

LITHUANIAN-POLISH
ELECTRIC POWER LINK
Information about the project

**FOR ENERGY
SECURITY OF
LITHUANIA**

TABLE OF CONTENTS

INTRODUCTION	3
ABOUT THE PROJECT	4
WHAT DO WE NEED TO KNOW?	6
ELECTRICITY AND HEALTH	10
PROJECT PROGRESS	12
FREQUENTLY ASKED QUESTIONS	16

INTRODUCTION

Modern energy for the future is the important foundation of the economic stability as well as safe and growing society of each country. It allows to reliably and safely supply electricity to the population and core branches of the national economy at economically justifiable prices.

The growing electricity demand and the rapidly rising energy prices force countries, including Lithuania, to search for new ways of safe and economical supply of electricity.

The Lithuanian energy system is currently linked only with the common system of the CIS (ex-Soviet) countries, Latvia and Estonia, and still lacks an alternative link to Western Europe. For the purpose of strengthening the energy independence of Lithuania, the National Energy Strategy of 18 January 2007 provides for the integration into the markets of Member States by interconnecting the Lithuanian energy grid with the energy grid of Scandinavian countries and the Polish energy grid.

To achieve the set objectives, joint Lithuanian-Polish company *LitPol Link* was incorporated on 19 May 2008, which started preparatory operations for the construction of the Lithuanian-Polish electric power link.

The purpose of this publication is to present the most important aspects of the Lithuanian-Polish electric power link project in plain intelligible language, to discuss the planning stages of the future line and the opportunities for public participation in the project, and to answer questions that are frequently asked during the implementation of similar projects.

Key participants of the project

Planning organised by:

AB Lietuvos energija

A. Juozapavičiaus g. 13, 09311 Vilnius, Lithuania
tel.: (8 5) 278 2408, fax: (8 5) 212 6736
e-mail: info@lietuvosenergija.lt

Project coordinated by:

LitPol Link Sp. z.o.o.

Wojciecha Górskiego 9, 00-033 Warsaw, Poland
tel.: +48 223233461
e-mail: litpol-link@litpol-link.eu

Project documents drawn up by:

UAB Sweco Lietuva

V. Gerulaičio g. 1, 08200 Vilnius, Lithuania
tel.: (8 5) 219 6574, fax: (8 5) 261 7507
e-mail: LitPolLink@sweco.lt

ABOUT THE PROJECT

Lithuanian-Polish electric power link construction project *LitPol Link* is the first interconnection of energy systems of the Baltic States and West European countries. The Lithuanian energy system is currently a part of the common system of the CIS countries, Latvia and Estonia. Alternative links to other European energy systems would help ensure more reliable and stable supply of electricity.

In July 2009, operators of energy systems of the Baltic States became part of the electricity network ENTSO-E association. Thus, the Lithuanian-Polish electric power link will greatly contribute to the strengthening of the network and its development in north-eastern Poland and southern Lithuania.

The intended Lithuanian-Polish electric power link will allow:

- to interconnect Baltic and West European energy systems;
- to increase the stability and reliability of electricity supply;
- to develop export and import of electricity;
- to ensure the economic development, the competitive edge and energy independence of Lithuania.

Pursuant to the law of free economy, electricity will flow through the link in the direction where it is needed most. For instance, following the decommissioning of Ignalina Nuclear Power Station the shortage of energy in the Baltic area can be compensated by importing it. And once new energy recovery resources emerge and more energy is generated than needed, the surplus can be exported.

LitPol Link, which is the company implementing the Lithuanian-Polish electric power link project, issued the call for tenders for the performance of preliminary operations. The drawing up of the **special plan** of the first in Lithuania 400 kV overhead power line, the performance of the **environmental impact assessment** and the preparation of the **feasibility study** on the reconstruction and expansion of the existing Alytus transformer substation was commissioned to Sweco, a Swedish capital consulting company.

Regional energy systems in Europe

RG Continental Europe

RG Nordic

RG Baltic

RG UK

RG Ireland

RG CIS

Planned electric power links

Lithuanian-Polish, 1000 MW

Lithuanian-Swedish, 1000 MW

ESTLINK2, 650 MW

ENTSO-E network of energy operators

Lithuanian energy system

330 kV Klaipėda–Telšiai link

400 kV Lithuanian-Polish link

Klaipėda division

Utena division

Kaunas division

Vilnius division

Šiauliai division

330 kV transformer substation

330 kV switchyard

330 kV line

Power line

The planned power line shall be double-circuit 400 kV overhead power line, and the power of the transmitted energy shall be approximately 1 GW. In Lithuania, this power line shall run from Alytus transformer substation to the Lithuanian-Polish border to the north of Lake Galadusys. The approximately 50 kilometre-long power line will be installed on transmission towers; the average distance between towers shall be 320 m (the maximum distance shall be 600 m), and the total number of towers can be 150. The height of the tower itself is expected to reach 73 m, while the distance between outside wires shall be 19 m.

Direct current back-to-back converter station

The so-called direct current back-to-back converter station is required to reconcile Lithuanian and Polish transmission systems. The back-to-back converter station shall be fitted at Alytus transformer substation, which will become the principal transmission system junction in southern Lithuania. For the purpose of this project, two units of such back-to-back converter station shall be required, each some 200 metres long and 170 metres wide.

