

NON-TECHNICAL SUMMARY

PROPOSED ACTIVITY: POWER TRANSMISSION LINE RATED 2x400 kV BYSTRÍČANY - KRIŽOVANY

PROPONENT: SEPS A.S., (SLOVAK ELECTRICITY TRANSMISSION SYSTEM,
PLC.)

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1. Introduction	2
2. Project description	2
2.1 Purpose of the project	2
2.2 Brief technical description of the project	2
2.3 Site location	3
2.4 Rationale for the proposed solution	5
2.5 Reasoning for the routing	5
3. Environmental assessment process	6
3.1 Environmental impact assessment of the proposed activity	6
3.2 Involved stakeholders and affected parties	7
3.3 Public consultations	8
3.4 Final Record and Expert Review	9
4. Environmental assessment	13
4.1 Supporting document and partial surveys	13
4.2. Current state of the environment in the affected area	14
4.3 Identified impacts	19
5 Health and safety risks	38
6 Follow-up environmental supervision and monitoring	39
7 Conclusions	39

1. Introduction

This non-technical summary provides a brief overview of the performed **environmental impact assessment and its single steps**, including involvement of stakeholders and affected parties, identification of basic impacts of the proposed activity on the environment and population, as well as information on results of this assessment including proposed measures to ensure environmentally appropriate project implementation.

The particular steps of the whole process are published regularly on the web pages of the proponent www.sepsas.sk (<http://www.sepsas.sk/seps/VedenieBystricanyKrizovany.asp?kod=525>), on www.enviroportal.sk (<http://www.enviroportal.sk/sk/eia/detail/vedenie-2x-400-kv-lokalita-bystricany-krizovany>), as well as on the web pages of affected municipalities, on public notice boards or in other ways.

2. Project description

2.1 Purpose of the project

The purpose of the project is construction of 2x400 kV power line of 80 km in length, between locality Bystričany and 400 kV distribution point (hereinafter as “DP”) in Križovany.

The new 2x400 kV power line will be constructed mainly **in the line instead of the existing 220 kV power line V274 Bystričany – Križovany, which will be dismantled**; and also partially in new sections of 9.6 km in total length, which bypass the built-up areas of municipalities which the original 220 kV power line crosses.

By the realization of the purpose, **new 400 kV** connection Križovany – Bystričany will be created, as the part of the program of modernization and improvement of national transmission system and gradual exchange of outdated 220 kV transmission system in the SR for 400 kV one.

2.2 Brief technical description of the project

The proposed project represents the first stage of the planned connection of junction point Bystričany to the 400 kV transmission system (H. Ždaňa – Bystričany - Križovany).

The proposed activity is the dismantling of 220 kV power line and the construction of the new 400 kV power line, without additional technical infrastructure.

The new 2x400 kV power line of approximately 80 km in total length, will be constructed on galvanized steel towers in combined configuration of DONAU and SUDOK type, with insulator sets conforming to electric strength tests, radio interference and mechanical parameters complying with applicable standards. Insulator sets with surface corresponding to the air pollution level will be used.

Technical design of the construction must conform to the applicable standards and requirements for power line operation.

Total length: 80 km, thereof:

- in the corridor along the power line of 2x110 kV V8769/8770: 4.5 km (extension of existing protected area by 50 m for the SUDOK type of galvanized steel tower or by 60 m for the DONAU type of galvanized steel tower)
- in the corridor instead of the power line of 220 kV no.: 274: 70.4 km (extension of existing PZ by 2 x 7 m for the SUDOK type of galvanized steel tower or by 2 x 12 m for the DONAU type of galvanized steel tower)
- in new corridors: 5.1 km (new PZ in the width of 69 m for the SUDOK type of galvanized steel tower or 78 m for the DONAU type of galvanized steel tower)

(Note: the width of extension of PZ varies according to the used tower type)

Total number of towers: 270

Thereof: reinforcing towers (V+RV): 40 - 45
 load-bearing towers (N): 225 - 230

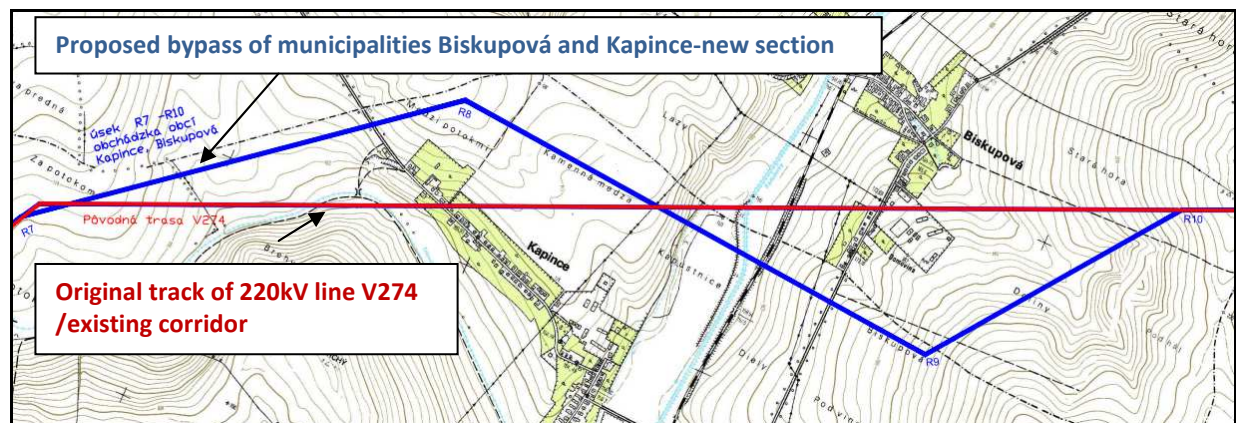
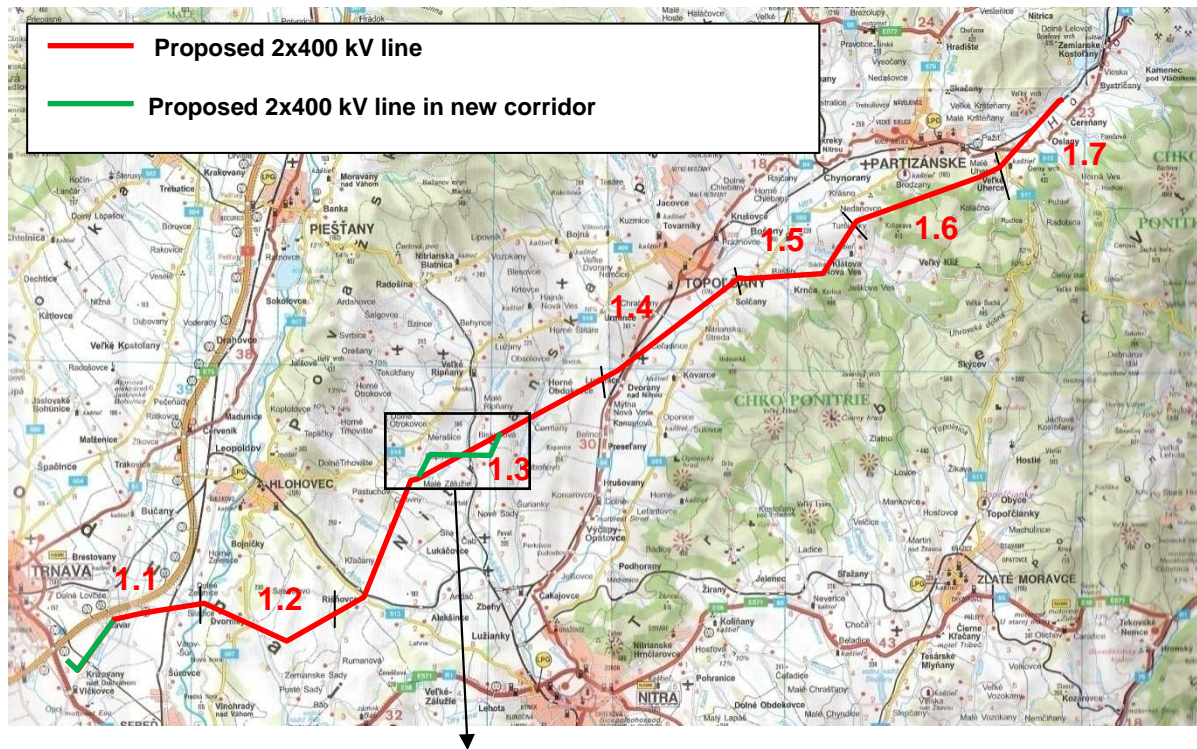
2.3 Site location

The new 2x400 kV power line will be constructed mostly in the same routing as the existing line V274 Bystričany – Križovany. Only in its initial section of 4,5 km in length (from DP Križovany) the line will run in corridor next to the existing 2x110 kV line V8769/8770, while it will join the route of line V274 at tower No. 19 (by D1 motorway).

The 220 kV line V274 will be almost completely dismantled (from the tower No. 19 up to the point of mouth in front of DP Bystričany) prior to construction of the 2x400 kV line, i.e. it will be replaced by new 2x400 kV line in the same routing. The original PZ of V274 line will be thus extended from current 55 m up to 78, resp. 69 m.

The proposed linear construction of overhead electric power line will be situated in the track of the existing corridor of the 2x110 kV line V8769/8770, running in general southwest – northeast direction gradually through cadastral areas of municipalities: Križovany nad Dudváhom, Zavar and Dolné Lovčice and then in the existing corridor of 220 kV line V274, gradually crossing cadastral areas of municipalities: Dolné Lovčice, Siladice, Dolné Zelenice, Dvorníky, Sasinkovo, Kľačany, Rišňovce, Lukáčovce, Nové Sady, Dolné Trhovište, Kapince, Biskupová, Malé Ripňany, Čermany, Horné Obdokovce, Ludanice, Dvorany nad Nitrou, Chrabrany, Nemčice, Nitrianska Streda, Solčany, Topolčany, Práznovce, Bošany, Klátova Nová Ves, Nedanovce, Turčianky, Krásno, Brodzany, Partizánske, Malé Uherce, Veľké Uherce, Pažiť, Oslany, Čereňany and Bystričany.

Figure: Routing of the proposed line



Based on the standpoint of municipality Biskupová on the Preliminary Environmental Study and consequently based on the scoping (Scope of Assessment) determined by the MoE SR a new short section (route alternative) was proposed when conducting the Environmental Impact Statement – bypass of municipalities Kapince and Biskupová. The proposal resulted from the conflict between the 2x400 kV line running in the existing corridor of 220 kV line and the built-up areas of municipality. New routing of the 2x400 kV line was proposed in cooperation with the municipality in order to avoid intervention into the built-up area of municipalities Kapince and Biskupová. This short section of the route represents a completely new corridor.

As the route is proposed in one single alternative – this option was compared /and evaluated/ with the zero alternative, i.e. with situation that would occur, if the proposed activity would not have been carried out. This comparison has confirmed the suitability and necessity of realisation of the proposed activity in routing with bypass of municipalities Biskupová and Kapince.

Site location and nature protection

The new 2x400 kV line between Bystričany and electric station Križovany is situated in mildly undulated terrain of Podunajská pahorkatina, being intensively used for agricultural purposes, as well as in intensively used undulating hills (Nitrianska pahorkatina) and flatland (bottom land of Nitra river). Short section of the route within the existing corridor passes through the edge of the Tribeč mountain.

Regarding nature protection the routing mostly passes through landscape under the first /general/ degree of protection, and in short sections it also runs through protected areas (Protected Landscape Area Ponitrie under the second degree of protection of 1700 m in length, Special Protected Area Tribeč – Natura 2000 site of 2500 m in length).



