



ENERGA S.A. and ENERGA OPERATOR S.A. – DISTRIBUTION NETWORK UPGRADE AND CAPEX PROGRAMME, POLAND

Non - Technical Summary

March 2010

Notice

This Non-Technical Summary was prepared in cooperation with WS Atkins – Polska Sp. z o.o. for the purpose of public disclosure and consultations of Energa S.A. and Energa Operator S.A. distribution network upgrade and CAPEX programme.

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Glossary of Terms

Term	Meaning / Definition
DUS / ECD	Environmental consent decision
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EO	Energa Operator S.A.
EPL	Environmental Protection Law
EU	European Union
NGO	Non Governmental Organisation
SCADA	System Control and Data Analysis
SEP	Stakeholder Engagement Plan

1. Introduction

ENERGA SA, a joint stock Company organised in Poland, approx. 86.79% owned by the Polish Ministry of State Treasury. Energa Group is the Poland's leader in production of energy from renewable sources, primarily from its 45 hydro plants with generation capacity reaching 356 MWe. The Group has access to the best conditions for renewable energy sources in Poland.

Close to 20% of the energy produced by the Group in 2008 came from renewable sources (the highest percentage for any of the energy groups in Poland), with the balance generated mainly by the coal plants. ENERGA is compliant with the mandatory targets for the share of renewable energy in the total volume of the energy sold: it amounted to 7,4% in 2008 vs. mandatory target of 7%.

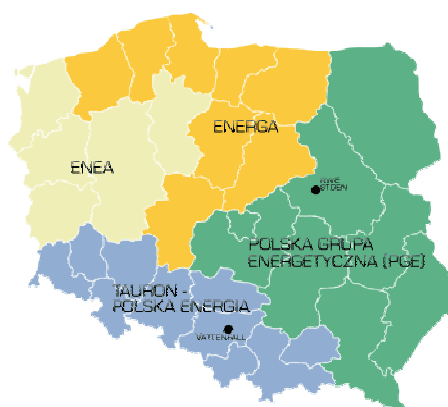
ENERGA controls directly and indirectly 44 companies which operate in the segments of generation, distribution and sales of electricity. The key entities of the Group include:

- ENERGA-OPERATOR SA (Energy Distribution Segment);
- ENERGA-Obrót SA (Sales Segment), the energy sales company responsible for sales of electricity to retail and institutional clients;
- ENERGA Elektrownie Ostrołęka SA (Conventional Generation Segment), the key thermal power plant with 456 MW thermal and 722 MW electric power installed capacity;
- ENERGA Kogeneracja Sp. z o.o. (Generation, both: coal and hydro plants);
- ENERGA Elektrownie Straszyn Sp. z o.o (Renewable Generation Segment), operator of the key hydropower unit on Vistula river with 325 MW of total installed capacity.

ENERGA-OPERATOR S.A. operates under its current name since 1 July 2007. In November 1998, EO was licensed by the Regulator to carry out the distribution business as the Distribution System Operator ("DSO") until 2020.

The company operates in the central and northern part of Poland, servicing about 2,8 m customers, including over 200k corporate and institutional customers.

Figure 1 Coverage of ENERGA-OPERATOR S.A.



Source: ENERGA SA

At present the Group does not have an environmental management system – only its Kalisz Branch has such a system implemented in compliance with PN-EN ISO 14001:2004. Over the next three years, the Company is planning to implement an internal Environmental Monitoring System based on the personnel of units responsible for environmental protection, who will be trained for internal auditors (post-graduate courses in the field of environmental audit). Another step will be to implement the aforementioned Environmental Monitoring System as an interim measure preceding the future implementation of one of the environmental management systems, most likely EMAS.