Lithuanian-Polish power transmission line

Lithuania

Poland

The planned electric power link shall consist of high voltage overhead power line between Alytus and Ełk with a modern subsystem in Alytus.

WHAT DO WE NEED TO KNOW?

Just as any other electrical installation, operating power transmission lines create electric field and magnetic field. These fields can be of a natural origin, e.g. the Earth has both electric and magnetic field. It is possible to change the strength of electric and magnetic fields; however, they cannot be avoided if electrical installations are used.

Electric and magnetic field

Electric field E is created by electric voltage. Its operation can be compared with water pressure in pipes. A lamp standing on the table creates an electric field even if it is switched off; it only has to be plugged in. The same applies to water – the pressure is present in the pipes irrespective of whether the stopcock is turned on or off. Voltage in electric wires also remains even if a device, which is plugged in, is not in operation. The higher the voltage, the larger the electric field that is created. However, it is fairly simple to ensure protection from even a large electric field, viz. it is stopped by walls, fences, trees and other natural or artificial obstacles. Therefore, the electric field strength is very low even inside buildings that are located near a power line.

Magnetic field H is created by electric current; therefore, unlike the electric field, the magnetic field occurs only when electric current moves through the wire. In the above example of the lamp, the magnetic field is created only when the lamp is switched on. The stronger the electric current, the stronger the magnetic field it creates. It is difficult to ensure protection from the magnetic field; unlike the electric field, the magnetic field is usually not stopped by physical obstacles.

In the case of power lines, the strength of both electric field and magnetic field greatly depends on the distance between wires and the ground. It is usually the strongest in the middle point between the towers where wires sag down and the distance to the ground is the shortest.

switched on
switched off

Electric field E

is created by every conductor or electric circuit (having voltage characteristics), even if electric current is absent from such conductor or electric circuit at the time.

switched on
switched off

Magnetic field H

is created by every conductor or electric circuit when electric current is present in such conductor or electric circuit.

Units of measure

The electric field strength is measured by Volts per metre (V/m), the magnetic field strength – by Amperes per metre (A/m) or by micro Teslas (μT) ($1 \mu\text{T}$ is equal to 0.8 A/m).

The strength of magnetic field created by devices that are used every day can reach the daily average of 0.16 A/m . In isolated cases these fields can be more intensive. This number can be compared to the Earth's magnetic field: it is different in various locations of the world and can range from approximately 24 to approximately 48 A/m . The Earth's magnetic field is approximately 100 V/m ; however, it can reach several thousand at the time of lightning. To be fair, it should be noted that the Earth's fields are static, while electrical installations create variable fields; therefore, they can be compared to one another only up to a point.

Comparison of intensity of electric and magnetic fields in our environment

	Electric field, kV/m	Magnetic field, A/m
400 kW	< 10 under the line	< 12 under the line
400 kW	< 0.5 within the 150 m distance	< 4 within the 150 m distance
	0.13 within the 30 cm distance	0.3 within the 30 cm distance
	0.12 within the 10 cm distance	0.2 within the 10 cm distance

	Electric field, kV/m	Magnetic field, A/m
	0.2 within the 30 cm distance	0.1 within the 30 cm distance
	0.13 within the 5 cm distance	5 within the 5 cm distance
	0.7 within the 3 cm distance	12-1200 within the 3 cm distance
	0.8 within the 10 cm distance	4 within the 10 cm distance

The strength of electric and magnetic field significantly declines when moving away from the middle axis of the power line and towards a transmission tower. The fields are the strongest in the middle point of the wire where the distance between the wire and the ground is the shortest.

WHAT DO WE NEED TO KNOW?

Noise generated by high-voltage power lines

Besides electromagnetic fields, high-voltage power lines also generate some noise. It is caused by the so-called volatility effect than can be observed during mist or rain. It is displayed by the bright glow of wires, which is especially prominent at night. The noise level is higher in high humidity or in heavy rain; however, it usually still does not exceed permissible levels.

The noise level generated by power lines ranged from 30 to 45 dB. This number is extremely low in comparison with other sources of noise that surround us. For instance, talking people generate noise levels of 55 dB, noise levels generated by commercial vehicles are as high as 93 dB, while noise levels of aircraft reach 145 dB.

Electric field strength variation

The strength of 400 kV electric field generated by a power line reaches 10 kV/m under the power line, while 23-28 m away from its axis drops below 1 kV/m.

Magnetic field strength variation

The strength of 400 kV magnetic field generated by a power line reaches 12 A/m under the power line and is much weaker than the recommended threshold level (80 A/m).

ELECTRICITY AND HEALTH

Electromagnetic fields in our environment

As it was mentioned before, electric fields created by external sources are easily screened by natural obstacles, e.g. walls of a building, while this is not true for magnetic fields. That is why electric fields are created in households almost solely by internal (e.g. electric appliances) rather than external sources.

In the majority of households the average daily magnetic field strength is approximately 0.01-0.16 A/m, subject to the quantity of domestic appliances used and other factors. In some cases the strength can be 0.32 A/m.

People working with power grids are usually affected by stronger magnetic field – by the average of several A/m per day. However, you do not have to work near electrical installations in order to be exposed to stronger electromagnetic field; for instance, the magnetic field strength on streets and roads under which various cables are laid can reach 0.8 A/m or more.