Sections of line crossing edges of protected areas

2.4 Rationale for the proposed solution

The proposed 2x400 kV power line represents a new element in the transmission system, which main benefits and reasons for realisation are the following:

- operational safety of 400 kV network
- interconnections of main junction points of the network
- ensuring new power supply quality
- strengthening capabilities of national electricity transmission network
- strengthening capabilities of trans-boundary electricity transmission network
- enhancing the development potential of the Slovak republic

2.5 Reasoning for the routing

In its entire routing the new 2x400 kV line makes use of the existing corridors of lines 2x110 kV V8769/8770 and in particular of the 220 kV line V274, so the spatial requirements of the new line construction are minimized and creation of new corridors in the landscape are not needed. In connection with this intention, these existing corridors will be extended. Taking into account the current existence of line corridors in the landscape, another route alternative for the 2x400 kV line would be impractical resp. undesirable for technical, economical, as well as environmental reasons.

Routing of the new 2x400 kV line in cadastral area Kapince and Biskupová and similarly in cadastral area Zavar was proposed in cooperation with municipalities and in line with interests of inhabitants, whereby current burdens will be eliminated as well.

3. Environmental assessment process

3.1 Environmental impact assessment of the proposed activity

The environmental impact assessment process was introduced into the Slovak legislation by the Act no. 17/1992 Coll. It was further improved by Act no. 127/1994 Coll. on assessment of environmental impacts which took into account the provisions of the EU EIA Directive (85/337/EEC) as amended by the Directive 97/11/EC. After Slovakia's Accession to the EU the environmental impact assessment process was amended by Act 24/2006 Coll. which is now fully harmonised with EU legislation.

Assessment of plans and projects which could significantly affect Natura 2000¹ sites are set down in Article 6 of the Habitats Directive 92/43/EEC. This Directive was implemented into Slovak legislation by Section 28 of the Slovak Nature and Landscape Protection Act 543/2002 Coll. This legislation requires projects which could affect the Natura 2000 sites in Slovakia to be assessed. The subsequent studies relating to the assessment the potential effects of the Project on the Natura 2000 sites are identified in the table in section 4.2 of this NTS.

The EIA process:

Stage	Description	Date / Author	Public access
1. Preliminary environmental study ("Zamer")	Basic information of proposed activity; variants; actual status of environment in affected territory; assumed affects on environment (specifically land, energy and raw material demands on the environment); evaluation of advantages and disadvantages of proposed alternatives; proposal of mitigation measures	7.12. 2011 Party proposing assessed activity ENVIRO-TATRY	Information on "Zamer" advertised by the municipality officials in each affected municipality, the public are invited and have the right to see, review and comment
2. Scoping of assessment	Decision on scope and timeline of environmental impact assessment	23.2.2012 Ministry of Environment	Clearly defined set of measurements and assessments to be made before EIA report is conducted
3. EIA study „Správa o hodnotení“ Environmental Impact Statement	Detailed analysis of environmental impacts of various variants and zero variant (i.e. "do nothing" variant)	23.7.2012 Party proposing assessed activity ENVIRO-TATRY	Publicised at the Ministry of Environment's website and the local municipality offices; public have the right to review and to submit comments either in writing or at public hearings
4. Public Consultations	Public consultations to the proposed activity in affected municipalities	3.-4.September 2012 details in chapter 3.3	Providing information to general public during several meetings announced sufficiently in advance, providing information about the activity, impacts, and consultations with municipalities. Records from consultations with comments of citizens provided to the MoE
5. Expert review	Opinion of an independent expert on the EIA study	December 2012 Independent expert Assoc. prof. K. Pavličková, PhD.	An independent review of the study and its conclusions

¹ Natura 2000 sites are those identified as sites of Community importance under the Habitats Directive (92/43/EEC) or classified as Special Protection Areas (SPAs) under the Birds Directive (79/409/EEC).

Stage	Description	Date / Author	Public access
6. Final statement (Final record/opinion)	Recommendation and rationale of preferred variant and determination of conditions under which the preferred variant may be permitted. It also contains replies to public comments.	Ministry of Environment 19.12.2012	Publicised on the Ministry of Environment's website and the local municipality offices

3.2 Involved stakeholders and affected parties

Several state authorities and municipalities were involved in the EIA process and provided with regular information and complete documentation (Preliminary Environmental Study, Environmental Impact Statement), including the decisions of the competent authority – Ministry of Environment (MoE) . The opportunity (and obligation) to submit standpoints on each single stage of the EIA process to the competent authority was given to all stakeholders.

Naturally, public was regularly provided with information about the whole process in compliance with the Aarhus Convention. Individual steps of the process were regularly published on the proponent's webpage www.sepsas.sk, on www.enviportal.sk and on the websites or public bulletin boards of each affected municipality, etc.

Stakeholders having the possibility to submit their opinions and standpoints on the activity and being regularly informed about the process are the following:

Affected authorities:

Office of the Trnava self governing region, Office of the Nitra self governing region, Office of the Trenčín self governing region, Regional environmental Office in Trnava, Regional environmental Office in Nitra, Regional environmental Office in Trenčín, Regional lands Office Trnava, Regional lands Office Nitra, Regional lands Office Trenčín, Regional Office of road transport and roads Nitra, Regional Office of road transport and roads Trenčín, Public Health Authority of the Slovak Republic, Bratislava, Regional Directorate of fire and police brigades Trnava, Regional Directorate of fire and police brigades Nitra, Regional Directorate of fire and police brigades Trenčín, District Environmental office Trnava
District Environmental office Trnava – branch office Hlohovec
District Environmental office Nitra
District Environmental office Topoľčany
District Environmental office Prievidza
District Environmental office Prievidza branch office Partizánske
District Office Trnava - department of civil protection and crisis management
District Office Nitra - department of civil protection and crisis management
District Office Topoľčany - department of civil protection and crisis management
District Office Prievidza - department of civil protection and crisis management
District forest office Trnava
District forest office Nitra
District forest office Prievidza
District mining office Bratislava
District mining office Prievidza
District Office of road transport and roads Trnava
District Office of road transport and roads Nitra
District Office of road transport and roads Topoľčany
District Office of road transport and roads Prievidza
Regional Monuments board Trnava
Regional monuments board Nitra
Regional monuments board Trenčín
Archaeological Institute of the Slovak Academy of Science, Nitra
Railway Regulatory Authority, Bratislava
National Motorway Company, Plc., Bratislava
Slovak Water Management Enterprise, state enterprise, branch office Piešťany
Civil Aviation Authority of the Slovak Republic
State Nature Conservancy of the Slovak Republic, Banská Bystrica
Ministry of Environment of the Slovak Republic – Department of nature protection and landscape development
Water management construction, state enterprise

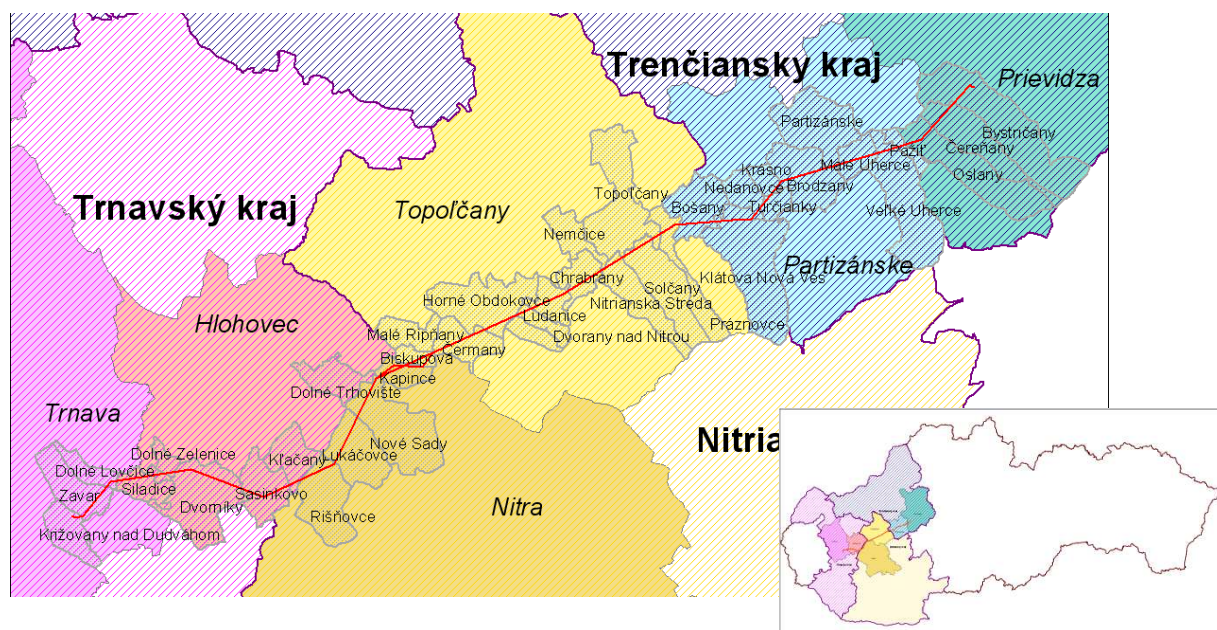
Affected municipalities: Križovany nad Dudváhom, Zavar, Dolné Lovčice, Siladice, Dolné Zelenice, Dvorníky, Sasinkovo, Kľačany, Dolné Trhovište, Rišňovce, Lukáčovce, Nové Sady, Kapince, Biskupová, Malé Ripňany, Čermany, Horné Obdokovce, Ludanice, Chrabrany, Dvorany nad Nitrou, Nitrianska Streda, Nemčice, Topoľčany, Solčany, Práznovce, Bošany, Klátova Nová Ves, Nedanovce, Turčianky, Krásno, Brodzany, Partizánske, Malé Uherce, Veľké Uherce, Pažiť, Oslany, Čereňany, Bystričany

Sectoral authority: Ministry of Economy of the Slovak Republic

Competent authority: Ministry of Environment

One organisation proactively participated in the EIA process: Agricultural Cooperative - Poľnohospodárske družstvo Nitrianska Streda. Other NGOs were not interested to be involved in the EIA process

Figure: Affected municipalities, districts and regions according to the administrative classification



Standpoints of all affected parties on the preliminary environmental study were evaluated and incorporated, where appropriate, into the Environmental Impact Assessment (based on a standpoint of municipality the bypass of Biskupová and Kapince and Bystričany was introduced – more details to be found in text dealing with the Final Record).

Standpoints on the Environmental Impact Assessment are reflected in the Expert Review and Final Record issued by the MoE.

3.3 Public consultations

EIAs were discussed at public consultations which were prepared in cooperation with the relevant municipalities. Minutes, which summarise the agenda, questions raised by the participants and the responses of the responsible representatives, were written for each public consultation.

A summary of public consultation undertaken on the EIA Reports can be seen in the Final Statements. Minutes which were written for each of the public consultations are archived at the Ministry of Environment in the official files. They contain the place and date of each public consultation, questions raised by the public and the corresponding responses. The most frequent questions related to property, measures to mitigate the impact of the Project during the construction period and noise mitigation measures during the operation period.

