Analysis of the current state of the Polish Energy Policy[1]

The articles of this webdossier are part of a project of the GEF within the Heinrich Böll Stiftung's GET@EU project. This project aims at strengthening the dialogue on the impacts of the German "Energiewende" on other European states and to develop and promote new common visions for the construction of a European energy transition. The featured articles by authors from the EU Member States allow getting a better understanding of what is at stake in the national energy transition debates taking place all over Europe right now.

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The current situation in the Polish energy sector is difficult: After more than twenty years of transformation, the sector, protected by the State, is antiquated and requires reform. A situation has now been reached where significant parts of the productive capacity and the transmission infrastructures are obsolete. Poland has 2.2 times more intensive energy consumption than the EU 27. This situation can lead to a permanent energy deficit. The problem is the coal-based structure of the energy sector. This results in the highest external costs for the production of energy in the EU, contributing to the loss of 1.2 million days' pay annually as an effect of health problems.

The need for modernisation of this antiquated energy system implies high costs for the necessary actions. This challenging situation does however offer the chance to build an innovative energy sector. The technical design of the old production units, with their unsuitability to contemporary environmental requirements, could pave the way to carry out the desperately needed restructuring of the energy sector. With view to 2050 it will be necessary to exchange the whole current production capacity. Decisions taken in the current decade will, to a large extent, shape the future energy mix. This is why the energy sector, in taking some tough decisions, must take into account not only the current situation but also future trends. Another factor which should be taken into account is the country's changing energy potential. This is illustrated in Table 1.

Table 1. Changing Polish energy potential

Energy source	Perspective
Black coal	Increase in the costs of extraction domestically, low international competitiveness and being displaced by imports.
Brown coal	Opening new seams is necessary – high non-economic costs.
Shale gas	Unknown potential – uncertain scale and profitability of its extraction, environmental problems.
Renewable sources	Today the costs of exploiting renewable sources of energy are relatively high but falling fast with the development of technology. Significant potential.
Nuclear energy	No own sources of uranium, no technical tradition in atomic power, limited know-how in this area and high investment costs.
Common European energy market	Requires the completion of reform at a European level and infrastructure development, as well as freeing prices on the domestic market.

Source: 2050.pl. Journey to a low emission future. Warsaw Institute of Economic Studies and Institute for Sustainable Development. Warsaw 2013 + amendments

[1] For the preparation of the text, analysis was used which was carried out within the framework of the project „Low Emission Poland 2050" realised by Warsaw Institute of Economic Studies and Institute for Sustainable Development supported by the European Climate Foundation, and detailed in „2050.pl. Journey to a low emission future". All material in Polish and in English is available on the website www.np2050.pl

Modernising the energy sector should lead to a synergy of benefits in various areas: economic development, resolution of social problems and environmental protection. This will require concrete actions supported by public policy. The most important of these are[2]:

1. **Unambiguous definition and clear separation** of the interests of State, society and oil/energy industry in respect of the direction of energy development. It is essential that interests of corporations and trade unions are aligned with the needs of the whole of society and interests of the State.
2. **Limiting support for outdated energy technology**. Conventional energy is the beneficiary of public aid – including also such aid which primarily should be provided for the development of renewable energy[3]. More investment in research and development of innovative technology.
3. Genuine **freeing up of the market for energy production**. The vertical integration of electricity businesses has led to the creation of *de facto* monopoly positions. This prevents the entry into the market of smaller, more dispersed sources. Therefore it is necessary to separate the companies producing and distributing energy and to create a system where the society and economy interests as a whole are above the sector interests (especially for energy).
4. Introduction of a support system for **innovative participants** in the energy market: for firms investing in the improvement of energy efficiency, and promoting energy production on the basis of local, dispersed, renewable energy resources. This internalisation of external energy costs of coal as well as financing research and development would support the development of research of energy accumulation technology and intelligent networks, capable of the two-way transfer of electricity.
5. **Introduction of a renewables support system** for those regions where businesses from the coal energy sector are still dominant in order to lay the foundation for a low carbon transformation. This transformation process should be spread out over several years, and changes introduced gradually on the basis of agreed social compromises.
6. **Supporting change through education.** New educational subjects should be created related to innovative energy technologies as well as training focussing on the development of more sustainable consumer behaviour. The preparation of a training system for people considering investing in micro-sources is essential.

Undertaking the modernisation of the Polish energy sector should take into account the vast possibilities of improving the economic management of resources. A number of complex activities in construction and transport would allow keeping the historical pace of improving energy efficiency in the forthcoming decades. Thanks to this the final energy consumption in 2050 should stay at maximum today's level while society's wealth could grow by a factor of three. Such an effect can be achieved by the insulation of existing residential and commercial buildings, gradually converting to passive constructions, promoting public transport and continually tightening norms with regard to the fuel consumption of cars.

For almost a decade in the leading global economies a large amount of investment in the development of alternative sources of energy and eco-innovation has taken place. The objective is the achievement of a technological breakthrough, thanks to which partial or even total elimination of the need for producing energy from fossil fuel will be possible. These activities have led to such a situation, that in some places solar and wind energy is competitive with conventional technology. This favours the development of dispersed sources as well as the emergence of prosumers – energy consumers, who possess installations to produce energy, using it for their own purposes as well as selling it to networks[4]. The exponential fall in the price of renewable sources of energy leads to the belief that this will also happen in Poland. From this point of view, low emission modernisation increases energy security in Poland.

The adopting of brave, systematic and co-ordinated modernising activities appears to be the only sensible route to maintain competitiveness in the forthcoming decades. An adequately constructed climate and energy policy has the chance to permeate all areas of social-economic life and build a permanent foundation for a modern and highly developed Poland. Currently, the domestic public debate regarding climate and energy policy is dominated by scepticism and a conservative approach. It is forgotten however, that a low emission transformation is a long term strategy, which contributes to the development of the country and prepares it for participation in the race for global competitiveness. To make Poland join those states which implement a

[2] Hille E. Proposal of a timetable for implementing an Alternative Energy Policy Instrument in the realisation of a Polish Alternative Energy Policy to 2030 (selected issues). Institute for Sustainable Development. Warsaw 2012.

[3] In 2010 47% of the support for renewable energy development in Poland was obtained by coal installations conducting the process of so-called wood co-firing. Knapp K., Arcipowska A., SOURCE? regarding the unbalanced use of renewable energy resources in Poland and the abnormality in the system of support for renewable energy resources. Institute of Renewable Energy. Warsaw 2012.

[4] According to an evaluation of the Institute of Renewable Energy creating the conditions for the development of micro sources of renewable energy sources would allow 11 times growth in the numbers to 2020. „National plan for the development of micro-installations for renewable energy sources to 2020. Synthesis". Institute of Renewable Energy and Association of Employers. Renewable Energy Forum. Warsaw, April 2013.

modern climate and energy policy can bring significant benefits. Joint creation of the shape of this policy should help Poland to mitigate negative consequences of the transformation, spreading the actions over a period and choosing an optimal modernisation path for our country. There are three basic objectives for the European Union and Poland: improvement of the energy and resource effectiveness, technological modernisation and energy security, which appear to be good points for the joint search for beneficial solutions.

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