Scientific research

Scientific research is performed in order to establish the effect of electromagnetic fields on human health.

Epidemiological research is the most frequent and simple research during which the morbidity of certain diseases among different groups of people (most frequently based on the place of residence) is studied. However, such research is usually supported with statistical data; therefore, the results show the total effect of all factors affecting the reference group. Thus, it is not possible to individually assess to what extent a specific result is affected by, e.g. electromagnetic fields created by power transmission lines located nearby.

Over the last 30 years more than 60 epidemiological researches analysing the effect of electromagnetic fields with low frequency of 50 Hz (high-voltage power lines fall within this group) on human beings were performed globally. However, it still has not been scientifically **proven that there was a causal link between low frequency electromagnetic fields generated in the environment surrounding high-voltage power lines and substations, and serious long-term health problems of adults, including various forms of cancer.** This is also supported by the Environmental Health Criteria Monograph published by the World Health Organisation (WHO) in 2007, which analyses effects of electromagnetic fields on human body.

The International Agency for Research of Cancer (IARC) has a similar position. Low frequency electric fields are not classified as potentially carcinogenic, and only magnetic fields are deemed to be “potentially carcinogenic” and classified in Group 2B. This group contains the weakest factors and factors that are least likely. They include factors based on insufficient results of epidemiological research or animal testing. Besides low frequency magnetic fields, the group lists 230 various physicochemical factors, such as coffee, saccharine, gas emitted by petrol engine, etc.

Threshold values of electromagnetic fields

A lot of various studies of the potential impact of power lines has been carried out; however, their precise impact on humans has not been established yet. In order to prevent any negative impact, some countries limit the exposure of humans in areas of strong electromagnetic fields. Many countries have passed laws and regulations establishing specific threshold values of the strength of electromagnetic fields. As there is no scientifically proven evidence that electromagnetic fields caused by power lines have impact on human health, some countries, e.g. Spain and Denmark, do not apply any restrictions at all.

In different countries the permissible strength of **electric fields** ranges from 5 to 15 kV/m. In some cases stricter restrictions are applied inside buildings, viz. only 0.5 kV/m. Lithuania falls to the category of countries that apply stricter restrictions. Pursuant to the Lithuanian law, the permissible electric field cannot exceed 1 kV/m within the area of residential and public buildings, and 5 kV/m in other built-on areas. Different countries apply different restriction of the strength of **magnetic fields**. Lithuanian laws and regulations do not restrict magnetic fields.

European Council Recommendation 1999/519/EC proposes to limit the intensity of magnetic field to 80 A/m (100 μ T). The same level is also proposed in the Recommendations of the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Based on the results of measurements carried out in the 330 kV power line in Lithuania, the magnetic field strength under the wires does not exceed **6 A/m (7.5 μ T)**.

For more information about the impact of high-voltage power transmission lines:

www.who.int/peh-emf/project/en/

www.monographs.iarc.fr/ENG/Monographs/vol80/index.php

www.emfs.info/

www.quackwatch.com/01QuackeryRelatedTopics/emf.html

www.greenfacts.org/en/power-lines/index.htm

www.cancerwa.asn.au/resources/cancermyths/power-lines-myth

PROJECT PROGRESS

Presently, the first stage of the project is under way. During this stage the specific location and the area shall be selected for the planned power line. This shall be achieved through the following three procedures:

- special planning;
- strategic environmental assessment (SEA);
- environmental impact assessment (EIA).

All procedures are interrelated, and each procedure helps gradually narrow down potential areas by comparing them to one another, which leads to the final definition of the exact location of the power line.

The following issues must be solved in order to implement the project and build the power transmission line:

I	Select the most suitable location for the power line:	IV	Prepare the detail design documentation
	Conduct a strategic environmental assessment (SEA)		
	Carry out an environmental impact assessment (EIA)		
	Prepare the special territory planning document		
II	Agree with landowners whose plots the line will run through	V	Obtain a construction permit
III	Conduct surveys of the selected route: geodesic (by preparing compass-point photograph) and geological	VI	Construct the power line

How are these procedures interrelated?

The project starts with the special plan, which:

- defines the potential area for analysis (in this case – the northern section of Alytus county);
- collects the entire possible information about the analysed area;
- establishes the principles of planning (the concept is shaped);
- pursuant to the defined principles, narrows down the analysed area to several territorial “strips” for further analysis.

In this stage the baton is passed to the SEA procedure. It analyses and assesses potential territorial solutions raised by the special plan, thus identifying the solutions that are more suitable and worth of further analysis.

The results of the SEA procedure are further analysed within the framework of EIA. EIA shall result in a specific single territorial strip subject to the minimum environmental impact of the planned power transmission line.

Once the territorial strip that is the most suitable with regard to environment impact is identified, the special plan procedure shall be resumed. With the specific territorial strip in mind, a more precise path of the power line shall be proposed and presented for the assessment by public and coordination entities. Their comments shall be taken into consideration, and the final location of the future power line shall be identified.

SPECIAL PLAN (PLAN)
SEA
ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

PROJECT START

STRIP 1

STRIP 2

STRIP 3

STRIP 4

STRIP 1

STRIP 2

STRIP 3

STRIP 1

POWER LINE

Public participation

1

Comments and proposals regarding:

- size (boundaries) of the analysed area;
- assessment criteria;
- methodology;
- etc.