Common public consultations were held for several municipalities upon agreement. The table below summarizes common public consultations:

Location	Affected municipalities	Date	Notes	Summary of public comments
Bystričany - Križovany				
Rišňovce	Križovany nad Dudváhom, Zavar, Dolné Lovčice, Siladice, Dolné Zelenice, Rišňovce Dvorníky, Sasinkovo, Kľačany, Dolné Trhovište, Lukáčovce, Nové Sady, Kapince	3.Sep 2012	Attendees:14	Interest in information on the line routing, on process of the property settlement for the building permit and on technical realisation of the project
Topoľčany	Topoľčany, Biskupová, Malé Ripňany, Čermany, Horné Obdokovce, Ludanice, Chrabrany, Dvorany nad Nitrou, Nitrianska Streda, Nemčice, Solčany, Práznovce	4.Sep 2012	Attendees:11	Interest in information regarding the planned construction of R8 motorway close to the line routing and the technical realisation of the project, Request for the realisation of bypass of municipalities Biskupová and Kapince and other measures related to the construction works within the Special Protected Area Tribeč was repeated.
Partizánske	Partizánske, Bošany, Klátova Nová Ves, Nedanovce, Turčianky, Krásno, Brodzany, Malé Uherce, Veľké Uherce, Pažiť, Oslany, Čereňany, Bystričany	4.Sep 2012	Attendees:7	Interest in information regarding the way of property settlement for the building permit. Additionally, modification of the routing of new 2x400 kV line outside the original 220 kV line corridor between breaking points R12 and R14 was proposed as an environmental measure. The aim is to eliminate impacts of the inappropriate routing in the original 220 kV line corridor.

The involvement of the public and the details of the participation of involved parties is described in detail in Stakeholder Engagement Plan (SEP), which will be updated and published regularly on the web pages EBOR <http://www.ebrd.com/pages/country/slovakrepublic.shtml>).

You can find more information about the Project also on the web pages of SEPS, a.s. www.sepsas.sk in the section: Documents – Assessment of impacts of buildings on the environment (<http://www2.sepsas.sk/VedenieBystricanyKrizovany.asp?kod=525>).

3.4 Final Record and Expert Review

The Expert Review was elaborated by Doc. Katarina Pavličková, CSc. independent expert and competent person for environmental impact assessment in December 2012 on the basis of:

- submitted documentation: Preliminary Environmental Study, Environmental Impact Statement
- all standpoints on the proposed activity received from involved/affected parties
- minutes of public consultations
- additional comparative study of the route section crossing the Vah river
- additional information
- own investigations

In her review the expert stated, that the elaborated EIA documentation (Environmental Impact Statement) is of good or very good quality and in compliance with the existing legislation.

At the same time the **feasibility of the proposed route alternative** was declared, with possible modifications of routing (proposed measures):

- **bypass of Biskupová and Kapince** (based on the request of municipality Biskupová)
- **modification of the route direction – optimisation regarding the orientation of affected parcels in cadastral area Bystričany** (according to the request of municipality Bystričany)
- **routing of the new 2x400 kV line outside of the original 220 kV line corridor between breaking points R12 and R14** (measure for elimination of impacts caused by not suitable routing of the original 220 kV line, namely: conflict of PZ with the residential house in cadastral area Bošany – Baštín, 2x crossing the bio-corridor of Vyčoma creek, side-run of line and III. category road Klátova Nová Ves - Bošany, line running closer to the built-up area of municipality Klátova Nová Ves, line running closer to the built-up area of municipality Turčianky)
- **possible route modification at crossing of Vah river in coordination with the planned construction of water dam Hlohovec - Sered'**

The comparing study reflects fulfilment of conclusions from the field consultation carried out by the proponent (SEPS) in relation to the standpoint of the Ministry of Environment /Department of Nature Protection and Landscape Development/ and State Nature Conservancy of the SR /Administration of the Protected Landscape Area Malé Karpaty/ on the Environmental Impact Assessment. The standpoint aimed at consideration of alternative routing of the 2x400 kV line across the inter-dike space on Vah river in cadastral area Dolné Zelenice, **in coordination with the planned construction of water dam Hlohovec – Sered'.**

The summary of sections solved in variants, which are the result of the whole EIA process and are stated in the final summary issued by the MoE, their advantages and disadvantages:

section: Biskupová Kapince			
Route in the original corridor V274		Route in the new corridor	
Advantages +	Disadvantages -	Advantages +	Disadvantages -
- new PZ is not created, only the existing one is extended - more profitable solution - easier construction, shorter route, less	- remaining restrictions in PZ in a municipality (prohibition of house construction, maintenance of PZ without grown trees) - restrictions for residents during construction	- bypass of built-up areas of municipalities - the cancellation of restrictions within the PZ of built-up areas of municipalities (prohibition of house	- prolongation of the line route - more expensive solution - creation of new PZ - more difficult construction, more towers

towers		construction, maintenance of PZ without grown trees) - the construction of new line will be executed out of built-up areas of municipalities	
section: in cadastral area Bystričany			
Route in the original corridor V274		Route in the new corridor	
Advantages +	Disadvantages -	Advantages +	Disadvantages -
<ul style="list-style-type: none"> - more profitable solution - easier construction 	<ul style="list-style-type: none"> - crossing of built-up areas in inappropriate direction towards plots - bigger extent of PZ in built-up area 	<ul style="list-style-type: none"> - crossing of built-up areas in more convenient direction towards plots - smaller extent of PZ in built-up area 	<ul style="list-style-type: none"> - prolongation of the line route - more expensive solution - more difficult construction
section: between break points R12 and R14			
Route in the original corridor V274		Route in the new corridor	
Advantages +	Disadvantages -	Advantages +	Disadvantages -
<ul style="list-style-type: none"> - new PZ is not created, only the existing one is extended - long-term used corridor 	<ul style="list-style-type: none"> - remaining restrictions in PZ near towns Klátova Nová Ves and Turčianky (prohibition of house construction, maintenance of PZ without grown trees) - restrictions for residents during construction - 2x crossing of local bio corridor of Vyčoma stream - crossing of CHVÚ Tríbeč - more expensive solution 	<ul style="list-style-type: none"> - the route out of built-up areas in sufficient distance from municipalities - the cancellation of restrictions within the PZ of built-up areas of municipalities (prohibition of house construction, maintenance of PZ without grown trees) 	<ul style="list-style-type: none"> - creation of new PZ

	(longer route) - inappropriate concurrence with the road - crossing of built-up area in part Bošany - Baštín	- construction of new line will be executed out of built-up areas of municipalities - not needed to cross Vyčomy stream - bypass of CHVÚ Tribeč - more profitable solution - easier construction, less towers	
section: crossing of Váh river			
Route in the original corridor V274		Route in the new corridor	
Advantages +	Disadvantages -	Advantages +	Disadvantages -
- no new felling of trees -no engagement of important habitats - towers out of sliding area	- two corridors of overhead lines remain in the area between dams - cottage settlement Posádka in PZ - less convenient crossing of railway	- one corridor of overhead lines remains in the area between dams - more convenient crossing of railway - existing alternatives of bypass of water reservoir in case of construction of waterworks	-necessary partial felling of trees - engagement of important habitats - towers in sliding area – impact on local recreation

Based on the above mentioned Expert Review the **Final Record** with validity for 7 years was issued by the MoE on 19.12.2012. The proposed activity was recommended for realisation, with possible routing according to the Expert Review (see the text above).

At the same time, conditions for the construction and operational phase of the proposed activity were recommended. The statement of MoE also sets the minimum requirements on the scope of the follow-up analysis (more details in chapter 5).

What is following ...

In frame of next preparation phase of the construction the investor will procure:

- elaboration of the project documentation
- engineering works for the authorisation procedure for the construction
- the technical supervision of the construction
- monitoring and environmental supervision of the construction
- the contractor of construction works

Procured planner, engineer, environmental manager and especially the contractor of construction works are responsible for the incorporation and implementation of all environmental measures connected to the project preparation or construction of new 2x400 kV line.

The realization and functionality of all environmental measures will be assessed regularly through monitoring and environmental supervision of construction.

4. Environmental assessment

4.1 Supporting documents and partial surveys

Conducting specific studies needed for an adequate evaluation of the environmental impacts of activities was an integral part of the environmental assessment (as described in chapter 3.1).

The core part of these studies was focused on detailed survey of the current state of the area and impact assessment of activities on each affected environmental component.

Particular studies:

- Geofos, s.r.o.: Geology and basic evaluation of the engineering-geological conditions of the territory, 2012
- Ing. Libor Ulrych, PhD.: survey on real vegetation and habitats in the affected area, identification of habitats of European and national importance and evaluation of possible impact of activities on these habitats, 2012. The current state of real vegetation in relation to the planned reconstruction EHV of 2x400 kV was surveyed by the terrain research carried out in the end of April 2012. In advance, the points of possible conflict of interest with the interests of environmental protection were identified according to the route of EHV based on the orthophoto images (possible occurrence of habitats of European, national importance, possible occurrence of protected species of plants, estimation of elimination of tree vegetation related to the planned extension of PZ EHV). 69 conflict points were indentified this way, which were verified in the terrain and supported by short floristic characteristics. The areas of presupposed extension of PZ EHV were assessed. In the terrain there were found also another potential places, thus more localities were assessed. The assessment of membership to the habitats of national or European importance was carried out according to the Catalogue of Habitats of Slovakia "Katalóg biotopov Slovenska" (Stanová, Valachovič, eds. 2002).
- RNDr. Vladimír Slobodník, CSc.: inventory research of ornitofauna and estimation of presumed impacts of the 2x400 kV line construction on avifauna in the concerned area and on the affected Special Protected Areas (Natura 2000). The submitted report is the result of terrain research of assessed area Križovany – Bystričany in the route of 2 x 400 kV power line. The aim of this inventory research was to find out the structure of ornithofauna of surveyed locality (number of species) and to estimate the presupposed impacts of construction of 2 x 400 kV power line on the species structure of birdlife (avifauna) in the given area. Ornithological research was carried out based on the order of coordinator of complex report in the period from March to May 2012.

- Transmission Lines Projects, Ltd.: Power transmission line rated 2x400 kV locality Bystričany - Križovany, Technical report – updated version for the Environmental Impact Assessment, May 2012

Results of these surveys are incorporated in the Environmental Impact Assessment.

Except for that, an independent terrain research preceded the elaboration of the report focused on the EIA, retrieval of data information, analyses and subsequent syntheses, the result of which is the assessment stated in the EIS, with the extent of 321 pages and 8 annexes. ***The submitted NTS can therefore offer only very short summary of the EIA process of proposed activity and output documentations (Environmental Impact Statement, Final summary).***

4.2. Current state of environment in the affected area

Rock environment: Pre-quaternary rocks are locally covered by the sediments of formation of quaternary covering structures, which is represented by the soils of fluvial, proluvial, deluvial, loessial complex, locally organic and anthropogenic complex.

According to the **engineering-geological regionalization** of Slovakia (Matula, Pašek, 1986) the area is classified as the *region of Neogene tectonic depressions and region of core mountains*.

In the affected area the contamination of rock environment is presupposed mainly in the areas with the high concentration of industrial production and the sources of environmental burdens. It is the area of Trnava – Sereď and mainly the area of Prievidza – Handlová – Nováky (Horná Nitra loaded area) with the mining, energetic and chemical industry, dumps, tailing ponds, mining of mineral raw materials and transport burden.

Soil conditions: In the affected area there are continuous areas of quality agricultural soil concentrated mainly on the Trnava plate in the Nitra Highlands and near bottomland of Váh and Nitra. Also the intensive industrial activity in the past and in the present contributed to the chemical degradation of soils through the gravitational settling of immissions mainly from the Horná Nitra and Dolné Považie loaded regions.

Climatic conditions: The whole affected area belongs according to the climatic-geographic classification into the **warm climatic area T**.

Atmosphere: The quality of atmosphere of affected area is, except for the distance transmission of polluting substances, affected mainly by the emissions from the big industrial sources. As mentioned earlier, great part of route leads through **Horná Nitra loaded area**. In this area the dominant share on the atmosphere pollution has the energetics, smaller amounts of emissions are produced by the sources of chemical industry and local furnaces.

