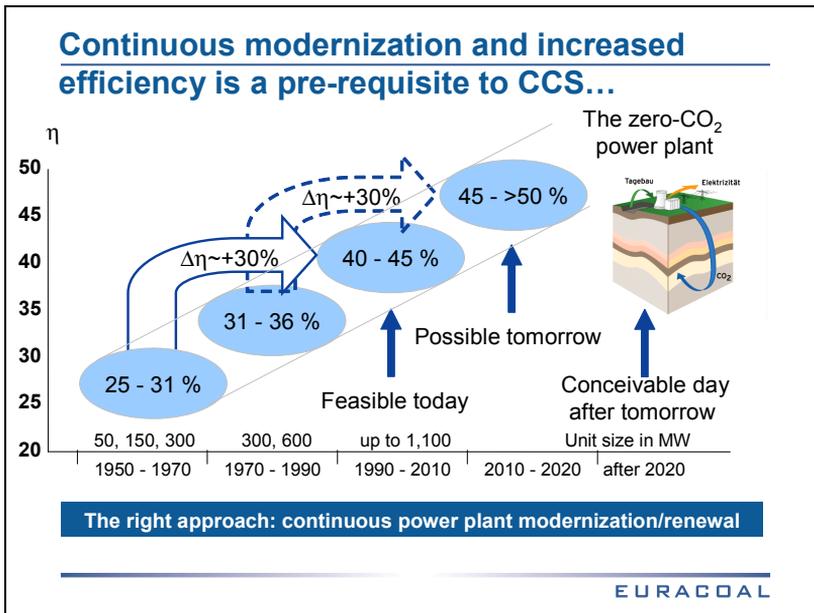


Fig. 3. Modernization and increased efficiency development

EU energy policy should not devalue highly efficient power plants in order to keep European electricity production without too many additional burdens compared to non-EU

units. Quite the contrary: The significance of lignite and hard coal for the security of energy supply in Europe requires that appropriate investment conditions also be created for the Clean Coal II Phase. A EUCETS after 2012 must guarantee investments in new, highly-efficient coal-fired power plants for a long period. EURACOAL asks the European Commission to now focus on R&D activities and on the development of a legal framework for CCS. After the presentation of a first draft by the Commission end of 2007, the legal framework for CCS should be adopted by 2010. Much earlier, already the EU and national competences regarding CO<sub>2</sub> storage shall be clarified. For example, the EU should state if they are going to create legislation on the possible conflicts between land owners and operators of storage sites or if they are going to leave this to the Member States.

The current, intense discussion of the potential for coal utilisation in the next decades has led to the issues concerning coal extraction being driven to the background. However, for the extraction of indigenous lignite and hard coal, an appropriate political and economic framework remains necessary. The extraction and transformation of energy can significantly contribute to local prosperity and employment. When burning indigenous coal, the added value of extraction, transformation and distribution remains within the EU. If oil or gas are used, about 75% of the price are needed to cover import costs.

For the indigenous production of coal it is important that the national and — if available — European legislation on planning maintain access to the reserves available. Reductions of coal mining areas in the context of regional planning as well as over burdening by the environment protection regulations have in the past often resulted in unnecessary delays and additional burdens for the mines. The location of reserves and the mobility of the mining operation when extracting raw materials result in particular challenges in comparison with other industrial sectors. This special situation is to be taken into account especially when creating the legal framework on environmental issues, for instance Waste legislation, Soil Protection legislation, and Water legislation.

## **5. Conclusions**

With the continuous modernisation of power plants, much better efficiency averages in power generation from coal and Carbon Capture and Storage, coal can make a major contribution to climate protection and to the security of energy supply as well as to an affordable supply of energy in Europe.

Reinforced research efforts of the power economy require a stable and sufficient legal framework not only for CCS power plants and storage but also security for investments in existing installations and for those to be built in the meantime. This particularly requires an Emissions Trading Scheme with a sense of perspective. Security for investments is a vital condition for continuous modernisation and improved efficiency.