2

Comments and proposals regarding the following of the future EIA report:

- content;
- extent (particularity);
- methodology;
- etc.

3

Comments and proposals regarding the future SEA report:

- content;
- extent (particularity);
- methodology;
- etc.

4

After the EIA report is drawn up, a 10-working day period shall be assigned for the presentation of the report to the public and for the submission of comments and proposals to the entity that has drawn up the document.

IMPORTANT!

Upon the expiration of the 10-working day period a public meeting shall be held for the consideration of the proposals submitted by the public.

5

Proposals and comments regarding the preliminary “strips” stated in the concept of the Plan rather than regarding isolated plots.

IMPORTANT!

20 working days after the date of the announcement a public meeting shall be held for the consideration of the proposals submitted by the public.

6

General comments and proposals regarding the SEA report.

NOTE!

Proposals must be in line with the document defining the extent of SEA.

7

After the SEA report is drawn up, a 20-working day period shall be assigned for the presentation of the report to the public and for the submission of comments and proposals to the entity that has drawn up the document.

IMPORTANT!

Upon the expiration of the 20-working day period a public meeting shall be held for the consideration of the proposals submitted by the public. After the meeting no proposals regarding SEA shall be accepted.

8

After the public meeting the public may submit proposals and comments to coordinating authorities.

9

Proposals and comments regarding the proposed precise path of the power line, also regarding specific plots. Proposals and comments can be submitted within 40 working days after the date of the announcement. Upon the expiration of the time period the final meeting shall be held in which the entity that has drawn up the Plan shall summarise the received proposals, shall provide their assessment and – in the case of reasoned proposals – adjust the solutions of the Plan

IMPORTANT!

After the meeting no proposals regarding the solutions of the Plan shall be accepted.

SPECIAL PLAN (PLAN)

Preliminary stage	Plan development stage		
Preparatory works	Analysis of the current situation	Conceptual solutions	<p>Special plan is a document on territorial planning, which aims at achieving the following goals and objectives of the project:</p> <ul style="list-style-type: none"> ● to interconnect energy systems of the Baltic States and to increase the security of energy supply; ● to select the most suitable location for 400 kV overhead power transmission line between Alytus and the state border with Poland; ● to identify and reserve specific plots required for the planned power line, and to draw up regulations for their use, handling and security. <p>The special plan is also drawn up in individual stages; during each stage efforts are made to reduce the analysed area, which would finally lead to the selection of the precise location of the path of the power line.</p>
<p>Identification of the goals and objectives of planning; collection of planning conditions and information about the current situation; preparation of maps; analysis and summary of planning conditions; etc.</p>	<p>Formulation of the principles of planning and proposal of preliminary conceptual solutions.</p> <p>The goal of the concept is to narrow down the analysed area to the specific “strips” to be analysed.</p>		

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Document defining the extent of SEA		SEA report	
Drawing up of the document	Obtaining conclusions from entities	Drawing up of the document	Obtaining conclusions from entities
<p>Definition of the future content of SEA report, issues to be analysed, the extent and particularity of information to be provided. This document will allow to understand the complexity of the planned assessment and the assessment principles.</p>		<p>Assessment of the potential significant effect on the environment resulting from the implementation of the alternative conceptual solutions of the plan. The goal of SEA is to select the most promising territorial “strips” that are worth analysing more thoroughly.</p>	

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EIA programme		EIA report	
Drawing up of the document	Coordination with entities	Drawing up of the document	
<p>Definition of the future content of EIA report, issues to be analysed, the extent and particularity of information to be provided. This document will allow to understand the complexity of the planned assessment, the assessment principles, etc.</p>		<p>Assessment of the environmental impact of conceptual alternatives of the plan selected during the SEA procedure and the proposition of measures to reduce or prevent any negative impact. Also, assessment of the impact on public health and establishment of the size of the sanitary protection zone.</p>	

The key goal of the EIA procedure is to ensure that the planning of economic activity (PEA) takes into consideration (to the maximum extent) the potential environmental impact, not only to nature but to people and their well-being as well. The EIA procedure shall be performed in two stages:

- 1. EIA programme.** During this stage the future **content** of EIA report, i.e. issues to be analysed, the extent and particularity of information to be provided, shall be defined.
- 2. EIA report.** During the second stage the environmental impact assessment of the planned economic activity shall be performed, during which the direct and indirect **impact** of potential alternatives selected during the SEA procedure on various environmental and social components shall be **assessed**. Measures and actions shall also be proposed to reduce

or prevent any negative impact of the planned economic activity, and it shall be established whether the planned economic activity is admissible in the selected location with due consideration to its nature and environmental impact. EIA information and conclusions shall be provided in the EIA report.

The EIA procedure also assesses the potential impact on public health and establishes the most suitable size of the planned sanitary protection zone (SPZ) of the facility. To make the solutions of the Plan more specific, the provided sanitary protection zone shall not be allowed to include any residential structures; once the Plan is approved, no new residential developments in the said zone shall be allowed to be planned.

The EIA procedure shall take into consideration the conclusions of the SEA report and shall refer to potential solution alternatives provided in the Plan. In a way, the EIA procedure is a continuation of the SEA procedure, as the priority alternatives of PEA areas stated in the conclusions of the SEA report are further analysed in more detail. Territorial “strips” suitable for the building of the power line are compared with one another during the EIA procedure, and the most suitable “strip” is selected.