Surface water: The main concentration streams of surface streams of affected area are the rivers **Váh** and **Nitra**, the dominant part of route goes through the river basin of Nitra. Other important streams in the affected area are Blava, Dudváh, Blatina, Radošinka, Andač or Vyčoma, which are crossed by the route gradually. Waterworks streams (according to the Regulation of MoE of SR no.: 211/2005 Coll.) are not located in the affected area.

In the affected area the construction of VD Sereď-Hlohovec is planned in the future, which will be located in the inundation area of Váh.

Water stream Váh in the affected area belongs to III. class of quality, which means the polluted water, suitable for the supplies of industrial water and partially for waterworks purposes with low landscaping value. Industrial and municipal waste waters from the point sources of pollution contribute to the pollution of Váh stream, from the areal sources it is mainly the agricultural activity.

Upper and middle section of Nitra is significantly polluted because of an intensive anthropogenic activity. Water in Nitra is long-term affected by waste waters from the mining, chemical, energetic and food industry. Several exceeded indicators are recorded here repeatedly in comparison with the limit values.

Groundwater: According to the hydrogeological regionalization the affected area reaches the following hydrogeological regions: QN 50 Quaternary of Trnava Highlands and Q-48 Quaternary of Váh in the Danubian Lowland, N 71 Neogene of Nitra Highlands, MG 69

Mesozoic and Paleozoic of North-East part of Tribeč and QN 67 Neogene and Quaternary of Horná Nitra Basin.

The route of new 2x400 kV line does not reach any protected water management area neither any protected area of natural healing sources.

The affected area in the part of Váh river basin can be classified as the area with the water of lowest quality in Slovakia. Water is used mainly for the individual utility consumption. The quality of groundwater in river alluvium of the middle part of Nitra is affected negatively by increasing agricultural and industrial activity, which causes the exceeding of stated limits for drinkable water. Values over limits were measured in the indicators: Fe, Mn, ammonium ions, chlorides, less nitrogenous substances and heavy metals (As).

Flora and vegetation: The current species and spatial structure of biota is the result of long-term processes and it is a reflection of influence of impact of man on nature. The deforestation of affected area in the past affected almost all forest communities that were completely changed into the agricultural – arable soil.

In the affected area, in **Dolný Váh bottom land**, nowadays there are only remains of *Ulmenion* communities in the form of small woods and groves. In the tree structure of preserved remains of woods there prevails Narrow-leaved Ash (*Fraxinus angustifolia*), Field Elm (*Ulmus minor*), White Poplar (*Populus alba*), English Oak (*Quercus robur*) and also trees of riparian forest. In the **line of Váh** only insignificant remains of willow-poplar riparian forests of *Salicion albae* association are preserved from the former plant communities on the alluvial gravel and silt.

Similarly in the **Nitra Highlands** the former wooden areas changed to cultural steppe by the agricultural activity of man. There are vineyards, cultivated fields with the prevailing cultural growth, meadows and orchards. Steep slopes where the agricultural machinery did not reach became the last refuge for representatives of thermophilic flora.

In the alluvial silt, mainly alongside **the banks of the river Nitra** there are mainly ash-elm and oak-elm forests designated as the lowland riparian forests in compliance with the natural conditions in the interest assessed area.

Oak-hornbeam, oak and beech forests in higher altitudes are typical for **Tribeč**. Within the affected area in the lower altitudes of Tribeč Mountain there is oak-beech forest type, in the higher altitudes linden-maple forest types, in the fir-beech vegetation grade there are linden-maple, beech-maple, ash-maple forest types and the most widespread one is the fir-beech type.

Fauna: the species structure of fauna has the character of broad-spectrum representation. Its real biotic value is conditioned by the changes in country which are significant in the affected area. Particular zoo-geographic sub-districts are buffer zones of zoo-geographic areas and occurrence of fauna species is restricted considerably, it has only temporary (migration) character in several localities.

The characteristics in detail as well as the EIS assessment was focused on the **avifauna**, the better knowledge of which is relevant from the aspect of assessment of impacts of 2x400kV line. Ornithofauna is represented by species occurring in the ecosystems present on the route of power line. Unambiguously the dominant part is represented by agrocenoses (fields, permanent grasslands, meadows) and ecotone communities (linear and group growths of bushes and trees), smaller part is represented by the water and marsh habitats and the smallest part is represented by the forest ecosystems.

Habitats: during the terrain research the occurrence of following habitats of national and European importance was identified: Ls 2.1 *Quercus-Carpinus betulus* forests, Ls 1.1 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* * 91E0, Ls 1.2 – 91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great river (*Ulmenion minors*), Ls 3.1 – 91HO Pannonian woods with *Quercus pubescens*, Ls 3.4 – 91M0 Pannonian-Balkan turkey oak-sessile oak forest, Ls 5.4 – 9150 *Medio-European limestone beech forests of the Cephalanthero-Fagion*, Lk1 – 6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*), Tr1 – 6210 Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*).

Countryside: The current countryside structure is mainly in the affected area (**1.1-1.5 and 1.7 sections** in Trnava and Nitra hilly area, Nitra bottom land and also in Horná Nitra basin) areally most affected by anthropogenic agricultural production from the previous period. The structure typical for lowlands of Slovakia changed significantly here. The development of urban areas, vast deforestation, also intensification of agriculture and significant influence on the water system formed the basis of that present countryside has entirely different character in comparison with the former one. The riparian forests have almost disappeared from the affected area and were substituted by arable soil or by built-up area. Similarly, oak-hornbeam growths of hilly areas fell prey to the agriculture and nowadays there is mainly arable soil instead of them.

The original character of Tríbeč mountains (section **1.6**) represented by vast continuous complexes of mainly oak-hornbeam forests remained relatively preserved and it is ecologically most important countryside-structural complex of the affected area..

From the aspect of aesthetical and visual values the affected area is of various quality. Relatively often there are anthropogenic elements – built-up areas and infrastructure and also the dense system of overhead lines, considering the localization of TR Križovany.



Protected areas: In the affected area, CHKO Ponitrie reaches only the cadastral area of Brodzany municipality and the line route goes through that in **1.4** section (the last 200 m of this section – in already mentioned cadastral area Brodzany) and in **1.5** section in the length of circa 1500 m in the west half of this cadastral area.

Declared on 24th June 1985 by the regulation of the Ministry of Culture of SSR no. 53/1985 Coll. on the area of 376.6541 km². The purpose of declaration of CHKO Ponitrie is the protection and enhancement of nature of Tríbeč and Vtáčnik mountains. Both mountains, inconspicuous at the first sight, hide a lot of natural and country values.

Tríbeč belongs among the Mesozoic crystalline mountains from the aspect of geological structure. The package of crystalline core is composed of sediment minerals: limestone, dolomites, quartzite. The richness of geological subsurface and climate creates the conditions for rich species variety of nature.

From the geological aspect, Vtáčnik is mountain created by tertiary volcanic activity. The poorer is the species variety of this mountain compared to Tríbeč, the richer are the geomorphologic elements. Rock towns, needles, screens, canyons together with the mountain flora and fauna create real wild place almost untouched by man.

From the representatives of fauna of Protected Landscape Area Ponitrie the attention should be paid to the occurrence of Eurasian lynx and wild cat as the original felids. There is also deer, roe and wild boar wildlife in lower altitudes. Fallow deer and moufflon wildlife thrives in Tríbeč, which was introduced in Slovakia in 1867. From the rare birds of prey there is Lesser Spotted Eagle, Eastern Imperial Eagle, Short-Toed Snake Eagle and European Honey Buzzard in the area.

It is necessary to mention also very rare hazel grouse, the number of which is quite low in Vtáčnik. The area is rich in many rare and protected invertebrates, as for example Great Capricorn Beetle, European Rhinoceros Beetle, Palaeartic Red Cicada, Saga Pedo. From Lepidoptera it is e.g. Clouded Apollo, Scarce Swallowtail and Old World Swallowtail, from spiders Ladybird Spider.

The highest peak is Vtáčnik /1346m/. The area is divided by transverse depressions, rivers and alluvial fans. Karst processes caused the creation of karst phenomena /Svoradova jaskyňa/. More than 92 percent of area belongs to the forest land fund. Totally there are 101 species of trees, from which 73 are the original ones. Very rich fauna is the one of thermophilic forest-steppe animals, from which more than 140 species are protected.

The area between Vtáčnik and Tríbeč mountains called as "Veľkopolská brázda" (graben or depression) is characteristic of dispersed settlements (so-called "štále") and extensive way of agricultural soil farming. So the countryside of typical character with exceptional aesthetic values was created.

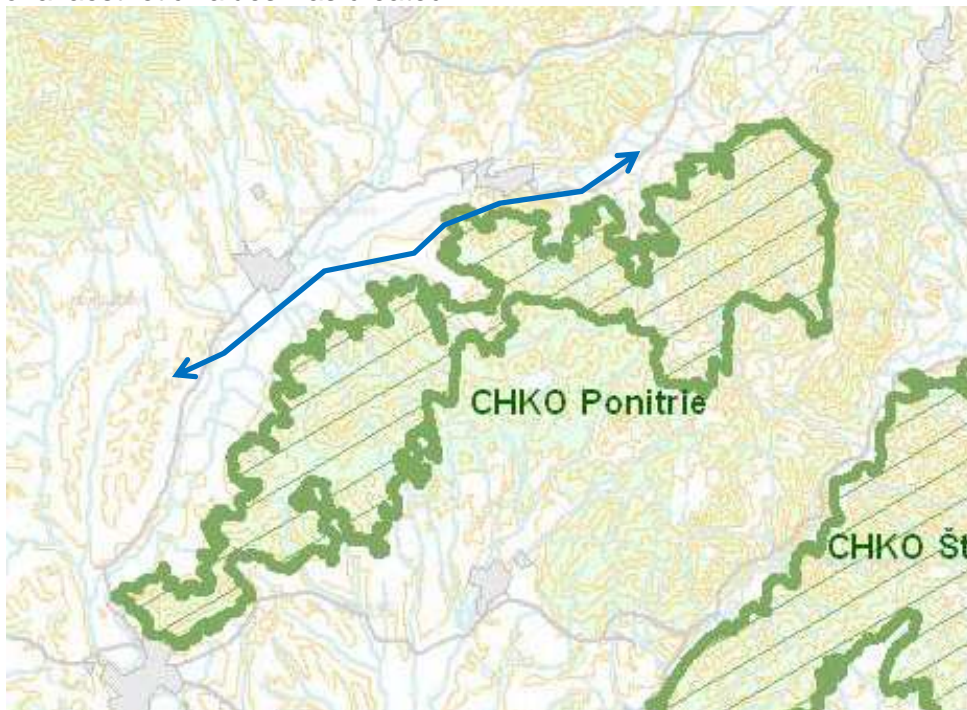


Figure: routing of line through the edge of CHKO Ponitrie.

NATURA 2000: Actual route of proposed 2x400 kV line goes through **SKCHVU031 Tribeč**, particularly through cadastral areas Nitrianska Streda, Topoľčany, Solčany, Práznovce, Baštín, Veľké Bošany and Klátova Nová Ves. The area is located in the districts of Nitra, Topoľčany, Partizánske and Zlaté Moravce on the area of 23 802 ha. It is mainly wooded area on limestone and dolomites, from which quartzitic hills emerge in some places. In the central part beech growths prevail, in lower altitudes oak growths prevail. Foothills of mountain are created by agrocenoses represented by fields, meadows and to a lesser extent by orchards and vineyards.