2. Rationale for the Project / Project Outline

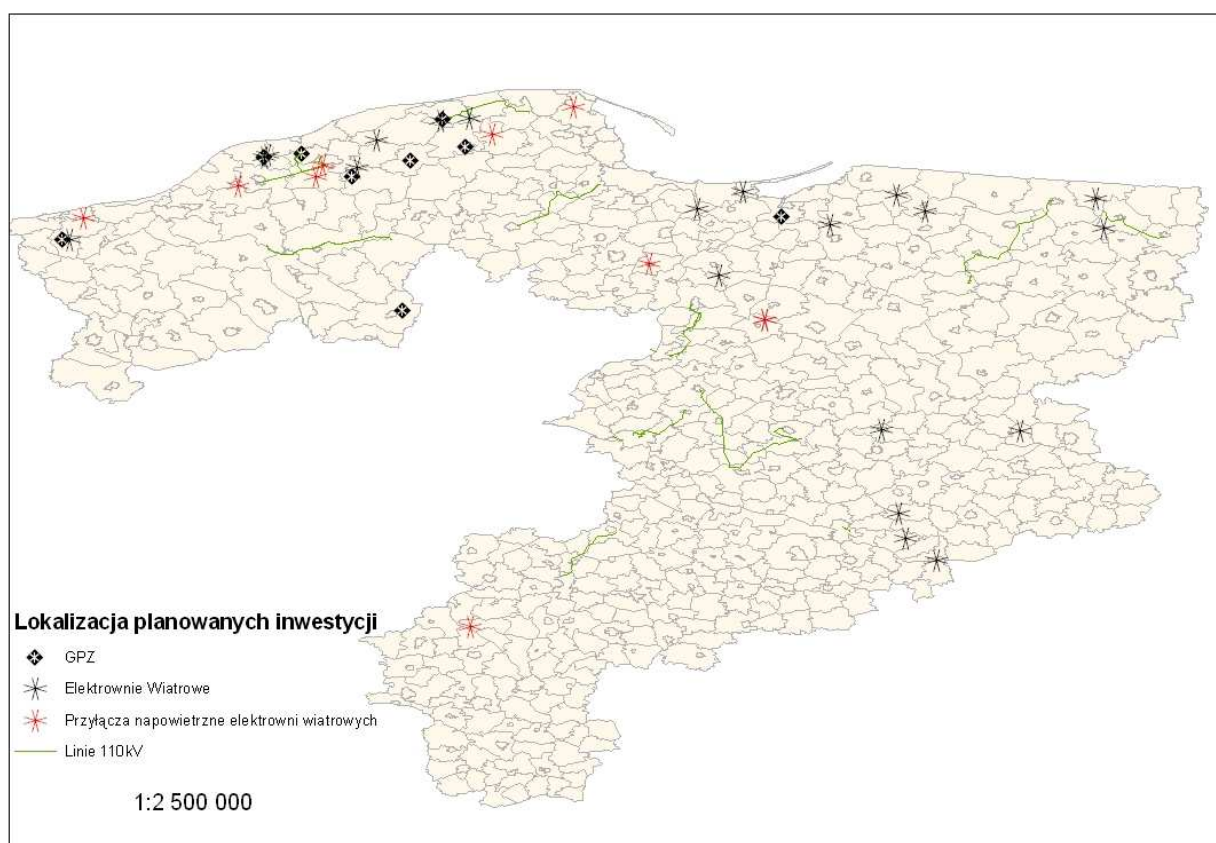
2.1 Scope of the Project

The Project consists of a large number of investment schemes to be carried out by EO between 2009 and 2011, aimed primarily at construction of new and modernisation of the existing LV and MW electricity networks. The Project will include construction and reconstruction of approximately 1,861 km of MV electricity network and 4,294 km of LV network, and construction/refurbishment of approx. 3,352 MV/LV substations. It will also include a component of HV lines modernisation or reconstruction as well as minor investments aimed at connection of new lines constructed by third parties (primarily connections of wind farms) to the existing HV system.

