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**The Environmental Report on the draft**

# Project pipeline for the ENERGY sector under the Operational Programme Infrastructure and Environment 2014-2020

# A NON-TECHNICAL SUMMARY

Warsaw 2014

**1.** **Introduction**

The main purpose of the Environmental Report is to determine potential significant environmental impact of the document *Project pipeline for the power sector under the Operational Programme Infrastructure and Environment 2014-2020*, taking into account its possible options for implementation.

The purpose of the *Project pipeline* document is to support projects from the scope of electricity and gas transmission and distribution, gas storage, and LNG terminal expansion covered by the Operational Programme Infrastructure and Environment 2014-2020 (OPIE 2014-2020), and thus to support also the implementation of the national energy policy and the objectives of the most important EU development strategy EUROPE 2020.

*Project pipeline* is a supporting document in the process of creating a list of projects relevant for the energy sector, and that will be able to obtain co-financing from the EU funds for the years 2014-2020 under the Operational Programme Infrastructure and Environment (OPIE).

**2.** **Legal basis and agreements related to the scope of the Report**

The basis for the development of the Environmental Impact Assessment of the *Project Pipeline* is the Act of the 3rd of October 2008 *on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment* (the EIA Act)[[1]](#footnote-1), which contains a transposition into Polish legislation of the Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 *on the assessment of the effects of certain plans and programmes on the environment*[[2]](#footnote-2).

The Report has analysed possible impact that the *Project pipeline* may have on elements of the environment, in particular on: humans, fauna, flora, water, air, soil, landscape, climate, natural resources, historical heritage objects[[3]](#footnote-3) and material goods, paying particular attention to protected areas, including those covered by the Natura 2000 system.

According to the aforementioned law, the scope and the level of detail of information from the Environmental Report (the forecast) were agreed with the General Director of Environmental Protection, Chief Sanitary Inspector and the directors of maritime offices.

**3.** **Project Pipeline Analysis**

Analysis of the draft document was one of the key starting points to work on the Report (the forecast). It covered the basic structure of the Report, and based on this information from a broad formulation of the intervention directions conclusions were drawn on specific activities that can be implemented under this document, in order to clarify possible impact of these activities on the environment.

*Project pipeline* includes 300 project proposals that are essential for:

* power sector - in terms of power transmission and distribution,
* gas sector - in terms of gas transmission and distribution, including underground gas storage and the development of the LNG terminal.

As part of the Report, all the submitted projects were analysed in terms of their formal classification in accordance with the regulation of the Council of Ministers on projects likely to have significant effects on the environment, and in terms of the stage of their preparation from the point of view of their existing decisions on environmental conditions or environmental impact assessment reports. In addition, elements of the environment were identified, that may have impact on the proposed projects, and their locations were visualised on the map that was based on GIS instruments used to identify protected areas, including Natura 2000 sites, on which the projects may have impact. The results are shown in the table in appendix 3, and in appendix 4 in the form of maps). Both, the above-mentioned table and the map, have been the fundamentals for further analysis under the Environmental Report.

For the purpose of synthetic environmental impact assessment of the *Project pipeline* document, the proposed projects have been divided into the following groups in terms of their possible impact on the environment:

* construction, expansion, reconstruction, modernisation of extra-high and high voltage substations,
* construction, expansion, reconstruction, modernisation of extra-high and high voltage networks,
* construction and modernisation of medium and low voltage grids with connection to RES, and those with infrastructure (e.g. GPZ),
* construction of smart grids with scattered power sources,
* construction, modernisation and reconstruction of gas pipelines (with related facilities), including offshore ones
* construction of local gas distribution networks,
* construction, expansion of underground gas storage facilities,
* expansion of the LNG terminal with the third tank.

To these groups of projects relate further analyses of the environmental impact mentioned in the next sections of the Report.

The analyses, carried out as part of this stage of works, indicated compliance of the *Project pipeline* with global strategic documents of the EU and Poland, in terms of sustainable development and objectives of the climate-energy policy and environmental policy.

**4.** **Analysis of the environmental condition**

Based on the available materials, the key issues and environmental hazards were identified, and their current state was determined. The aim of the analysis was to enable environmental impact assessment of actions implemented under the *Project pipeline* document, and identification of any significant negative impacts, and to propose measures that will minimise this impact, indicate alternatives and possible compensating actions.

Poland has largely preserved its natural and landscape values. Most of them have been covered by different forms of nature conservation of a total area of ​​approx. 10 million hectares, representing more than 32.5% of the country. However, there are serious problems for the environment such as: loss, fragmentation and change of habitats, degradation of landscape features, increasing influence of weather events associated with climate change, waste management problems, air pollution (especially in areas of some cities), problems with exposure of population to noise, pollution of surface, sea and inland waters, threats to groundwater, water management problems (floods and droughts), landslide risk. Negative events occur at different scales.

