Speech by Mr. Jacek PIEKACZ, Chairman of the Polish Clean Coal Technologies Platform and CEO of Vattenfall Poland, at an ITRE Committee public hearing on coal held on 9 November 2010 during the European Coal Days in the European Parliament, Brussels

Ladies and gentlemen.

In Europe, electricity production is mainly from four types of energy source:

- Gas that has quite low emissions, but is generally imported into the EU and carries political risks;
- Renewables are low-emission, but their production is intermittent and they require substantial subsidy;
- Nuclear energy, where the technology is fairly well developed, provides stability in energy systems, but nevertheless faces social acceptance issues;
- The fourth source of energy is coal, which is the subject of today's discussion and my presentation.

To begin with a brief reminder. Coal is a familiar fuel that has been used for years around the world. Its reserves are huge – according to analysis enough for a further 200 years of exploitation and are larger than the combined resources of all other available fuels. The power industries of many economies, including the largest and fastest-growing – such as the US, China and India, depend largely on coal.

Currently, 40% of the world's electricity is produced from coal – both hard coal and brown coal (lignite). In the EU this share is smaller. It is now about 28% and is gradually decreasing. It should be noted that there are several Member States, whose dependence on coal is significantly above average.

Coal can be an excellent source of energy because the use of coal in power generation offers certain benefits:

- Secure and reliable energy production using technology developed over 100 years.
- Ensures stability and provides flexibility in the energy system thus balancing other less stable sources, such as wind and distributed sources. With coal, you can adjust energy production to the demand of the system, so if, for example, the energy production from wind farms decreases, the drop in output can be flexibly compensated by coal, and vice versa.
- Coal allows storage of energy, because it can be stored safely for a long time.
- Power generation from coal is not dependent on weather conditions.
- There is a favourable distribution of coal resources across the world – huge resources lie in politically stable countries.

I want to emphasize that coal is a cheap fuel, which is used – and will be used by almost the entire world. So, if you drastically reduce the share of energy supply from coal, then energy prices for end consumers will be much higher.

I also want to make it clear that the use of coal in power industry does not preclude the development of renewable or nuclear energy. All types of energy production have advantages and disadvantages. European utilities – and ultimately consumers – need a proper balance of fuel types. A single-tract approach, particularly one focussed on renewable energy, will ultimately be detrimental and significantly more expensive.

So, coal has huge advantages, above all – accessibility, low price and stability of energy production. Unfortunately, coal also has a drawback – the CO_2 emitted during combustion.

Europe has set itself ambitious CO_2 reduction targets, and aims to lead on the global stage when it comes to fighting climate change. On the other hand, developing countries need energy and, with their further development, it is expected that their demand for energy will grow and I do not doubt that the share of fossil fuels will remain significant.

Coal will remain a key fuel in the world power industry for many decades, and Europe must do everything to ensure that this is not in conflict with the objective to limit emissions of CO_2.

Currently, EU climate and energy policy sees coal replaced by other forms of energy, mainly renewable energy. Investors are no longer planning coal plants, and many have suspended projects already planned.

No new coal-fired units will, in my view, lead to a reduction in the degree of stability of energy systems in Europe, because there is no other large-scale reliable energy generation, except gas and nuclear power. Gas and nuclear power are not universally available, so a balanced mix is called for across the EU.

The problem for the environment is not coal, but CO_2 emissions. So how do we reduce these? Well, this can be achieved through the following actions:

- Improved efficiency of electricity generation;
- Co-firing biomass with coal;
- Development of combined heat and power (CHP) or cogeneration; and
- Deployment of carbon dioxide capture and storage (CCS).

Briefly, I will discuss all these methods

The conversion of coal into electricity takes place with a global average efficiency of about 33%. This means that only on third of the energy extracted from the earth energy in the form of coal is converted into useful electricity. The end consumer gets even less due to losses in the transmission network. The efficiency of modern power units is about 43% for lignite and about 46% for coal. This means that if all power plants in the world were upgraded or replaced with modern plant, then a third less coal would be consumed for the same electricity output. And do not forget that engineers are constantly working to further raise the efficiency of the new blocks.

Co-combustion of biomass, which replaces coal with biomass, can reduce CO_2 emissions by up to 20%.

Huge potential for reducing emissions lies in cogeneration or CHP, because this technology allows the generation of electricity and heat, with a total efficiency of up to 90%. In 2009, the EU generated about 370 TWh of electricity from CHP, with energy savings equivalent to the annual energy demand of Austria.