The reason for protection of CHVÚ Tribeč is mainly the protection of European imperial eagle, its nesting and hunting grounds, then ensurement of favourable condition of habitats of birds species of European importance and habitats of migratory species of birds Middle Spotted Woodpecker, Turtle Dove, Eurasian Wryneck, European Nightjar, Spotted Flycatcher, Collared Flycatcher, Barred Warbler, Common Quail, European Honey Buzzard, Eurasian Eagle-Owl, Common Redstart and ensurement of their survival and reproduction. The declaration of proposed Protected Bird Area Tribeč specifies the forbidden activities that can have negative impact on the subject of protection of protected bird area. For this reason the assessment was focused on ornithofauna.

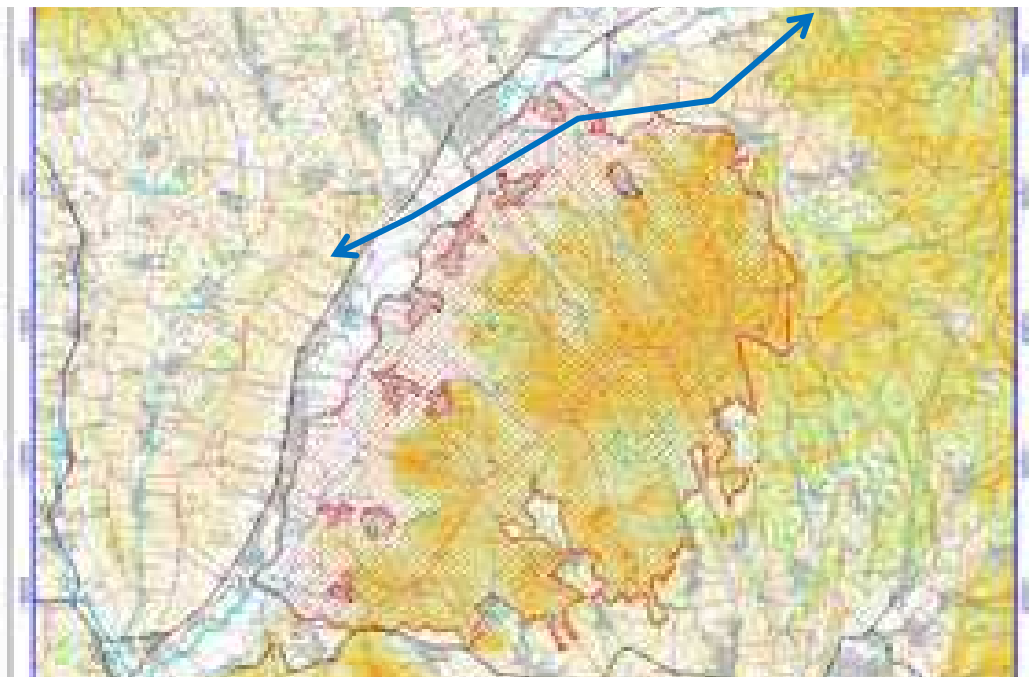


Figure: routing of line outside the forested part of CHVÚ.

Population and urban areas: Affected population lives in 38 urban units – from that there are 2 towns (Partizánske and Topoľčany), and 36 villages. The affected area reaches the area of three self-governing regions: Trnava, Nitra, Trenčín region.

The population of affected area has the connection mainly to Bratislava – Trnava – Nitra centre of urban area of the first level, in which the strong agglomeration tendencies appear, in significant part of its urban units and also in core town, in the direction Nitra – Trnava to Bratislava (section 1.1, 1.2, part of section 1.3), also to Prievidza centre of urban area of the second level (section 1.6, section 1.7) and finally also to Topoľčany and Partizánske centre of urban area of the third level (sections 1.3 – 1.6).

The agricultural activity is the prevailing one in the whole affected area except for the 1.6. section. Forest management activity is applied mostly in the area alongside the 1.6 section.

From the transport-urban aspect, the space of the whole affected area, mainly the space along development axes which reach it, has the centre location, with significant domination of road transit transport.

In the affected area there is a public intrastate airport for general aviation in town district Malé Bielice (Partizánske, section 1.4). In the affected area there are also field airports in the cadastral area Ludanice (section 1.4) and in the cadastral area Nemčice (section 1.4) – these are grassy airports used for the agricultural works.

The area of Ponitrie, which represents the dominant part of the affected area, belongs among the areas of Slovakia with important cultural-historical heritage. This region always attracted our ancestors, traces after which can be found on several places. The historical importance of this area is highlighted mainly by the arrival of Slavonic tribes and their concentration in the area of Nitra and the establishment of first Slavonic principality. The axis of the area is river Nitra, which connects northernmost and southernmost parts of region.

The environmental problems: Overall it can be stated that the whole route of line goes through the area ***with slightly disrupted and strongly disrupted environment*** and that it almost does not reach the areas of high level of environmental quality at all (only in very short section in the cadastral area Brodzany, where it crosses CHKO Ponitrie).

From the affected urban units the least quality environment is in towns Topoľčany and Partizánske, which are the part of Horná Nitra loaded area.

4.3 Identified Impacts

The assessment of presupposed direct and indirect impacts is based on the preliminary identification of most evident inputs and outputs of proposed activity.

For the proposed activity – the construction of new 2x400 kV line in sector of Bystričany - Križovany locality – basically decisive are the following realities that affect an assessment of impacts on environment by critical measure: the decisive are mainly the following

1. The new 2x400 kV line will be situated in the presently already existing corridors for 220 kV and 2x110 kV lines. It means that **all the impacts** on environment, which will effect in connection with operation of new line **yet in area involved, act on a long-term basis**. Only their scope will be changed by operation of new line.
2. Given type of activity presents for environment much **more influence during the phase of building** than during operation.
3. The proposed line is situated predominantly in significantly anthropogenic affected – intensively utilized agricultural land, partially also in area of loaded Horná Nitra region, and partially in the region of Dolné Považie.
4. The corridor of proposed line passes in sector **1.6** the Tribeč Mountains Base containing forest crop, which in the area involved presents only one spatially more extensive type of the original landscape. The 2x400 kV line overcome the mountains within the existing corridor, which is long time deforested.
5. The corridor of proposed line is located mainly in the monotonous agricultural land without an extraordinary ecologic importance.

In the Environmental impact report all the environmental impacts which are assumed in connection with the construction and operation of the proposed power transmission line rated 2x400kV in a section from Bystričany - Križovany have been identified and described.

We have summarized and evaluated hereafter the most important of the impacts from the viewpoint of their significance. For the purpose of evaluation of significance we have selected the five-degree scale with the following characteristics applied for both the negative and positive impacts:

- **no impact** (the proposed activity shall not affect in any respect whatsoever any environmental component, population or utilization capacity of land, cultural and historical values of the region, etc.);
- **insignificant - negligible impact** (involving, most of all, an impact with the nature of risk, incidental occurrence or a negligible contribution of temporary effect);
- **slightly significant impact** (an impact the operation of which is from the quantitative viewpoint only minimal, with the local impact or an impact on the little vulnerable component of the environment, and/or not perceivable or being subjective, as well as an impact with the nature of risk for a more vulnerable component of the environment and/or otherwise specific area, and the temporary impact with a wider general coverage or direct impact on the population)
- **significant impact** (affecting a wider surrounding or operating in relation to a more vulnerable component of the environment, and/or the perception or the general effects of which are high, as well as the temporary impact with universal effects); and
- **very significant impact** (distinguished by its regional reach or affecting the most vulnerable component of the environment or ecological capacity, and/or not being in compliance with the appropriate legislative or other standards, and affecting the subject of protection in protected regions, with permanent and irreversible effects).

All identified impacts are distinguished in the Environmental Impact Statement based on the affected component of environment. Their importance is based on the assessment and comments stated in the previous parts of Environmental Impact Statement. The attached value of significance expresses **the total “value” for the whole route** of proposed line.

1. Erosion phenomena and processes throughout the time of construction
 - **slightly significant impact**, on a temporary and short-term basis
2. Impact on mining of minerals
 - **insignificant - negligible impact**
3. Dust resulting from sites throughout the time of construction
 - **slightly significant impact**, on a temporary, short-term and irregular basis
4. Noise, dust and emissions from transport throughout the time of construction
 - **slightly significant impact**, on a temporary, short-term and irregular basis
5. Contamination of water streams throughout the time of construction
 - **insignificant impact**, on a temporary, short-term and irregular basis, with risk
6. Impact on regime and quality of underground waters throughout the time of construction
 - **insignificant impact**, on a temporary, short-term and irregular basis, with risk
7. Erosion and mechanical disturbance of soil throughout the time of construction
 - **significant impact**, on a temporary and short-term basis
8. Occupation of protective lands
 - **insignificant impact**, on a permanent basis
9. Fellings and occupation of the significant forest biotopes
 - **significant impact**, on a permanent basis
10. Occupations of significant non-forest biotopes
 - **insignificant impact**, on a permanent basis (in case of temporal occupations, temporary)
11. Collision of birds with the electric line
 - **significant impact**, with risk
12. Creation of new nesting possibilities for birds of prey
 - **slightly significant positive impact**, on a permanent basis
13. Origin of areas for development of shrubbery in the farming landscape
 - **slightly significant positive impact**, on a permanent basis
14. Creation of deforested lines
 - **insignificant impact**
15. Reduction of the overall ecological stability of the affected region
 - **no impact**
16. Routing the line via ÚSES_[Territorial System of Ecological Stability] features
 - **slightly significant impact**
17. Increased height of pylons and viewing dominance
 - **slightly significant impact**, on a permanent basis
18. Conflict of the route with protected areas (CHKO Ponitrie)
 - **insignificant impact**
19. Conflict of the route with NATURA 2000 areas (CHVÚ Trábeč)
 - **insignificant impact**
20. Disturbance of comfort and quality of life throughout the time of construction
 - **significant impact**, on a temporary, short-term, irregular basis
21. Possibilities of employment throughout the time of construction
 - **slightly significant positive impact**, on a temporary, medium-term basis
22. Routing the line near the built-up areas of affected settlements
 - **insignificant impact**
23. Impacts of the line operation on the state of health of population
 - **no impact**
24. Permanent land occupation - pylon sites
 - **insignificant impact**, on a permanent basis
25. Restriction of agricultural activity

- **insignificant impact**, on a permanent basis
- 26. Development of industry
 - **slightly significant indirect positive impact**
- 27. Development of the region
 - **significant indirect positive impact**
- 28. Impact on the regime and quality of waters of water resources
 - **no impact**
- 29. Traffic restrictions throughout the time of construction
 - **insignificant impact**, on a temporary, short-term basis
- 30. Relocation of other infrastructure features
 - **insignificant impact**
- 31. Impact on the Partizánske and Ludanice field airport operation
 - **slightly significant impact**, on a permanent basis
- 32. Development of local services throughout the time of construction
 - **insignificant positive impact**, on a temporary, medium-term basis
- 33. Impacts on tourist localities throughout the time of construction
 - **insignificant impact**, short-term basis
- 34. Extending fellings of forest in protective zone
 - **insignificant impact**, on a temporary, long-term basis
- 35. Substitute seeding in the new protective zone of the power line
 - **slightly significant impact**, on a long-term basis
- 36. Processing of raw wood after deforestation
 - **slightly significant positive impact**
- 37. Impact on cultural-historical and archaeological localities
 - **no impact**
- 34. Compliance with the governing ÚPD of VÚC
 - **insignificant impact**
- 35. Compliance with ÚPD of affected municipalities
 - **insignificant impact**

In the following text there are stated identified particular impacts on individual components with the proposals of measures for the minimizing of potential negative impact.

a) land acquisition

Permanent acquisition of land linked to the proposed construction of 2x400 kV line will affect both agricultural and forest land and relates to individual tower sites:

- presumed permanent acquisition of forest land: ca. **1 000 m²**
- presumed permanent acquisition of agricultural land: ca. **20 000 m²**

Measures concerning land ownership:

- in the project documentation for zoning decision it is necessary to evaluate proposal of location of each tower
- land remains in the original ownership, while registration of an easement for benefit of the proponent (operator) will take place. In frame of the permitting procedure for the construction the developer and land owners have to agree on the procedure and amount of one-off compensation for the land easement or land use restrictions in line with the existing Energy Act
- investor procures an expert for the land plot/real estate evaluation (agricultural land, forest land) and other documentation needed to determine the fair price required for signing the sale

- Compensations for the registration of land easement of directly affected lands under tower sites.
- Compensations (levies) for the permanent occupancy of lands.