**5.** **The Environmental Report (The forecast of the environmental impact)**

The analyses included detailed assessment of possible impact that all groups of projects (mentioned above, and covered by the Project pipeline document) may have on particular elements of the environment, including: biodiversity, integrity of protected areas, humans, fauna, flora, water, air, soil, landscape, climate, natural resources, historical heritage objects and material goods. The assessment was based on previously developed evaluation criteria that take into account condition of the environment and its major problems, the possible negative impact and description of projects that can be implemented, as well as the goals of the strategic documents of the UE and Poland.

Detailed analyses were performed for each project covered by the analysed document. In particular, all Natura 2000 protected sites were identified that may be negatively affected by individual projects. The document also includes specification of the resulting threats to those sites. The results are shown in the tables of appendix No. 3. This excludes spatial (area) projects (e.g. construction and modernisation of medium and low voltage network in Opole voivodeship - E/4.4/D/30), because with ignorance of the routing of these grids it is impossible to identify specific protected areas through which the grid will go, and considering all possible areas e.g. Natura 2000 sites on the territory of the given voivodeship would not be reasonable at this stage.

In addition, it should be mentioned that many of the projects proposed for implementation have already been covered by environmental reports, e.g. developed for the Operational Programme Infrastructure and Environment 2014-2020, for which Project pipeline constitutes an executive document, or included in the Strategy ‘Energy security and the environment’. While working on the Report (the forecast), efforts were made to take into account results of the mentioned forecasts (prepared on a more general level).

Part of the projects from the *Project pipeline* document have already obtained their environmental decisions or are in the process of obtaining them, and have their environmental report developed. These investments were excluded from the assessment, however, they were taken into account in the evaluation of possible cumulative impacts.

Activities proposed in the *Project pipeline* can be divided into several groups whose impact on environment, including nature, will be varied, considering conservation of biodiversity and the integrity of protected areas. It should be noted that the integrity of protected areas is understood here not only as a combination of factors, features and processes associated with the area, and affecting its conservation goals (which refers mainly to the Natura 2000 sites), but also refers to the consistency and the ecological relationships of other areas, ensuring the exchange at the ecosystem, species and genetic level (ecological corridors).

Although a number of potential negative impacts of the proposed projects on the nature were identified, it should be noted that all of them (power stations, electricity and gas transmission grids, and connection to renewable energy sources, gas storage facilities, gas terminal) will also have indirect positive impact on the environment by:

* improving energy efficiency of power transfer, that will contribute to energy consumption reduction, including coal-based sources, which will reduce emissions of air pollutants and greenhouse gases, and thus improve air quality and to some extent global climate,
* allowing the connection of renewable energy sources, with the effect described above,
* greater and more efficient use of gas, which is a more environmentally friendly fuel than coal, giving environmental effect as stated above.

Actions to be implemented in urban areas should not have a negative impact, unless their location does not take into account urban natural areas, especially Natura 2000 network.

Detailed evaluations and conclusions resulting from the analysis of the environmental impact of the *Project pipeline* document are presented in the relevant sections of the Report.

As a result of the analyses, it has been found that the implementation of the *Project pipeline* (as a whole) will help to reduce environmental impact and greenhouse gas emissions from the power sector. However, a number of activities envisaged in the document may also have a negative impact on some elements of the environment, as stated in detail in the Report (forecast).

**Assessment of the Cumulative Impacts**

Cumulative effects are defined as changes in the environment caused by the influence of the proposed actions in conjunction with other existing effects and impacts that result from implementation of strategic documents to be implemented in the future.

The study was based on analyses performed for the Environmental Report on the Programme Infrastructure and Environment 2014-2020[[4]](#footnote-4) under which all the proposed projects were identified against existing and planned infrastructure, and under which areas were identified with a possible occurrence of cumulative impacts on the environment. The key projects envisaged under the *Project pipeline* document have been applied on the map developed as part of works mentioned above. It has been possible with the use of IT instrument, briefly called GIS, that allows to overlap individual map layers and identify data, e.g. from individual protected areas.

Detailed analyses made in the scope of the Forecast or environmental reports for projects that already have such, show that investments envisaged under the *Project pipeline* document will have similar impacts on the environment as generally specified in the OPIE 2014-2020, however, if they overlap one another there may occur cumulative effect, especially on areas indicated on the map (set out in section 5.3).

Energy transmission and distribution structure is directly related to energy sources (including existing ones) and receiving regions, and therefore there are limited capabilities for project changes that mainly include changes in the routing. In addition, part of the distribution and the connection networks is defined only spatially, which makes it difficult to assess.