Land issues and negotiations

Land easement shall be established for plots provided in the special plan for the entire path width of the planned overhead power line between the connection points. It will provide the right to build underground and surface communications in shared use, to operate them and to provide maintenance to them.

Pursuant to the Law on Land, the land easement shall be the “right to a land parcel, or a part thereof, belonging to someone else that is granted to use this land parcel, or a part thereof, <...> to ensure proper utilisation of the object in favour of which the easement is established <...>” (Official Gazette *Valstybės žinios*, 2004, No 28-868). The land easement is not a **taking of the land for public needs, buy out**, etc., of the land; it establishes certain restrictions for the use of the plot, however the owner of the area does not change.

Final stage	
Specification of solutions	Validation of the plan
With due consideration to the conclusions of EIA, solutions shall be made more specific by proposing the preliminary path of the planned power line.	Coordination, inspection, approval and registration of the plan.

The key goal of SEA is to ensure that the solutions of the special plan are made with due consideration to potential effects on the environment on the strategic scale. SEA shall be performed in two stages:

- 1. Definition of the extent of SEA.** During this stage the future content of SEA report shall be **defined**, issues to be analysed, assessment methods, the extent and particularity of information to be provided shall be stated. All this information shall be provided in the document defining the extent of SEA;
- 2. SEA report.** SEA report shall **assess** potential solutions, which are considered in the special plan, with regards to the **environmental impact**; it shall also analyse issues raised during the previous stage of the definition of the extent of SEA. Assessment information and conclusions shall be provided in the SEA report.

The special plan singles out areas suitable for the power line, while the SEA procedure allows to compare them with one another and narrows them down to more or less suitable areas, thus reducing the number of options. The SEA procedure is thus based on information accumulated during the drawing up of the special plan.

Coordination with entities

Landowners shall receive financial compensation for the established land easements. The particular compensation amounts and negotiations with landowners shall commence only after the completion of the environmental impact assessment procedure, as only then the path of the power line will be established and introduced to the public for the first time.

Landowners on whose land the power line is expected to be built shall be informed about it by registered **mail, which shall also contain financial offers. It should be noted that mail shall be sent only to the persons who have declared their place of residence.** Once the mail is sent, all addressees shall be contacted in person as well.

For more information about territorial planning please refer to the following:

- Republic of Lithuania Law on Territorial Planning (Official Gazette *Valstybės žinios*, 2004, No 21-617);
- Order No 4-240/D1-330 *On the Approval of the Rules for Drawing Up Special Plans of the Development of Infrastructure (Heating, Gas and Oil Supply Networks)* of 11 June 2004 (Official Gazette *Valstybės žinios*, 2004, No 97-3589);
- Resolution No 1079 *On the Approval of Provisions of the Participation of the Public in the Process of Territorial Planning* of 18 September 1996 (Official Gazette *Valstybės žinios*, 1996, No 90-2099, as amended);
- Order No D1-262 *On the Approval of the Rules for Drawing Up and Issuing of Terms of Drawing Up of Territorial Planning Documents* of 7 May 2004 (Official Gazette *Valstybės žinios*, 2004, No 83-3028);
- Etc.

For more information about SEA please refer to the following:

- Order No V-12 *On the Strategic Environmental Assessment* of 31 January 2008 (Official Gazette *Valstybės žinios*, 2008, No 16-571);
- Resolution No 967 *On the Approval of the Description of the Procedure for the Strategic Environmental Assessment of Plans and Programmes* of 18 August 2004 (Official Gazette *Valstybės žinios*, 2004, No 130-4650).

For more information about EIA please refer to the following:

- Republic of Lithuania Law on the Environmental Impact Assessment of Planned Economic Activity (Official Gazette *Valstybės žinios*, 1996, No. 82-1965, as amended);
- Order No D1-636 *On the Approval of Provisions for Drawing Up of Drawing Up of Environmental Impact Assessment Programme and Report* of 23 December 2005 (Official Gazette *Valstybės žinios*, 2006, No 6-225);
- Order No D1-370 *On the Approval of the Description of the Procedure for Building Public Awareness and Participation of the Public in the Process of Environmental Impact Assessment of the Planned Economic Activity* of 15 July 2005 (Official Gazette *Valstybės žinios*, 2005, No 93-3472);
- Etc.