Measures concerning quality of soil

- excavated soil from tower sites will be used exclusively as backfill, spread in the PZ surrounding the tower site or used in different way upon approval. Technical and biological remediation of the agricultural land will be realised without delay after completion of construction works
- temporary panelled bed of access roads will be used at sites with high erosion risk
- felling on the agricultural land will be minimized
- balance elaboration and humus layer covering of permanently removed soil will be performed
- The movement of machinery on forest roads will be regulated in compliance with the general regulations.
- After the construction works the soil surface will be adjusted to the original state and grassed over in case of requirements.

Temporary acquisition of land:

Access roads: taking into account the existence of paved and unpaved local roads, paths and forest roads in the affected area or close to the corridor of the proposed line, construction of new access roads is not needed.

Construction sites: location of main construction sites is planned at the termination points of both sections of the proposed line, i.e. DP Križovany and DP Bystričany

Protective zone: extension of the PZ up to 69, or 78 m (depending on the tower type used); land ownership remains unchanged, limitations caused by the construction of new line or by creation of new PZ will be solved through following measures:

Measures:

- Compensations to users for damages caused on agricultural plantations during construction.
- Forestation of forest soil inside the deforested protective zone and the following care for seedlings according to the environmentally affected and approved project.
- Recultivation of lines of access roads after finishing the construction
- Compensations for the registration of land easement or for restricted use of lands of directly affected lands in the protective zone.
- compensation (payment) for loss of the forest ecosystem services

Management of lands during the preparation and construction of power line

The construction and operation of 2x400 kV line restricts the building construction and also use of forest lands to the extent of created protective zone, in such way that in the area under the line the growths can be grown up to the height of 3 m and in both marginal areas of PZ of the width of 2x20 m growths can reach the height not threatening the line in case they fall. Common agricultural use of lands is not restricted by the line operation – out of tower sites. All lands in protective zone of line will remain in the ownership of original owners. Only under the tower sites new plots of the category of built-up areas will be created by geometric plan, which will also remain in the ownership of original owners. These new plots under tower sites will as the only ones occupy permanently the forest or agricultural soil. On all lands in PZ of line the easement will be established according to the act on energetics.

Every owner has the claim for one-off financial compensation for the registration of easement or for the restricted use. Since it is public utility construction the investor can apply the process of dispossession, but it has not happened in the history of line construction.

The pay out of one-off compensations is bound to the after-realization demarcation of construction, the elaboration of the after-realization geometric plan and the elaboration of expert review in the field according to the kind of land. The pay out of all owners will be executed during the approval of construction, in case of forest lands before execution of felling.

At the end of EIA process of prepared construction of 2x400 kV line – after determination of recommended route of line in the final statement of MoE of SR the implementation of route into the cadastral map and the primary identification of affected lands in the future protective zone as well as the owners of plots were realized.

There were found more than 3500 directly affected plots with the total number of more than 10 000 private owners. The state participates in the ownership in the relatively big number (circa 40 %), which manages the soil of unknown owners. The overwhelming majority of affected agricultural soil is in use of agricultural cooperatives or other farming companies based on the rental contracts, the affected forest lands are used by state mainly.

Engineering organization, which will be chosen by the investor at the beginning of authorisation procedure according to the construction act, thus in the territorial proceeding will contact all owners of plots under proposed tower sites with the proposal of compensation contract. The compensation will be realized in coordination of the engineering organization and the investor SEPS – the Department of Line Investments. The affected owners have the possibility of communication or complaints through the engineering organization and also directly with the investor (the Department of Line Investments, more information in Stakeholders Engagement Plan) or in the administrative proceeding as the participants of territorial, construction and authorisation procedure according to the construction act.

During the project preparation, the authorisation procedure as well as the construction of line, there will be intensive communication and coordination between investor, engineering organization, project organization, environmental manager and construction constructor through official regular check day realized at least once a month.

Users of lands will be contacted by the chosen construction contractor for negotiation of terms of construction – movement of machinery through lands and determination of amount and way of compensation for caused damage on plantations or access roads. They will get the compensation from the chosen construction contractor.

According to the project documentation elaborated for the territorial proceeding or construction proceeding in which the quantities of permanent and temporary occupation of soil and the quantities of felling of grown trees on forest and non-forest soil will be identified, the legal administrative fees (levies) within the authorisation procedure of construction will be paid for:

- Permanent occupation of forest soil
- Temporary occupation of forest soil and permanent restricted use of forest
- Permanent occupation of protected agricultural soil
- The felling of trees growing outside the forest (based on the realized dendrological research with the calculation of social value of trees according to the legislation of nature protection)

During the operation of line, the protective zone will be maintained regularly, that means the regular felling of trees will be realized in it. The operator is obliged to inform competent environmental office about intended felling and to offer realization of maintaining felling to the owners of affected lands for reward.

The summary of possible claims/compensations that will be provided:

Impact	Who is affected-compensated	Compensation
Permanently occupied forest land The loss of forest soil and trees because of the tower site.	Forest office	financial compensation
Permanently occupied agricultural land The loss of agricultural soil because of the tower site.	Regional lands office	financial compensation in case of protected soils (1. – 4. category of quality of soil)
Temporarily occupied forest land The loss of trees because of the creation of PZ and access roads, early deforestation	Forest office	financial compensation
Restricted use of real estates Inhabited houses in PZ	Owner	financial compensation
Restricted use of forest lands Maintenance of PZ of line during lifetime of line, the loss of productive functions of forest	Forest office, owner	financial compensation
Restriction of irrigation in PZ	User	financial compensation
Easement on plots in PZ of line	Owner	financial compensation
Felling of trees growing outside the forest	Municipalities	financial compensation
Damage on agricultural plantations during construction	User	financial compensation – construction contractor
Damage on local roads during construction	Municipalities	financial compensation – construction contractor
Traffic restrictions during construction	Office of road transport	financial compensation – construction contractor

b) Demands concerning the built-up area

Based on the standpoints of municipalities on the Preliminary Environmental Study and based on the Scope of Assessment determined by the MoE SR, public discussions and independent Expert Review, the initial conflict of proposed outline of the 2x400 kV line with the built-up area of municipalities Biskupová and Kapince, Bystričany and Bošany – Baštín was solved through introduction of local bypasses of these built-up areas. Two residential houses in Oslany got into the marginal localities of new PZ by extension of the original PZ of 220 kV line to the PZ for new 2x400 kV line.

Overview of residential houses in the protective zone of the proposed line

Municipality	Number of residential houses crossed by the protective zone of the existing 220 kV line	Number of residential houses crossed by the PZ of the proposed 2x400 kV line in the original corridor	Number of residential houses crossed by the PZ of the proposed 2x400 kV line in modified (alternative) as recommended in the Final Record
Kapince	2	2	0
Biskupova	1	1	0
Bystričany	2	2	2
Bošany-Baštín	1	1	0
Oslany	1	1	1

Non-residential objects within the protective zone:

- cadastral area Siladice: two railway station buildings at the route crossing in existing PZ
- cadastral area Posádka – 2 objects in the allotment garden area in the PZ of existing line
- cadastral area Klačany – objects in unspecified area
- cadastral area Rišňovce – railway station buildings at the route crossing
- cadastral area Nové Sady - objects in agricultural area next to settlement Cerovina
- cadastral area Biskupova - objects in agricultural area (only in case of routing in the original V274 line)
- cadastral area Ludanice – objects in agricultural area next to the field airport Ludanice
- cadastral area Brodzany - objects in the former agricultural area
- cadastral area Malé Uherce: allotment and garden settlement in the PZ

The above mentioned non-residential objects are situated in the current protective zone of the 220 kV line V274 Bystričany – Křižovany. These objects are not permanently inhabited and only irregularly used.

Measures:

- construction of local bypasses according to the Final Record

In case of routing in the original corridor of 220 kV line (Oslany) and in case of Bystričany local bypass):

- installation of different tower type in the respective route section with the aim to narrow the PZ as much as possible (e.g. towers of SUDOK type)
- installation of raised tower types with the aim to achieve adequate height for cables to meet the hygienic limits
- alternative considering the option of local bypass of the route apart from affected objects within the next phase of project preparation
- alternative property settlement
- financial compensation for restricted use of real estates

c) Impacts on soil

Impacts on soil are primarily linked to the construction phase. They mainly represent the risk of erosion and soil transport caused by:

- movements of construction vehicles in the corridor of PZ, particularly on arable land
- extension and adjustment of existing unpaved roads
- tree felling in forest vegetation and manipulation with wood
- tree felling in non-forest vegetation

Operation of the line will have no impact on soil quality.

Measures:

- conditions of transport and construction vehicles will be regularly controlled with regard to potential oil substances spills. The contractor will be instructed on work discipline and works will be performed in the most possible sensitive way

d) Impact on geology

Inappropriate construction activity during installation of electric power line towers could create conditions for development of geodynamic activity, such as slope deformations and erosion.

Operations of the power line will have no impact on geology.

Measures:

- suitability of ground soil or geology of each tower site will be examined by an expertise, eventually by a detailed engineer-geological survey, if necessary
- field works will not be performed in seasons of stronger or long-lasting rains
- the construction will be realised by mobile devices for elimination of soil contamination by oil substances in case of emergency situation

e) Impacts on hydrology

Impacts on hydrology are linked only to the construction phase with higher risk level. They represent risk of water streams pollution in relation to:

- movements of transport and construction vehicles on access roads
- long-term occurrence of construction vehicles on construction sites

A relatively greatest risk is linked to the spill of oil substances from construction vehicles. The most sensitive in this regard are water streams threatened by works carried out in their vicinity and directly by undesirable transits of construction vehicles. Seasons of higher water levels and heavy rains can be problematic as well.

Operation of the line will not have any impact on hydrology.

Measures:

- transits of construction vehicles across water streams are not recommended, the transits of streams by construction vehicles is not desirable, the project of accesses will be created so that the transits of streams and entry of construction vehicles into streambeds could be prevented.
- tower sites will be located as far from water streams as possible
- works performed close to stream-banks have to be planned for periods apart from high water level seasons and activities in the vicinity of stream-banks have to be restricted to the necessary minimum
- if the stream-bank stabilisation is needed, vegetative measures are to be applied

f) Air

During the construction phase transport and construction vehicles will have effect of mobile sources of air pollution and will produce flue gas emissions on access roads and on the construction site. Individual construction sites will represent diffuse sources of air pollution, that will produce increased dustiness.

Operation of the line will not cause any air pollution. Waste heat can be produced during the operation in the immediate vicinity of the line and thus imply warming and air drying. However, such changes will be of a minor nature having no impact on the overall change of the air temperature.