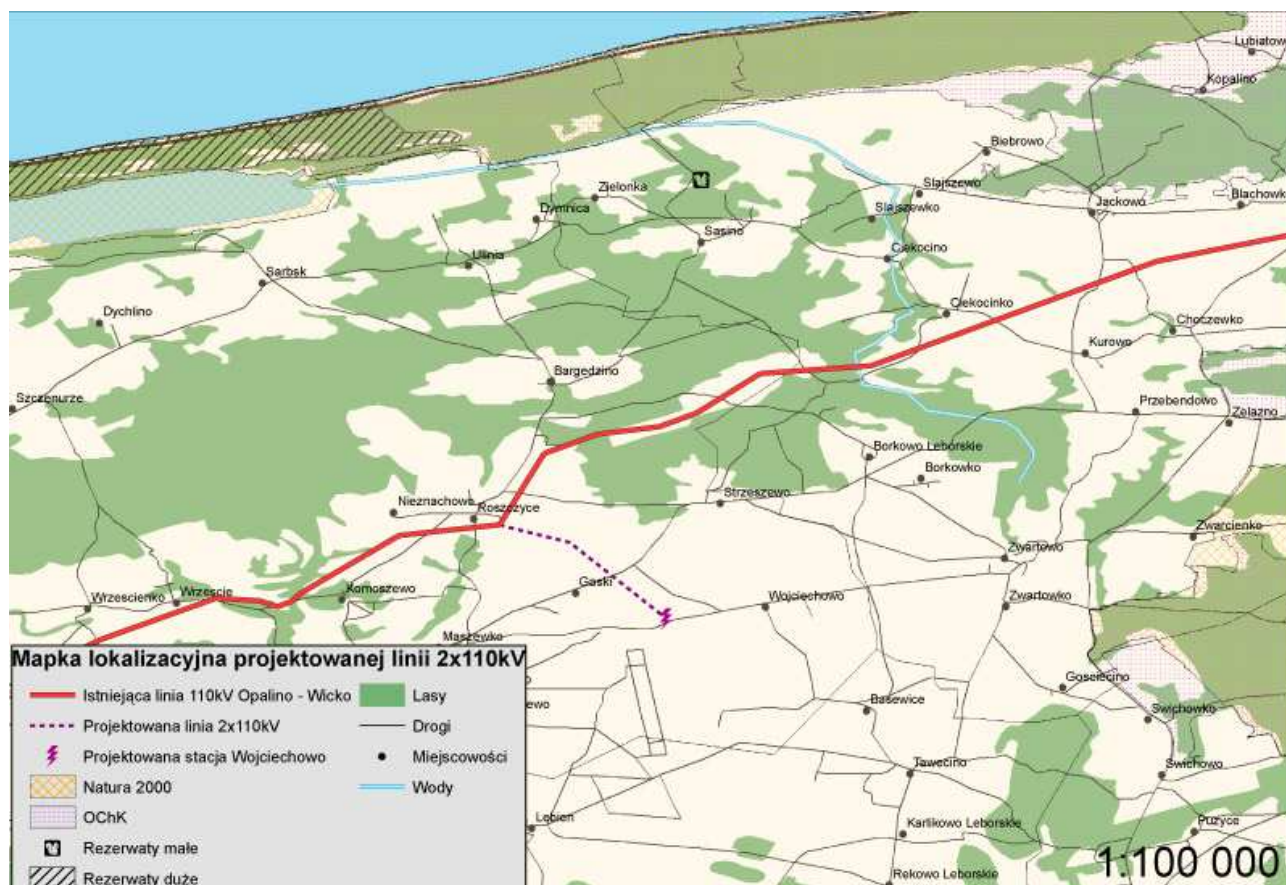
The Project comprises also several types of investments in 110 kV network:

1. Construction of new transformer station on existing 110 kV line – 1 location
2. Transformer stations modernisation, upgrade or extension with installation of new line fields – 11 projects concerning 16 locations
3. Transformer station extension associated with connection of wind farms – 23 projects
4. Construction of new overhead 110 kV power line – 1 project, 4 km of two-track line;
5. Reconstruction or modernisation of 110 kV lines – 18 projects;
6. Construction of 110 kV overhead terminal for connection of wind farms – 10 projects.