However, the greatest reduction of CO_2 emissions can be achieved by the use of CCS technology – carbon dioxide capture and storage. This technology allows the capture of up to 90% of CO_2 emissions from conventional power plants. As you all know, the chain of CCS technologies are proven and used in various industries such as petrochemicals.

For CO_2 capture at power plants, the first pilot plants are already operating. Geological storage of CO_2 is practicable and safe, as evidenced by projects around the world.

A roadmap for the development of CCS technology is in place as is typical for the development of most new technologies, and our common task is to commercialize this technology. An intermediate step which confronts us now, is the construction of demonstration plants. Members of the European Parliament enacted regulations for the safe storage of CO_2 and regulations to ensure the funding of CCS demonstration projects in the EU.

Demonstration plants need to be built, to verify the legitimacy and viability of this technology. However, the process of preparing for the construction of demonstration plants goes too slowly, as if at a standstill.

Investors no longer say, “we will build a demonstration CCS plant”. They say, “we want to build and we will build, if the relevant national legislation is in place, if there is adequate financial support and if there is public acceptance”.

The lack of a clear legal framework, the financial crisis and the lack of social acceptance for investment in energy infrastructure have, over the last few years, drastically reduced investments in conventional energy projects. CCS demonstration projects are one of the victims of this escalating trend. A consequence in the EU may be less stable power systems. On a global scale, however, the fight against climate change may be lost. If CCS is not developed in Europe and if its costs are not significantly reduced, then there is little chance that developing countries will be interested in this technology.

Therefore, those energy companies ready to work towards the implementation of CCS need much more help. Without this support the technology will not be implemented in the coming years in the power sector, significantly increasing the cost of our goal to reduce CO_2 emissions by 2050.

It is necessary to offer multi-level support for CCS.

What is needed is strong political support.

The problem of security of energy supply for EU citizens and the European economy is a challenge not only for the energy sector, but more broadly – politicians, legislators, civil society, the whole economy. If we leave it to the energy companies themselves, the result will be that we will need to learn to live with restrictions in power supplies, at least in some countries.

CCS development is an opportunity to reduce emissions in third countries. Energy companies can be ambassadors of the EU in terms of sustainable energy production, but we cannot assume sole responsibility for developing the technology, which is to be eventually used mainly outside of the EU. Energy companies alone cannot convince the public of such a need and to accept the technology. Here, national governments, but also regional governments have important roles to play.

CCS development needs economic support.

After the announcement in 2007 of the EU’s policy on sustainable energy, it became a passion of many companies to work on CCS. Then came the financial crisis and the fall in prices on energy markets. Energy companies do not have sufficient excess funds to invest in CCS demonstration projects costing billions of Euros. Yet, and they are necessary and urgent, because the future of coal in Europe depends on the results of their implementation.

The huge investments in the energy sector in Europe, which took place from the 1950s to the 1970s, was usually with state support. In Europe, we currently have a new need for climate protection and replacement of ageing assets and infrastructure. This requires huge investments in each country. State support is needed again.

We need support in the legal framework for CCS.

EU legislation for CO_2 storage introduces long-term liabilities: of up to 50 years after closure, which – together with the period of operation of CO_2 storage sites – adds up to 80-90 years. This has cooled the enthusiasm of parties interested in the development of CCS. In some countries, it is assumed that financial security must be guaranteed in the form of cash deposits. Ladies and gentlemen, which company will want to freeze cash for almost a century?

To sum up, coal can and should be in the future an important part of the European energy mix, but it must be coal without CO_2 emissions. To achieve this, efforts must be carried out at the EU level and Member State level.

Urgent and significant support is needed from the EU for demonstration projects. These units must be built quickly, with proper financial support. I am afraid that the support currently offered is insufficient. Energy companies will not take such risks upon themselves. Companies should contribute to the costs of construction of demonstration plants, but their important contribution should be sites and a commitment to the agreed project, both during construction and operation.

Governments must adopt reasonable legislation for the storage of CO_2, without undue expenses falling on the companies, and give serious political support in order to obtain public acceptance for the transport and storage of CO_2.

Ladies and gentlemen – without meeting these conditions, there will be no CCS in Europe, and without CCS, in 20-30 years there will be no coal in the European energy mix. We will have then probably the most expensive energy in the world.

In global terms, unless we develop CCS in Europe and demonstrate that the technology is price competitive, thus proving that it is possible to burn coal while reducing CO_2 emissions, then there will be no chance that global emissions will fall significantly. Because one can be sure that, outside Europe, coal has a tremendous future. It will be burnt, whether we like it or not.