

Principles for the update of the Energy Policy of Poland until 2040 (EPP2040)

Strengthening energy security and independence

The present international situation has been affecting many aspects of energy policy and implies **the need to change the approach to ensuring energy security towards a greater diversification and independence.**

For this reason, modifying the provisions of the *Energy Policy of Poland until 2040* (EPP2040) is needed in a way to enable neutralising or mitigating the risks associated with the potential crisis situations in the country as well as at the international forum and at the same time allow for implementation of the key objective of energy policy i.e. energy security, while ensuring subject to competitiveness of the economy and reducing environmental impact of the energy sector. The road towards achievement of the common EU targets can be covered in a variety of ways, depending on the national capacities and background and the new circumstances that could not be foreseen in advance. The review of EPP2040 will aim at **selecting the optimum national path** within the new geopolitical and economic framework and with consideration to the protection of consumers against excessive increase in the energy prices and deepening of the energy poverty.

In this context, the updated energy policy of Poland must consider also the **fourth pillar – energy sovereignty** with its specific component of **quick decoupling of the national economy from the imported fossil fuels** (coal, oil and natural gas) and their derivatives (LPG, diesel oil, petroleum and kerosene) from the Russian Federation and other economically sanctioned countries. This will be achieved through the diversification of supplies, investments in production capacity, linear infrastructure and storage as well as alternative fuels.

In the remaining pillars of the energy policy of Poland – just transformation, zero-emission energy system and good air quality – the measures reducing the demand for the fossil fuels from the Russian Federation and other economically sanctioned countries will be boosted to increase energy security of Poland and at the same time focused on promoting innovation and strengthening of the economy.

Considering the above, the following modifications to the EPP2040 are envisaged:

1) **Increasing technological diversification and extension of capacity based on national resources**

The aim of Poland to cover the demand for energy capacity with **the technologically diversified national sources** in order to maintain high level of energy independence shall be pursued with consistency. **The investments in the energy sector** shall be focused on **ensuring stability of the energy systems' operation with consideration to** mitigating the environmental impact of the energy sector on human life.

2) **Further development of renewable energy sources**

Boosting the RES development in all sectors will address the challenges related to **independence and sovereignty, with consideration to improving the quality of life resulting from better**

quality of natural environment. In parallel, the present economic and political situation in Europe, which limits the possibilities of importing the energy resources from the Russian Federation, pressures the EU Member States to take the measures aiming at accelerated integration of renewable energy sources.

RES is one of the components of energy mix diversification. **In 2040 perspective, the efforts should be targeted on achieving about a half of energy production from renewable sources.** Apart from further development of wind and solar capacities, the measures aiming at development of RES **which are independent from atmospheric conditions** i.e. using the energy of water, biomass, biogas or geothermal energy, will be promoted. Using of RES in energy clusters and cooperatives and within hybrid installations is considered eminently desirable.

Financial support for the instruments promoting energy self-sufficiency of households is to be increased.

3) **Improved energy efficiency**

The focus will be on improving energy efficiency, which **limits the energy demand** and therefore reduces the need for resources and mitigates the effects of the potential lacks of energy supplies.

The policy envisages for intensified measures aiming at **thermal modernisation and renovation of the buildings**, which will be of importance for the protection of households against **energy poverty**. The thermal modernisation support programmes i.e. „Clean Air” will be targeted on **enabling the use of low-temperature heat sources** with simultaneous ensuring of thermal comfort of the consumers.

There is also the need for boosting the measures enhancing process efficiency and reducing the use of energy in **the industry**.

4) **Further diversification of supplies and providing alternatives for hydrocarbons**

Efforts will be taken to gradually decrease the economic dependence from natural gas and crude oil. Nevertheless, the upcoming decades will further require securing their supplies to the customers. Thus, **diversification of sources, directions and routes of supplies** of these resources **will be continued** with a view to gaining independence from supplies from the Russian Federation and other economically sanctioned countries. For this reason, the construction of the Floating Storage Regasification Unit (FSRU) in the Gulf of Gdansk along with the extension of national grid and underground natural gas storage sites will be expedited.

Further actions will be taken to replace the demand for natural gas with decarbonised gases and other fuels of well-established efficiency, including among others by development of hydrogen-based technologies offering a valid alternative to natural gas.