Location of these projects is shown in the scheme below:



The Project includes only one investment associated with construction of new HV line. This is a 4 km line between Wicko – Opalino line and a new Wojciechowo station. The line routing is presented in the schematic map below:



This is one of only few investments requiring Environmental Impact Assessment, for which the EIA report has already been prepared and the authorities have issued environmental consent decision. No environmental or social conflicts were identified during the procedure, as no significant impacts had been foreseen in the EIA report (further details of the procedure are provided in Chapter 4).

2.2 Project rationale

There are several rationales for implementation of the project, which are listed below:

- **Connection of new Renewable Energy Sources**, primarily wind farms. These sources need to be connected using 110 kV lines due to the stability of the power network reasons.

A significant part of the investments directed towards reinforcement of the network is driven by the changing network usage patterns due to connection of RES.

- **Connection of new individual and corporate users**: as required by the regulatory regime in Poland, EO is obliged to connect new users in the areas where it operates as Distribution System Operator (DSO). In the years 2009-2011, EO will connect some 134 thousand of new users (4.8% of its current client base), including 338 RES.
- **Replacement and modernisation of the network assets** in order to improve its capacity and reliability: more than 25% of the lines operated by EO and 20% of the sub-stations are of the age beyond technical viability, which negatively impacts the reliability of the operations and running costs. The investment programme will significantly reduce the transmission losses, interruption times and the costs of maintenance.

Improvement of efficiency and reliability of the network, as well as quality of the energy supplied, is a very important rationale of the investment programme. The network losses of EO have been gradually decreasing over the past few years, and already compare favourably with other DSOs in Poland (national average is at approx. 8%). Moreover

reduction in energy losses will allow to reduce CO₂ emission by 855 thousand tonnes by 2015.

- **Automation and tele-control** is the part of the Project and EO is in the process of performing two key projects aimed at making the medium-voltage network control system more effective. These are:
 - o replacement of telemechanical elements in HV/MV transformer substations,
 - o installation of connectors controlled remotely by radio waves.

The replacement of telemechanical elements is a joint task for the high- and the medium-voltage networks. The task consists in installing new equipment or replacing old types of telemechanical equipment in HV/MV substations with new equipment. The installed equipment allows for real time data acquisition from the system and to perform controls in a shorter time.

Installing radio-controlled connections on MV network structures involves installation of equipment with remotely-controlled connectors, installing remote drives in connectors, and replacing old types of connectors with new types. Signals are exchanged through a communication system between the connector and the real time SCADA system. Thanks to receiving online information on the status of the network, the time of planned and unplanned outages is reduced.

3. Summary of the Legal and Institutional Process and Requirements

The requirement to perform investments related to connecting RES and new entities to the network is imposed by the Energy Law. Thus, such tasks are a top priority in EO's investment plans. As for modernization tasks aimed at restoring of worn-out elements of the network, the priorities are selected by analyzing the technical condition of the equipment which is evaluated in detail during periodic inspections. Such aspects as age, failure rate, and the degree of amortization of equipment are considered.

With respect to other investment projects, in particular those related to reconstruction of the network, which is required due to the general increase of consumption, and aimed at improving the performance of the network or at limiting network losses, the evaluated aspects are most of all the relation between the outcomes of the investment project to the necessary outlays. The tasks that were selected for the Project are those with the highest efficiency ratio.

In determining the priorities of investment projects, EO takes into consideration the following factors:

- Obligatory nature of the investment project, as imposed by the law or approved development programme for energy transmission company;
- The technical condition of equipment, its age, failure rate, and degree of amortisation;
- The efficiency of the investment project.