It is evaluated that the accumulation of interactions can mainly occur if projects from the *Project pipeline* document are located within the existing or planned cumulative impact areas of the existing or planned infrastructure.

Since most of the projects planned for implementation were classified to projects likely to have always or to have a potentially significant impact on the environment (according to the regulation of the Council of Ministers on projects likely to have a significant effect on the environment), they will have to go under the EIA procedure defined by the law. Under this procedure (having already full information on the projects under consideration) a full evaluation of the possible occurrence of cumulative impacts will be performed.

**Analysis of the potential cross-border impact**

As part of works on the Report (the forecast), the possibility of cross-border environmental impacts was analysed.

Generally it can be said that investments specifically defined, as well as investments area-related, they both primarily concern Polish territory. Closest to the state borders may be the spatial (area) projects (generally specified) related primarily to the distribution of energy carriers, construction of smart grids, and connection to renewable energy sources (RES). Given their relatively small area and the limited scope of their impact, it cannot be said that they will have a cross-border impact on the environment, however, it cannot be excluded that some of them may have a cross-border impact depending on the nature of the investment.

The bigger investments include transmission lines and gas pipelines. According to the obtained data presented on the map - Appendix 4), only two projects (gas transmission pipelines) are located close to the state border. These are:

* The Hermanowice - Strachocina pipeline (Code: G/7.5/P/2),
* The Hermanowice - Jaroslaw pipeline (Code: G/7.5/P/19)

The first of these projects has already obtained decision on the environmental conditions in which no cross-border impacts were stated. As for the second project, the EIA procedure may be required that will help to state its possible cross-border impact.

**The results of analyses of research issues**

A wide range of specific tests have been carried out in order to determine the impact of the *Project pipeline* on the individual elements of the environment, and its overall impact on the realisation of the sustainable development policy.

These related primarily to evaluation the document from the perspective of: complementarity, compatibility with the principles of sustainable development, minimisation of negative impacts, compliance with the objectives of national and EU policies.

**6.** **Assessment of the benefits of implementation of the *Project pipeline* DOCUMENT and the effects of non-implementation**

The *Project pipeline* document is intended to contribute to achieving the objectives of climate-energy policy of Poland and the EU, among others to: reduce greenhouse gas emissions and air pollution, improve energy efficiency and enhance the use of renewable energy sources.

All of these goals are interrelated, and their implementation will have general impact on sustainable development of the country and transition towards a green economy and a circular economy.

Another important result of the *Project pipeline* document will be a faster development of investments essential for energy sector and a more efficient use of funds under OPIE 2014-2020, which will also help to achieve the effects of the optimisation of the national power system.

The direct effects set out in the form of indicators that will be given in the document include as follows:

* reduction of greenhouse gas emissions by - 160 thousand Mg/year,
* additional renewable energy production capacity, in the form of additional output of these sources connected to the system - 144 MW,
* length of newly constructed or modernised electricity networks for RES - 420 km,
* number of additional users connected to smart grids - 451 000
* length of newly constructed or modernised gas transmission or distribution pipelines - 539 km,
* length of newly constructed or modernised electricity transmission or distribution networks - 719 km,
* additional annual capacity of the LNG terminal intended for an off-take of gas supplied by sea - 2 400 million m3,
* additional opportunity to meet the daily peak demand for natural gas from underground gas storage facilities in relation to 2012 - 13 million m3,
* working underground gas storage capacity of the funded facilities - 1 000 million m3.

A direct general result of the implementation of the *Project pipeline* document will be optimisation of the energy system, and as a consequence lower energy consumption for transmission, ensuring security of energy supply (and avoiding related losses), allowing deliveries of optimal energy carrier in areas that previously had no infrastructure (e.g. gas infrastructure), and developing power grids that enable connection to renewable energy sources.

In case of withdrawal from realisation of the *Project pipeline* document, the provided projects would have to be implemented from the national funds and within their limits. All these investments, if any, would be implemented definitely much later.

**7.** **Presentation of possible alternatives**

The *Project pipeline* document is a set of undertakings in the field of transmission and distribution of electricity and transmission and distribution of gas, including gas storage and LNG terminal expansion. Since the projects are closely related to the existing energy structure, it would be difficult to suggest (from the environmental point of view) alternative solutions in relation to the entire document. It would only be possible to consider shifting funds between projects or groups of thematic objectives, but it is broadly defined in the OPIE 2014-2020.