FREQUENTLY ASKED QUESTIONS

- What are the grounds for drawing up the special plan? The special plan is drawn up pursuant to Order No 1-190 *On the Drawing Up of the Special Plan for the Construction of 400 kV Overhead Power Transmission Line 'Alytus Transformer Substation – Border of the Republic of Poland'* of 12 October 2009 of the Minister of Energy of the Republic of Lithuania (Official Gazette *Valstybės žinios*, 2009, No 133-5802).
- Key participants of the project
- Planning organised by:** **AB Lietuvos energija**
Juožapavičiaus g. 13, 09310 Vilnius, Lithuania
tel.: (8 5) 278 2408, fax: (8 5) 212 6736
e-mail: info@lietuvosenergija.lt
- Project coordinated by:** **LitPol Link Sp. z.o.o.**
Wojciecha Górskiego 9, 00-033 Warsaw, Poland
tel.: +48 223233461
e-mail: litpol-link@litpol-link.eu
- Project documents drawn up by:** **UAB Sweco Lietuva**
V. Gerulaičio g. 1, 08200 Vilnius, Lithuania
tel.: (8 5) 219 6574, fax: (8 5) 261 7507
e-mail: LitPolLink@sweco.lt
- What is the procedure for considering proposals and comments of the public regarding EIA? Proposals and comments of the public regarding EIA shall be considered pursuant to Order No D1-370 *On the Approval of the Description of the Procedure for Building Public Awareness and Participation of the Public in the Process of Environmental Impact Assessment of the Planned Economic Activity* of 15 July 2005 of the Minister of Environment of the Republic of Lithuania (Official Gazette *Valstybės žinios*, 2005, No 93-3472). Once proposals and comments of the public are received, they shall be registered and considered. Afterwards, a summary of the proposals of the public shall be prepared, while persons who submitted proposals shall receive answers in writing.
- Why isn't the power line designed to run along the boundaries of plots, through unattended plots or the already cut forests? It is extremely difficult to plan a power line that would run exclusively along the boundaries of plots, through barren or unused fields, without cutting forests or cutting forests only on sites of the existing cuttings. In such case the direction of the power line must change every 50-100 m, and frequently this is simply impossible to do. Also, one should not forget that this would require much more funds. **It is worth noting** that the power line that runs through a plot shall not physically divide such plot into parts; the plot shall remain in one piece and economic activity can be continued in such plot.
- What if there were plans to build residential structures on this plot? Due consideration shall be given only to those plans to build residential structures that can be proved by the already drawn up territorial planning documents or territorial planning documents that are currently being drawn up. This would include detailed plans or rural development land use planning projects. These documents must be submitted to the Planning Authority or the entity in charge of the drawing up of the special plan to the address stated in clause 2.

Why will an overhead power transmission line be built rather than underground cable?

The table below provides the comparison of the two technical alternatives

	Overhead power line	Underground cable
Required area	The width of the power line can be 19 m, the width of the protection zone can be 30 m to both sides from the outside wires, and the total width can be approximately 80 m.	An underground cable is built in the depth of about 1.5 m and it needs a 13-50 m wide land strip.
Land use restrictions	The answer is provided below.	Land excavation cannot be deeper than 0.5 m at the site of the cable. Neither trees nor bushes can grow above the cable. No vehicles can be driven above the cable if the cable is unshielded.
Failures	Failures are usually detected within several hours. The power line is inspected by driving along the power line path.	The elimination of cable failures takes approximately 25 times longer than in the case of overhead power lines. In certain cases it can take several days or even weeks.
Typical failures	Lightning; a physical contact between any object and a phase wire; failure of an insulator, etc.	Insulation damages, especially caused by long-term overload and the resulting overheat.
Repair (operation)	Following a repair, an overhead power line can be operated immediately at its full capacity.	Following a repair, the power of a cable is gradually increased and reaches its full capacity approximately within a week.
Environmental impact	Even though an overhead power line is well visible (unlike an underground cable), its construction involves a relatively low degree of soil damage.	The building of an underground cable involves extensive excavation works and potential damage to the rich layer of soil. Accidents may involve the spillage of oil.
Insulation	Special insulators are used for the insulation of wires that operate as an obstacle between the wire and the tower. Wires cool down naturally by radiating heat into the atmosphere.	Cables are insulated with oil-impregnated paper and polyethylene cover. Heat is radiated into the surrounding soil, which is a much poorer heat conductor and worse coolant, and this may lead to overheat of cables.
Costs	One kilometre of 400 kV overhead power line costs approximately LTL 1-1.5 million.	One kilometre of 400 kV underground cable may cost 15-25 times more than the power line.

The interconnection with Poland is not the only project implemented by AB Lietuvos energija. Lithuanian power transmission grids are relatively old; therefore, they have to be renovated. Furthermore, the decommissioning of Ignalina Nuclear Power Plant has led to the misbalance of power generation and power consumption centres; therefore, a need for new internal links has arisen. All said projects are fully or partially financed by Lithuanian customers who pay the set electricity tariff. This obligates AB Lietuvos

energija to implement all projects with great responsibility, by thoroughly considering all options and avoiding any unnecessary expenses. Funds assigned for the implementation of projects are limited; therefore, if unreasonably expensive technical solutions are made, it can be impossible to implement some of the said projects or they can be implemented only by increasing the electricity tariff.

Are the maps used for the planning of the power line new and correct?

Maps of the analysed areas are drawn up using the latest georeferenced databases that are managed by the Lithuanian Geological Survey, the Department of Protection of Cultural Values, etc. The said authorities handle, revise and, if necessary, correct information on a regular basis. Information regarding incorrectly marked or missed facilities should be submitted to the authority drawing up the project using the address specified in this chapter. The fact that maps are drawn up using data provided by several different authorities and are continuously improved helps ensure the highest possible degree of accuracy and correctness of these maps.

What is the procedure for considering proposals and comments of the public regarding SEA and the special plan?