From the regulatory point of view, it is expected that majority of the Project (improvements/modernisations or new line construction/equipment replacement) will be undertaken under simplified environmental procedure and no EIA assessment/report will be required. It is expected that the most significant developments i.e. construction and modernisation of 110 kV power line require full EIA, while investments which may influence Natura 2000 will be subject to full EIA procedure including assessment of potential impact on protected habitats or bird species. EO environmental department is currently (December 2009) preparing GIS map of the

proposed transmission lines and their possible conflicts with Natura 2000 and other protected areas. Once completed, this will allow to significantly reduce possible conflict at the earliest - desktop study stage. The procedures followed by Energa ensure that the Project will comply with Polish regulations and more restrictive EBRD requirements.

4. Environmental impact assessment of the Project

In general, operations of EO have low environmental impact and are not disruptive for the environment and local communities. The residual impact is mitigated by means such as low-impact towers and bird nests construction. Moreover, the nature of the investment programme of EO is considered to have minimal impact on the environment, as it will mostly include construction and modernisation of LV and MV network.

ENERGA's investment and operational procedures comply in full with the applicable Polish and EU environmental regulations, including Polish Environmental Law 2008 and MRR Guidelines, and take account of Natura 2000 (both official and Shadow List).

The EIA procedures followed by the company fully satisfy the requirements of EU EIA Directive, as all the investments included in the Project will be initially screened for potential environmental impacts internally by Energa Operator specialists. This will be followed by a formal screening by relevant environmental authorities and when appropriate, full Environmental Impact Assessment procedure will be implemented.

As an example, the construction of new 4 km long HV line included in the Project has already undergone the location procedure, and the full EIA procedure had been followed prior to granting the environmental consent decision by local authorities. Information about the procedure was published on bulletin board and in publicly accessible registries, however no comments, appeals or requests regarding the project were received.

The most characteristic environmental impacts of 110 kV line (noise and electromagnetic field) have been analysed and assessed:

Noise impact – so called corona effect, during rain or foggy weather, the noise level at 110 kV lines does not exceed 30dB; and in practice in a distance of 15 m from the line, the noise level is similar to background noise.

Electromagnetic field (EMF) - Additional calculations have been conducted to check potential impact of electromagnetic fields associated with the operation of the double track 110 kV power line. The calculations proved that the standards defined in the Regulation of the Minister of Environmental Protection on permissible electromagnetic field levels in the environment will not be exceeded in any place under or near the line. For areas accessible to people the maximum intensity of the electric field may not exceed 10 kV/m. This level will not be exceeded in any place under the line.

Stricter limit of 1kV/m applies to areas designated for residential developments. As the line passes agricultural lands only, this standard was not applicable to this investment.