On the other hand, it is fully justified that the selection of projects for implementation should consider possible options for their location (e.g. in terms of route changes) and the need for environmental compensation. The enclosed map in the appendix No. 4 may constitute the basis. The map shows examples of projects proposed in the *Project pipeline* document together with the applied layer of Natura 2000 sites. For detailed, local and individual analyses other layers created using GIS can also be used .

**8.** **Proposed methods of evaluating the effects of the Policy implementation**

The specificity of the *Project pipeline* document is that the covered projects are scattered all over Poland, and that most of them are quite precisely defined, however, part of the projects, mainly in the field of electricity and gas distribution, is generally specified only in terms of area of implementation. In addition, it should be noted that most of the implemented projects will be classified to the group of undertakings have always or have a potentially significant impact on the environment (according to the regulation of the Council of Ministers on projects likely to have significant effects on the environment[[5]](#footnote-5)), and they will be subject to the procedure of environmental impact assessment of specific projects (EIA), which may result in a need to monitor effects of these individual projects.

Given the above, it would be difficult to justify development of a special system for monitoring environmental effects of the *Project pipeline* document. Therefore, it is proposed to base the monitoring of the environmental effects generally on a double approach: effects on a Polish scale, and effects on a regional and a local scale based on voivodeship reports on the state of the environment and the results of the monitoring of individual projects if such will be provided under decisions on environmental conditions.

**9.** **Recommendations and conclusions**

Based on environmental analyses, future problems and challenges in this field, the key environmental recommendations have been indicated that should be met by actions implemented under the *Project pipeline* document. They have been formulated for different groups of investments.

Meeting the recommendations should help to ensure that the actions conducted under the *Project pipeline* will be ecological, oriented to minimise burdensome impact on the environment and human health, or favourable to the environment.

The following general conclusions can be drawn on the basis of analyses performed in the course of works on the Environmental Report:

* It is estimated, that the *Project pipeline* document as a whole has a positive impact on the environment, and will help to solve many problems related to ensuring supply of energy carriers and thus improvement of the energy security of the country, however, some projects (included in the document) can have also a negative impact on particular elements of the environment, particularly on the Natura 2000 sites.
* Similarly, it can be stated that the *Pipeline Project* document implements, in general, the principles of sustainable development, and promotes the development of the country.
* In terms of the impact on the Natura 2000 sites, a number of projects (linear), as indicated on the map in appendix No. 4, are planned to be implemented on the protected areas. In the case of these investments, it is recommended to perform (at the drafting stage) an analysis of possible avoidance of these areas in case these investments could have a negative impact on the areas. When selecting projects for implementation, it should be particularly noted that, in accordance with Art. 34 of the Nature Conservation Act, projects having significant negative impact on priority habitats and species can be implemented only when there are imperative reasons of public interest.
* A large part of the projects will have a positive impact on the improvement of energy efficiency of transmission, thereby reducing losses in both transmission and distribution grids. This will result in a lower consumption of energy, and as a consequence, its lower production. Consequently, there will be also a lower consumption of raw materials and energy.
* Another important element (resulting from the above) will be the impact of the *Project pipeline* document on the improvement of air quality by reducing energy production also in the classical energy sector, based on coal and lignite, which is a dominant power in Poland.
* A similar effect will have construction of smart grids and distribution networks (envisaged in the *Project pipeline* document), allowing greater use of renewable energy sources.
* Construction and expansion of gas pipelines (transmission and distribution networks) will have impact on a greater availability of this energy carrier, which will allow the use of gas (on individual, local and systemic scale,) as a substitute for coal which is the most emitting source of energy at the current state of technology, and has an impact on air pollution, which is a problem in many regions of Poland and causes substantial costs and health effects.
* The development of gas networks and gas storage systems, as well as the expansion of the LNG terminal will provide greater certainty of supply of the raw material to ensure the effects described above.
* Without implementation of projects envisaged in the *Project pipeline* document, or their financial support from EU funds, the rate of optimisation of the Polish energy system will be much slower and will not reach the results described above, especially in terms of raising the efficiency of energy distribution.
* Based on the analysis of the objectives of the EU strategic documents, it can be stated that the *Project pipeline* document meets objectives of these documents, as well as the objectives of Polish strategic documents.
1. Journal of Laws No. 199, item 1227, as amended [↑](#footnote-ref-1)
2. Official Journal of the European Communities L197/30 of 21.07.2001 [↑](#footnote-ref-2)
3. This term also includes archaeological sites. [↑](#footnote-ref-3)
4. Strategic Environmental Assessment of the Operational Programme Infrastructure and Environment 2014 - 2020, Atmoterm S.A. Warsaw 2013 [↑](#footnote-ref-4)
5. Journal of Laws of 2010, item 1397, as amended [↑](#footnote-ref-5)