- Proposals and comments regarding SEA shall be considered pursuant to Order No D1-455 *On the Approval of the Description of the Regulation for the Participation of the Public in the Strategic Environment Assessment of Plans and Programmes and for the Information of Entities of Assessment and Member States* of 27 August 2004 of the Minister of Environment of the Republic of Lithuania (Official Gazette *Valstybės žinios*, 2004, No 136-4970);
- Proposals and comments regarding the special plan shall be considered pursuant to Government Resolution No 1079 *On the Approval of Provisions of the Participation of the Public in the Process of Territorial Planning* of 18 September 1996 (Official Gazette *Valstybės žinios*, 1996, No 90-2099; Official Gazette *Valstybės žinios*, 2004, No 112-4189; Official Gazette *Valstybės žinios*, 2007, No 33-1190).

The planning authority shall analyse and consider all received proposals and shall assess them together with the entity in charge of the drawing up of the plan. The planning authority shall make a decision on the approval or rejection of proposals. It must provide a **response** in writing to persons who submitted proposals not later than within **30 working days** from the date of the receipt of proposals. If a proposal is rejected, the reason behind such rejection must be stated and explained.

When will the public meetings be held?

Public meetings will be held for the consideration of the solutions of the special plan, SEA and EIA documents as well as submitted proposals. Notices of meetings are published in the national and in the local press of Alytus and Lazdijai regions, posted on bulletin boards of municipalities and neighbourhoods where the performance of the economic activity is planned, also announced in websites of the planning authority (AB Lietuvos energija) and the project administrator (LitPol Link). Notices can additionally be announced in websites of public authorities (the Ministry of Energy of the Republic of Lithuania, Alytus county, municipalities, etc.). Information about meetings to be held can also be obtained from entity in charge of the drawing up of the project (UAB Sweco Lietuva). Information about public meetings regarding the consideration of the SEA report must be published at least 20 working days before the meeting and – in the case of the consideration of the EIA report or territorial planning documents – at least 10 working days before the meeting.

What is the procedure for holding a public meeting?

Proposals and comments received prior to the start of the meeting shall be discussed at the meeting, any changes made shall be presented to the public and explanations as to why some of the proposals are unacceptable shall be provided. Also, questions asked during the meeting shall be answered. Participants of the public meeting or their authorised representatives shall be registered; viz. a list of participants shall be drawn, and the minutes of the meeting shall be taken. If nobody arrives to the meeting within one hour from the start of the meeting, it shall be assumed that the public is not interested in the planned economic activity and that the procedure of the public meeting is complied with, which shall be recorded in the minutes.

What is the procedure of taking minutes and of getting access to the minutes?

During a public meeting, all proposals and comments shall be recorded in writing. Thus, persons concerned shall be provided with the opportunity to find out the issues and topics discussed at the meeting. However, personal data of the participants cannot be made public. General information, such as the date and the venue, the list of participants, the title of the document considered (e.g. EIA) and a short presentation of the project shall be included into the minutes. The document shall provide the consideration of proposals and comments received prior to the start of the meeting, answers to questions asked during the meeting, and information about the procedure of getting access to the minutes. The minutes of the public meeting held to discuss the special plan or SEA shall be taken no later than within three working days, and the minutes of the public meeting held to discuss EIA shall be taken within five working days from the date of the meeting. The latter minutes

shall be signed by the chairman and the secretary, while the minutes of the meeting held to discuss the special plan or SEA shall be signed by the planning authority or its authorised person. The public shall get access to the minutes within three working days after the minutes are signed. If the public is dissatisfied with the content of the minutes, it can submit comments in writing which shall be analysed by the organisers of the meeting. Comments regarding the minutes shall always be annexed to the minutes irrespective of whether such comments are approved or rejected.

What rights are granted to power grid staff after the land easement agreement is concluded?

Power grid staff shall be granted the right to freely access the zone of the overhead power transmission line and – at the time of operation and repair – to drive through and excavate the land. However, the landowner or the land user shall be given an advance notice. The cutting of trees located behind the protection zone shall be authorised only in agreement with the forest manager or the forest owner and after documents for the cutting of trees are taken care of following the established procedure (Official Gazette *Valstybės žinios*, 1992, No 22-652, as last amended).

What restrictions will be established in the power line protection zone?

Pursuant to the provisions of Resolution No 343 *On the Approval of Special Land and Forest Use Conditions* of 12 May 1992 of the Government of the Republic of Lithuania (Official Gazette *Valstybės žinios*, 1992, No 22-652, as last amended), the following shall be **prohibited** in the power line protection zone:

- Construction of playgrounds, stadiums, market places, public transport shelters, sites for all types of vehicles and machinery, organisation of events attracting large crowds;
- Warehousing of fodder, straws, fertilisers, peat, firewood, etc.;
- Construction of petrol stations, warehouses for the storage of fuel or lubricants;
- Construction of landfills, contamination of soil and atmosphere pollution, making of fires;
- Obstruction of roads leading to power grid facilities;
- Flying of kites and other flying objects that may damage the insulation of the overhead power line;
- Any stops of vehicles (except for the railway transport) within the protection zones of 330 kV and higher voltage overhead power lines.

The following shall be prohibited in the power line protection zone **without a written authorisation** of a power grid company:

- Construction, major repairs, reconstruction or demolition of buildings, structures and building services;
- Mining, loading, earth excavation and levelling, explosion, land reclamation and watering works;
- Planting or cutting of trees and bushes;
- Driving vehicles or other machinery the height of which (with or without the cargo) is 4.5 m or more above the road surface;
- Arrangement of cattle pens, installation of wire enclosures or metal fences.