Reducing demand for liquid fuel will be addressed by the intensified measures related to the use of **alternative energy sources in transport** i.e. biocomponents in liquid fuels, biomethane, hydrogen, low-carbon synthetic fuels or electric energy. Enhanced promotion will cover the use of “clean” public transport, changing the drivers’ behaviour to more ecological driving, or more extensive use of rail freight transport.

5) **Adjustment of investment decisions related to gas production capacity to fuel availability**

Gas units will continue to be of importance for regulating the operation of the energy system, however due to the change of geopolitical situation and unpredictability of the gas market in medium-term perspective, **the use of the existing coal units may be increased**. With consideration to these changes, the investment plans associated with the new gas capacities should be verified in terms of production economics.

What is of vital significance in the heating sector – the rate of conversion of the coal units into gas units **will depend on the resource availability**. At the same time, the new opportunities for using other energy sources offering a vital alternative for natural gas in the heating industry will be sought. These measures should also contribute to **development of the effective heating systems**.

6) Use of coal units

The use of national hard coal deposits **can be periodically increased** when the state energy security is threatened. The rate of reducing the extraction and use of coal may slightly drop compared with the current scenarios due to the potential need for longer operation of the existing coal units than expected, considering the potential disturbances in the import of energy resources.

Ensuring the continuity of supplies will be addressed by the measures aiming at **maintaining the readiness of coal units to operate in accordance with their technical lifetime**, which is longer than envisaged by the economic considerations sensitive to the prices of CO₂ emission allowances. For this purpose, the modernisation opportunities of the existing production units will be verified to enable their use at enhanced operating parameters and lower environmental burden, which will also have a positive effect on economic conditions of their exploitation. These investments will contribute to ensure better conditions for RES integration in the energy system due to adequate guaranteed capacity reserve. The new document will encompass the plan for using the existing production units with consideration to the opportunities of increasing their efficiency and lifetime of coal units, followed by the necessary modernisation and maintenance to ensure proper stable capacity and balancing. The plan will be drawn up in cooperation of the Energy Security Team under the auspices of the minister competent for energy as well as the minister competent for state assets and the plenipotentiary for strategic energy infrastructure and the State Treasury companies.

Considering the optimum use of the national raw material, technological and infrastructural resources, efforts will be made to intensify the activities aiming at development of **clean coal technologies** (CCT). This will improve the energy security based on using the state-of-the-art and low-carbon technologies as well as building the national competitive advantages.

7) Implementation of nuclear energy

Nuclear energy based primarily on large nuclear reactors (above 1000 MW) of low sensitivity to temporary breakdowns in the supply of fuel and ensuring the supplies of stable and clean energy will be pursued with consistency. The restrictive global standards addressing the nuclear and radiation safety provide for safe operation of nuclear power plants and allow for elimination of the potential threats in the emergency situations.

The works related to construction of the first Polish nuclear power plant and comprehensive implementation of the Polish Nuclear Power Programme are accompanied with the parallel efforts aiming at **perspective introduction of small modular reactors** (SMR). Using this technology to produce the process heat may offer an alternative to the conventional units for the industry and heating sector. In the electrical power sector, such distributed units – not replacing the systemic large nuclear blocks – may act as an additional component of diversification of the power generation structure and strengthen the energy security at the local level.

8) Grid and energy storage development

The measures boosting development of power grids, automation schemes and ensuring **high level of cybersecurity** remain the priority. These are of key importance for stronger integration of distributed and in particular renewable energy sources.

Growing share of RES in the energy system requires the increase in the energy and heat storage capacity at the prosumer, RES producers, grid operators and aggregators level. This implies

intensification of works associated with development of the **energy storage facilities**, including pumped-storage facilities and prosumer storage facilities to reduce the effects of potential disturbances in the production or transmission of energy. In future, the special role in energy storage will be attributed to hydrogen, in particular this derived from RES and ensuring management of excessive generation from RES.

9) **Negotiations on amendments to the EU regulations**

Poland will take the negotiation efforts to **reform the European Union climate policy schemes** in order to implement low-carbon and ambitious transformation, contribute to achievement of the EU objectives, **with consideration to the temporarily increased use of the conventional production capacity and without bearing the excessive costs resulting from the climate policy**. There is a need to ensure adequate funds enabling implementation of the investments mitigating the risk of lack of energy supplies in effect of absence of stable production sources. The measures should **address the development of the new low-carbon technologies and their integration into the system**. Such multi-directional approach will strengthen both flexibility of the energy system and security of its operation as well as derive from the national and EU technical, economic and human capacities.