Chart showing intensity of electric field generated by double track 110 kV line

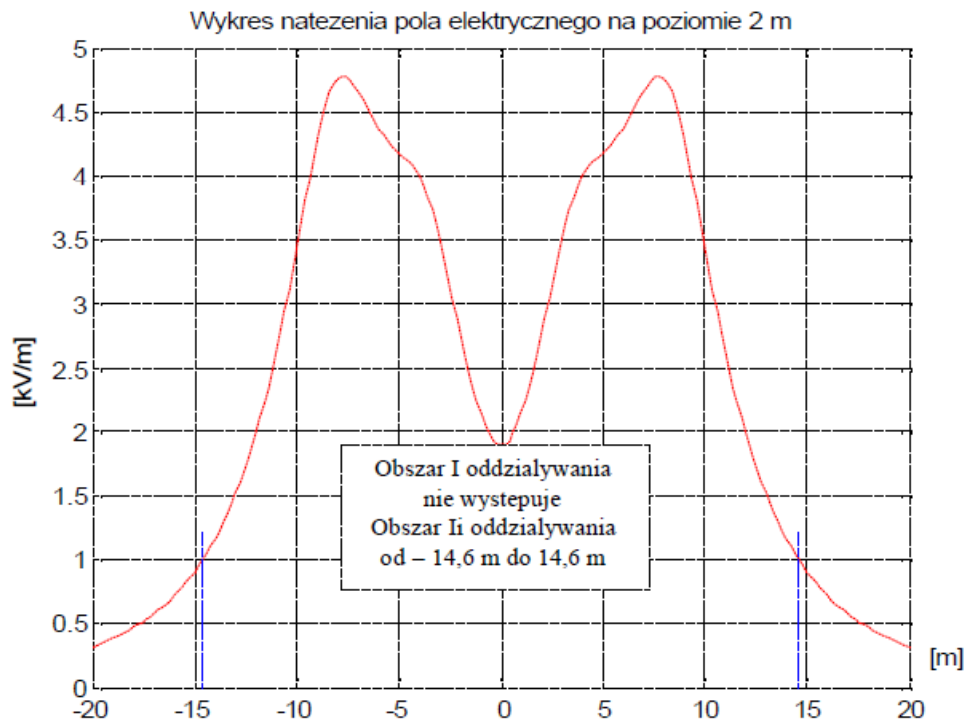
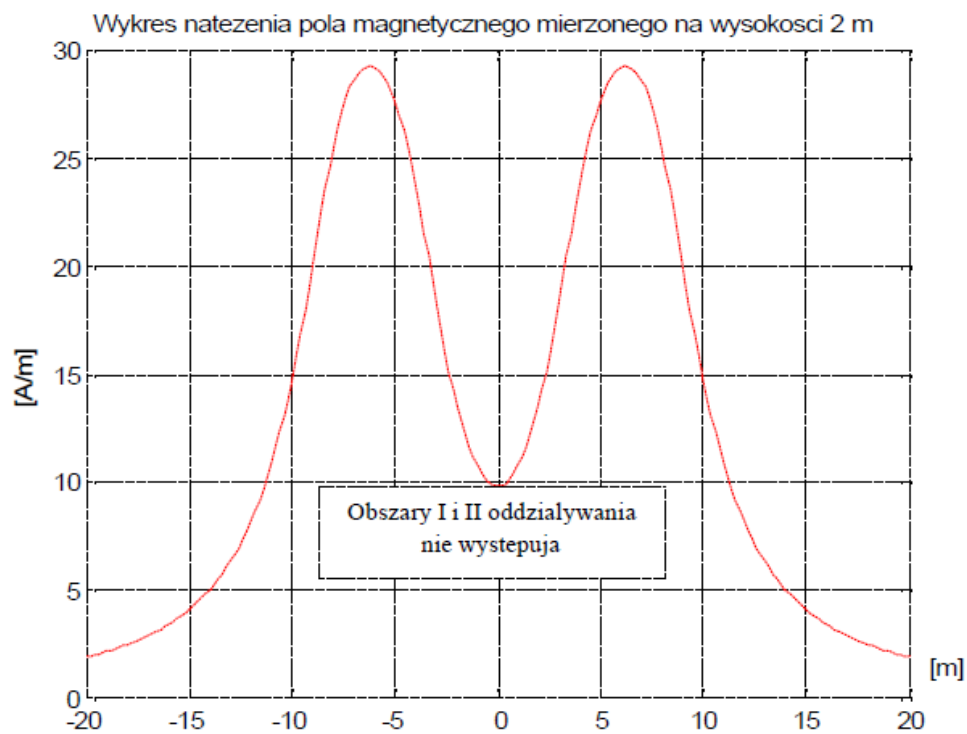


Chart showing intensity of magnetic field generated by double track 110 kV line



Based on the modelling and calculations conducted during the EIA, construction and operation of the line will not result in elevated levels of EMF in publicly accessible areas.

5. Access to the information and grievance mechanism

ENERGA welcomes comments and suggestions regarding the Project. Attached in the appendix is a form for comments and queries.

All requests for additional information related to the Project should be addressed to:

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Investments and Development Department,

Investments Office.

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Non-technical summaries of environmental impact assessments are available at the company web page:

http://www.grupaenerga.pl/oceny_oddziaływania_na_srodowisko_streszczenia_nietechniczne.xml