Activity restrictions shall only apply in the section of the plot for which the land easement is established. The remaining section of the plot shall not be subject to any restrictions; therefore, any unrestricted activities can be continued.

Who will pay the tax on land for the section of the plot for which the land easement is established?

The tax on land is paid for agricultural land. The planning authority, AB Lietuvos energija, is not purchasing the land; it only seeks to legalise its possibility to use a section of this land by means of the land easement. With due consideration to the fact that even the establishment of the land easement for a section of plot the plot will remain solid and owned by the same landowner who will be able to continue agricultural activities, the landowner will continue to pay the tax on land.

How will the damages caused by power line failures be paid?

Damages caused to land plots by power line failures will be paid following the procedure prescribed by the Civil Code of the Republic of Lithuania.

How long will the power line construction works continue for?

Construction works are expected to be completed by 2015. The construction of one transmission tower takes the average of two weeks to several months.

Who will make the final decision regarding the admissibility of the planned economic activity?

The decision shall be made by the competent authority, which – in the case of the power line construction – is Alytus Regional Environment Protection Department. Having made the decision regarding the admissibility of the planned economic activity, this authority shall announce information in its website and in the website of the Ministry of Environment within 10 working days.

How can I find out whether transmission towers will be on my land plot?

Decisions regarding specific technical characteristics (such as the type, the height, the occupied area, the site, etc., of transmission towers) will be made during the drawing up of the detail design documentation. This will be done at a later stage of the project, which shall commence only after the approval of the special plan.

Why isn't the land being bought out, i.e. taken for public needs?

Pursuant to the Republic of Lithuania Law on Land (Official Gazette *Valstybės žinios*, 2004, No 28-868), the taking of the land for public needs is buying out of land (upon adequate compensation) from the owners of the land. Land is being bought out if it is proved that such land is required for public needs, and such decision is made by a county governor. Thus, the Republic of Lithuania Law on Land explicitly states that land can be taken for public needs from the owners of private land only in exceptional cases. It must be proved that public needs can be met only if the specific land plot is taken. This procedure is more frequently applied when roads or railways are being built. In the case of a power line, transmission towers need a small area of land and they do not physically divide the plot.

How is the land easement established?

Article 4.39(1) of the Civil Code provides that the right of ownership may be limited by the will of the owner, by law, or by a court judgement. It is a general norm. It is further elaborated by Article 4.124(1) of the Civil Code, which states that a land easement may be established by laws, transactions, by a court judgement or by an administrative act.

Will any compensation be paid to the owners of land plots?

AB Lietuvos energija will pay compensation for the established land easements. The principles of establishing the compensation and terms of agreement shall be stated separately.

Does the establishment of the land easement violate the right of ownership of the owners of the land plot?

Pursuant to the Constitution of the Republic of Lithuania, the State of Lithuania is socially-minded. Article 23 of the Constitution states that “Property shall be inviolable. The rights of ownership shall be protected by laws”; however, part 3 of the same Article has an exclusive provision stating that “Property may be taken over only for the needs of society according to the procedure established by law and shall be justly compensated for”. This means that the rights of ownership is not absolute and that the needs of society should have the priority over personal needs. In its ruling of 24 January 1996, the Constitutional Court emphasised that the activity of individual objects usually have a more significant importance for the functioning of the national economy and the performance of the generally important functions (such as post, telegraph, power supply, etc.). It is acknowledged that power supply facilities and companies that manage these facilities meet special needs of society. Therefore, the need for power supply is based on public interest, which justifies the restriction of the right of ownership to a land plot used for power transmission or distribution facilities (Ruling No 3K-3-315/2007 of the Supreme Court of Lithuania).

How wide does the land strip need to be for designing the power line?

A transmission tower of the power line shall occupy the area of 19 m; additionally, a protection zone stretching 30 m to both sides from the outside wires shall be established. Thus, the land strip with the width of approximately 80 m shall be required for designing the power line.

Height of the transmission tower shall not exceed 73 m

Transmission capacity shall not exceed 1000 MW

30 m*

30 m*

Urban area

Distance established by HN 104:2000 (250 m)**

max 19 m

SPZ 30-250 m***

Urban area

* The purpose of the protection zone is to provide adequate conditions for the operation of overhead power lines and to prevent any accidents.

** If local conditions prevent from meeting the requirement of HN 104:2000, overhead power lines can be brought closer to urban (built-on) areas by the maximum of 30 m by establishing a sanitary protection zone (SPZ).

*** The precise boundaries of SPZ shall be established during the environmental impact assessment procedure.

NOTE:

This publication is of an explanatory nature only.

Information has been prepared using material provided in *Linie i stacje elektroenergetyczne w środowisku człowieka* published by PSE Operator S.A.

This publication has been published on paper manufactured from timber from afforested and responsibly maintained forests

Scheme of potential strips for the planned 400 kV overhead power line

LEGEND

PEA EIA corridor

Strip for the planned 400 kV overhead power line

Areas covered with trees and bushes

River, lake, pond and their protection zones

Boundaries of the built-on area

Boundary of the neighbourhood

National road

Regional road

Local road

Railway

River

Scale 1:130,000

Administrative division of Alytus and Lazdijai regions

Scale 1:650,000

LEGEND

Boundary of the neighbourhood

Alytus region municipality

Lazdijai region municipality

PEA EIA corridor