Measures:

- measures to eliminate disturbance of life comfort and quality are to be applied – see part s)

g) Waste

During construction of the 2x400 kV line waste will be produced by following activities:

- felling of trees and shrubs
- earth and foundation works
- installation of towers and cable pulling
- dismantling and displacement of other lines
- presence of workers

Routine operation of the line will not produce any waste.

Measures:

- re-usable waste, that will be temporary stored in the area of PZ or at both line termination points (TR Križovany, ES Bystričany), will be transported for re-use. Waste will be disposed according to the contract and in line with legislative requirements
- proper waste disposal during the construction under agreed conditions in line with the building permit. All workers, contractors and subcontractors must be instructed on the waste treatment
- the replaced 220 kV line has to be properly dismantled and liquidated, arable land has to be returned to original state after the temporary acquisition of land is over.

h) Impacts on habitats and flora

note: the assessment of impacts on flora, habitats, fauna and protected areas including NATURA 2000 was realized based on the following partial researches:

- *Ing. Libor Ulrych, PhD. : survey on real vegetation and habitats in the affected area, identification of habitats of European and national importance and evaluation of possible impact of activities on these habitats, 2012, 2012*
- *RNDr. Vladimír Slobodník, CSc.: inventory research of ornithofauna and estimation of presumed impacts of the 2x400 kV line construction on avifauna in the concerned area and on the affected CHVÚ (NATURA 2000).- also stated in the chapter 4.1*

From the timely point of view, the routing of new 2x400 kV line, its operation as well as realisation of regular tree-felling related to the maintenance of PZ represent permanent and long term impact on biota. Impacts of the construction are of temporary, mostly irregular nature. In relation to biota they will have following effects:

- permanent intervention into parts of continual forest vegetation of Tribeč foothills
- interventions into non-forest linear vegetation of riparian formations and hedges
- disturbance of meadows
- possible disturbance of wetlands in case of construction vehicles transits
- possible, unintended introduction of non-native and invasive species caused by transition of construction vehicles
- increase of synantrophisation and ruderalisation

This will lead to permanent impacts and occupation of habitats by installed towers.

Temporary impact on habitats is connected with the use of several non-paved access roads as well as with movement of construction vehicles within PZ of the new line.

Affecting habitats and vegetation by pollution (contamination) or degradation of other environmental components mean risks during construction phase.

Maintenance of the PZ of extra high-voltage transmission (EHV) in meadow habitats will be ensured by regular removal of successive vegetation, which will contribute to preservation of these habitats in favourable status.

Measures:

- damages on forest and non-forest habitats in the preliminary identified extent could be compensated by revitalisation and remediation of damaged sites, by revitalisation and afforestation of PZ of the line including follow-up management
- tree felling within the new PZ will be reconsidered in terms of its minimization, while possibilities set by the Energy Act will be used – regarding keeping the vegetation cover in 5 m distance from the edge conductors taking into account the height of towers (possibly the deforested zone will not fully cover the PZ and the maintained vegetation will not threaten lines in case of their fall)
- tower sites will be proposed in such way, that coomb, erosion rills, riparian formations, alluvial deposits of rivers and streams will be bridged as much as possible
- works located close to, or within wetland habitats will be performed exclusively during dry season, eventually apart from the growing season. The movement of construction vehicles in wetlands and water-logged areas will be forbidden
- all available measures to avoid extension of ruderal and invasive vegetation should be used
- installation of towers in areas of linear non-forest vegetation is undesirable
- manipulation with conductors during cable pulling will be minimized in sections crossing non-forest, mainly linear habitats of significant importance
- grown tree felling on the agricultural land will be minimized – only high-growing tree species will be removed, low-growing shrubs will be kept
- tree felling (extension of the PZ) will be realised apart from the growing season
- afforesting of the new PZ (eventually leaving to succession) will be proposed and realised on the basis of environmental criteria, in coordination with the nature protection authority
- native plant species, typical for the respective vegetation level and habitat type will be used by afforesting, with long term follow-up management
- movement of construction vehicles in the protective area in free land of grassland formations out of the forest has to be kept as limited as possible, in narrow and restricted area
- tower sites should be proposed as far from water-stream banks as possible
- revitalisation activities as compensation for disturbance of sites of national or European importance will be realised in cooperation with the State Nature Conservancy within the affected habitat, eventually on substitutive sites, whereas use of all available restoration methods is recommended, depending on the level of damage and requirements of State Nature Conservancy.

i) Impacts on fauna

Routing of the line itself will not have any significant impact on fauna in comparison with the current state. The route of line will run within existing corridors (deforested ones in forest area), except of local bypasses.

Construction activities in protective zone of the line will cause disturbance of animal species, which will imply temporary abandonment of the respective area by movable animal species.

Nesting possibilities for birds will be worsen due to expanding tree-felling only locally, without impact on nesting possibilities of criteria and other important forest bird species. Tree

felling and construction activities apart from nesting season will eliminate the devastation of possible active nests, resp. nesting in surrounding vegetation.

The proposed routing of electric power line interferes with 2 bird migration routs:

- bottom land of Vah river
- bottom land of Nitra river

The greatest risk of collisions with the line relates to bad atmospheric conditions for flying, such as strong wind, rain, fog, dark nights. Under such conditions the migrating bird species have the tendency to lower their flight level.

Comparing with the current state the risk of bird collisions caused by the construction of new 2x400 kV line will be increased, as instead of one - system 220 kV line (three single wires – cables) a new two-system 400 kV line (six three-bundle wires + two combined ground cables) will be installed. On the other hand, massive three-bundle (triple) cables are better visible for birds; moreover other line-marking elements will be installed in selected tower spans.

An integral part of the project of 2x400 kV line construction will be installation of **line-marking elements** (currently missing on the existing 220 kV line) in selected tower spans to minimize the risk of bird collisions, as well as installation of artificial nests for raptors on selected towers. Compared to the current state, both measures will significantly improve environmental parameters of the proposed activity as regards birds (avifauna).

Measures

- tree felling will be carried out apart from the growing and nesting seasons and out of migration periods (from September to the end of January), in line with the existing legislative
- a survey on occurrence of nesting bird species within the concerned area will be performed prior to tree felling, if necessary
- in order to avoid possible bird collisions with cables of the line, better visibility of cables will be secured in selected sections under coordination of nature conservation authority
- construction works with high disturbing impacts in forest areas of Tribeč foothill will be restricted as much as possible in the spring time of reproduction and nest-leaving of juveniles
- artificial bird boxes for nesting raptors (birds of prey) will be installed on selected towers
- artificial nest pads will be installed in sections inside forests, eventually at other places as well
- survey on possible nesting of raptors on towers prior to dismantling works on 220 kV lines will be conducted

j) Impacts on landscape structure

Dense network of overhead power lines is typical for the affected area; hence the proposed activity does not represent a new landscape element. Moreover, routing of the proposed line will be located in existing corridors of overhead lines.

k) Impacts on landscape scenery

The proposed 2x400 kV line will not represent a new landscape component; however it will become a new vertical and linear dominating element in several open and visible sceneries. Perception of impacts on the landscape scenery is mostly of subjective nature and depends on individual sensitivity of each single person.

l) Impacts on landscape stability

Construction and operation of the line will have no impact on the overall ecological stability of the affected area.

m) Impacts on protected areas (national network)

Approximately 1,7 km long section of the proposed 2x400 kV line will pass through the Protected Landscape Area Ponitrie (under 2. degree of protection).

Inside the Protected Landscape Area the new line will run in the original routing. The existing corridor will be extended, thus not introducing completely new activity, such as new corridor cutting off already existing connections in the forest ecosystem concerned.

The quite broad (55 m) PZ of the current line has effect of barrier in the forest area and induces ecosystem fragmentation, especially for higher vertebrates. On the other hand, it creates suitable feeding habitats as well as migration space for several terrestrial fauna species. Substantial for the overall impact on the territory of Protected Landscape Area is the fact, that replacement of line will be realised instead of construction of a new one. This means, that the operational impacts already exist and they will remain of similar nature after the project completion.

Interventions into habitats of significant importance are presumed as well: Ls2.1 – 91G0 *Pannonic woods with Quercus petraea and Carpinus betulus*, Ls3.1 – 91HO *Pannonian woods with Quercus pubescens*, Ls5.4 – 9150 *Medio-European limestone beech forests of the Cephalanthero-Fagion*, Tr1 – 6210 *Semi-natural dry grasslands and scrubland facies on calcareous substrates*, Lk1 – 6510 *Lowland hay meadows*

Extension of PZ at the expenses of these habitats covers area of 1,6 ha (in case tower type DONAU will be used) or 0,9 ha (towers SUDOK).

Grassland habitat of European importance Lk1 - 6510 *Lowland hay meadows* has been identified within the deforested line corridor on the territory of Protected Landscape Area. In case of this habitat type it is to be mentioned, that the regular yearly maintenance of the PZ by felling of successive tree species will help to improve the favourable status.

It is to say, that the construction, if respecting proposed measures, will not have any significantly negative impact on the subject of protection.

Measures:

- the II. degree of protection must be strictly followed by the construction of line inside the Protected Landscape Area Ponitrie
- substitute out-planting of trees in the Protected Landscape Area Ponitrie (eventually leaving the PZ to natural succession) will be coordinated with the nature protection authority
- towers of possibly minimum height will be used for the line routed in open plain landscape
- preferably SUDOK tower type will be used in forest section taking into account lesser demand on the width of PZ, eventually in other sections covered by forest vegetation or important forest habitat as well

n) Impacts on sites of Natura 2000 network

Routing of the proposed 2x400 kV line also intervenes into the sites of Natura 2000 network: namely Special Protection Areas (SPAs) - designated in line with the Council Directive No. 79/409/EEC on the conservation of wild birds (known as the Birds Directive) – according to the national legislation: Protected Bird Areas (CHVÚ): **CHVÚ Tribeč (SKCHVU031)**, which is crossed by the line in length of ca. 2,5 km.

The purpose of protection in the CHVÚ Tribeč is in particular the protection of imperial eagle and its nesting and hunting habitats, as well as ensuring favourable status of bird species habitats of European importance and migrating bird species.

The routing passes through the CHVÚ Tribeč at its edge that is completely used for agricultural purposes, eventually covered by anthropic areas. These sites represent mainly hunting, less nesting habitats of species, whose protection was the reason for designating the Special Protection Area.

The fact that the proposed line passes through the protected landscape area within already existing corridor of 220 kV line is substantial for the assessment of possible impact on the territory.

As regards the migration function of the Special Protection Areas (CHVÚ) Tribeč, it is to say, that the number of lines in one single corridor will not change due to construction of new 2x400kV line, as this new one will replace the existing 220kV line. The risk of bird collisions remains at the current level, as the increased amount of cables will be compensated by their robustness – visibility and by the installation of line-marking elements at cables. In comparison with the current state this will be a significant positive element of the proposed activity. Moreover, installation of artificial nests for raptors on towers is presumed in this section.

Disadvantages result from the fact, that the bottom land of Nitra river is an important migration corridor for birds in Slovakia. Routing of the line intervenes into the bottom land of Nitra river on several sites.

The asset on the other hand relates to the fact, that predominantly agricultural habitats (agrocenosis) are present within the routing of the power line – also within the 2,5 long section passing through CHVÚ Tribeč. Agrocenosis are characterised by lowest diversity of nesting bird species.

Summarizing, the impact of the proposed activity on subject of the protection of criteria species within the Special (Bird) Protection Area (CHVÚ) Tribeč is not presumed.

Measures:

- construction of line apart from the migration period helps to minimize potential collisions
- taking into account that the proposed routing of the 2x400 kV lines passes the territory of Special Protected Area (CHVÚ) Tribeč being site of the European Natura 2000 network, it is inevitable to implement all measures linked to the management of this area, including the **priority of environmental supervision during construction works**
- respecting measures for elimination of impacts on fauna – part h)

o) Impacts on the territorial system of ecological stability

The proposed 2x400 kV line in location Bystričany - Križovany will not have any impact on functions of affected elements of the territorial system of ecological stability; functionality can be temporary limited during construction of the respective section of the line.

p) Impacts on urban complex, land use an infrastructure

Indirect positive impact on industry is represented by the production and surface treatment (galvanization) of new towers needed for construction of the new line.

Users of existing field and forest roads will be temporary limited during the construction of the proposed line.

Public domestic **airport Partizánske** for general aeroplanes and **field airport Ludanice** are located in the affected area – Partizánske, municipality district (MD) Malé Bielice.

Operation of the line will have a temporary impact on the operation of that infrastructure, where modifications or displacements linked to the construction of new 2x400 kV line is presumed. It particularly relates to lines 110 kV and 22 kV.

Forestry will be affected by construction and operation of new 2x400 kV line, both in positive and negative way. The most significant projects activities regarding effects on forestry are the following:

- permanent (frequent) tree felling in the extended PZ of the line corridor
 - temporary tree felling – in case of adjustments of existing access roads
 - afforesting and maintenance of planted trees in the new PZ
- rehabilitation of temporary occupied sites

Operation of the line will slightly increase permanent negative impact on the land use for agricultural purposes on arable land, which is related to the permanent occupation of tower sites.

Measures:

- elaboration of expert review for the standpoint of the Civil Aviation Authority on the routing of the proposed 2x400kV line in PZ of the field airport Ludanice as well as on the routing in PZ of the airport Partizánske
- respecting measures to eliminate impacts on vegetation – part g)
- application of measures for elimination of disturbing impacts on the life comfort and quality – part s)

r) Impacts on cultural and historical monuments

Based on current knowledge, no impacts of construction or operation of the proposed line on cultural and historical monuments are presumed.

Based on current knowledge, no impacts of construction or operation of the proposed line on the existing archaeological and paleontological sites are presumed. One of further requirements for the next construction preparatory phase (zoning decision) is the standpoint of competent Monument Board on the line construction.

Measures:

- archaeological survey in line with the Act No. 479/2005 Coll. has to be performed during the preparatory phase of the proposed line construction

s) Manpower demand

The daily manpower demand during construction of the line is estimated in the amount of about 50 - 100 workers, who will work on the installation, preparatory fieldworks, tower basements concreting and transport of materials.

During the operation phase manpower will be needed for maintenance and control of the line. Manpower will be hired locally by contractors from local inhabitants (depending on the required skills).

t) Disturbance of comfort and quality of life

Impacts on population are presumed mostly during the construction phase. These will result from the movement of transport and construction vehicles on the access roads including crossing affected municipalities.

In relation to the operation of new line possible negative visual perception from side of the affected inhabitants can be expected. Such perception is of subjective nature and depends on the criteria and sensibility of each single person.

Operation of the line will not have new barrier or dividing effect in the structure of the affected settlements., since new line will be installed in the existing corridor (except for the proposed bypasses of built-up parts of urban units which improve the perception of new line).

Positive impact is represented by the partial economic asset for inhabitants of the affected settlements that results from:

- financial compensation for land easement for owners of the affected lands
- financial compensations for the temporary occupancy of agricultural and forest land during construction
- financial compensation for restrictions in land use in the PZ during the operation of new 2x400 kV line

Within the previous step of impacts assessment of the proposed activity on environment (Preliminary Environmental Study) no disclaimer opinions from inhabitants of the affected municipalities were noticed. Objections of municipalities on the routing were solved during preparation of the Environmental Impact Statement and are incorporated in it.

Measures:

- movement of construction vehicles will be allowed exclusively on existing access roads defined in advance. Existing local, field and forest roads will be used as first. The existence of such roads will be checked during a field survey. Construction of new access roads is possible only within the corridor of PZ of the line
- unpaved access roads will be maintained in good technical conditions during works, so any unwarranted widening of used roads will be avoided, as well as erosion and changes on habitats
- paved roads will be regularly cleaned
- fieldworks will not be executed during long-term seasons of draughts in order to minimize the dustiness.

u) Health risks

No impacts on population and its health are expected in relation to construction works.

As regards the operation of the proposed 2x400kV line, taking into account its nature and especially location of the line mainly outside the build-up and permanently inhabited areas, no impacts on the population health are presumed.

For the proposed activity – 2x400kV line in locality Bystričany – Križovany, in the frame of next phase of preparation the project documentation (for the zoning decision) an expert study will be elaborated, that will evaluate the assumed level of electric and magnetic fields in regard to the hygiene limits set by the applicable implementing legislation. Results of this study will be taken into account and the projected construction will be modified accordingly (e.g. revising the height of towers when creating the longitudinal profile of the line), so that the operation of the power line complies with hygiene limits.

Electromagnetic radiance produced by the operation of new 2x400kV line will have no impact on human health as far as the standard STN EN 50 341-1 is respected, which does not permit permanent presence of people inside the PZ of line.

Measures:

- The implementation of results of expert review elaborated by certified organization for elimination of impact of electromagnetic radiation on the health of population into the next project preparation within the documentation for the zoning decision process.

v) Transboundary impacts

The proposed activity – construction of power transmission line rated 2x400kV Križovany - Bystričany will not cause any transboundary impacts or affect the neighbouring countries.

Further measures

- emergency plans for disposal of possible oil substance spills will be incorporated into the documentation of the proposed construction. Use of sand for backfill is prohibited, for this purpose effective sorbents must be prepared in advance (Vapex, milled clay etc.). For these emergency situations it is necessary to have built-up isolated space for storing contaminated soil
- standard respecting of existing technical, technological, organisational and safety regulations related to the construction and operation of the proposed type of activity
- prior to the application for authorisation of felling of non-forest vegetation according to the Act on nature and landscape protection it is necessary to evaluate the public tree value based on dendrological survey in line with the ordinance No 24/2003 Coll. of the MoE SR. Replacement planting in line with ecological principles or financial compensation for damage in the amount corresponding to the public value of felled trees are to be included in the project documentation
- rigorous respecting of the national and European legislation
- maintain the environmental impact on the project through preparation and implementation of special project for monitoring (see part 5)
- establishment of environmental supervision of the construction for selected sites or sections of the line with the aim to control the construction works, respectively to for supervision of respecting proposed measures, being a monitoring tool during the construction phase (see part 5).

Occurring negative impacts are mostly of local nature, with different level of importance. Most of them are reversible and reducible through appropriately proposed environmental measures (as mentioned above).

Spatial distribution of presumed overloaded sites

Taking into account the nature of proposed activity, the existence of potentially overloaded sites relates exclusively to the construction phase. Resulting from the analysis of presumed extent, spatial demands and means of realisation, as well as preliminary

timeframe of the construction works, relatively most loaded will be sections or sites of the proposed line corridor, where combination of following phenomena is presumed:

- termination areas of the proposed line
- forest sections where tree felling will be necessary
- sections of line getting closer to borders of built-up areas of affected municipalities
- sections with higher density of reinforcing towers
- technologically demanding junction points where crossing and displacement of other overhead lines is necessary
- directly effected areas or close surroundings of important habitats

Significant overload of following sites is presumed according to the above mentioned criteria:

1. Point of the mouth into DP Križovany (cadastral area Zavar, Križovany nad Dudváhom, section 1.1)

In this section, increased working activity related to the crossing and displacement of other overhead lines in the termination area of the proposed 2x400 kV line is expected. More frequent crossing of the municipality Zavar is presumed in connection with establishment of the temporary construction site, respectively storage space in premises of the electric station.

- measures to eliminate disruptions of comfort and life quality are to be applied – part 4.2 t)

2. Crossing of Vah river (cadastral area Siladice, Dvorníky and Dolné Zelenice, section 1.1)

In this section direct interventions into the alluvial area of Vah river are presumed, where relics of alluvial forest are present. Thanks to sand substrates the grasslands include elements of xerothermophilous vegetation, meadow formations, in depressions with hydrophilous communities. In this section important habitats were identified: Ls 1 – 91E0 *Alluvial forests*, Tr1 – 6210 *Semi-natural dry grasslands and scrubland facies on calcareous substrates* and Lk1 – 6510 *Lowland hay meadows*. This site is defined as trans-regional bio-corridor.

In the respective area increased working activity is expected as well. In this section direct intervention into the important habitat is presumed. At the same time, there is relatively wide inter-dike space, which means burdensome access for construction works.

Crossing of electrified railway line No. 133 and one-side spur track in the extended space close to train station building Siladice are specific for this section.

- measures to minimize the impacts on habitats and fauna are to be applied – 4.2 h) i)
- implementation of another measure – local modification of the route

3. Local bypass section Kapince and Biskupová (cadastral area Kapince, Biskupová, section 1.3)

In this section intensive construction activity related to the dismantled line and new line with higher density of reinforcing towers is presumed.

- implementation of measure - local modification of the route

4. Route section in Special Protected Area Tribeč (cadastral area Nitrianska Streda, Solčany, Topoľčany, Práznovce, Bošany, section 1.4)

In this section, where the Nitra river is crossed, direct intervention into the important habitat Ls 1 – 91E0 *Alluvial forest* is presumed. There is a conflict area between route of the line and planned highway R8. At the end of this section the line crosses the built-up area of MD Baštín, with one family house situated in the PZ.

- measures to minimize the impacts on habitats and fauna are to be applied – 4.2 h) i)
- implementation of measure - local modification of the route outside of MD Baštín

5. Forest section in Tribeč foothill (cadastral area Krásno, Partizánske, Malé Uherce and Brodzany, section 1.6)

In this section direct interventions into the forest formations of Tribeč foothill are presumed in form of areal tree felling at the edge of PZ in length of ca. 5100 m. Also intervention into the important habitats are presumed: Ls2.1 – 91G0 *Pannonic woods with Quercus petraea and Carpinus betulus*, Ls3.1 – 91HO *Pannonian woods with Quercus pubescens*, Ls5.4 – 9150 *Medio-European limestone beech forests of the Cephalanthero-Fagion* Tr1 – 6210 *Semi-natural dry grasslands and scrubland facies on calcareous substrates*, Lk1 – 6510 *Lowland hay meadows*

Integral part of this complex is the regional biocentre Šípok in the wider area of central part of Tribeč mountain, as well as the territory of Protected Landscape Area Ponitrie. At the same time this is a relatively rugged and regarding the access for construction works also quite burdensome section.

- measures to minimize the impacts on habitats and protected areas to be applied – 4.2 m) n)

6. Junction point Oslany (cadastral area Pažiť, Oslany, section 1.6)

In this section intense construction activity is presumed, in relation to the establishment of junction point of new 2x400 kV line with reinforcing towers at the point of mouth into the planned 2x400 kV line from DP Horná Ždaňa being the 2. phase of planned 400 kV interconnection Križovany – Bystričany – Horná Ždaňa. Bridging of road I/64 is included.

- measures to minimize disruption of comfort and quality of life are to be applied – part 4.2 t)

7. Point of the mouth into electric station Bystričany (cadastral area Bystričany, section 1.7)

In this section, in case of construction of the 400 kV distribution point (DP) in Bystričany, increased construction activity is expected in relation to the establishment of temporary construction site, resp. storage spaces in the premises of electric station as well as crossing and displacement of other overhead lines in the termination area of proposed 2x400 kV line. Within the termination section the line crosses the built-up area of MC Chalmová – Dolná Domovina, with on family house situated in the PZ. Measure: local modification of the route.

- measures to minimize disruption of comfort and quality of life are to be applied – part 4.2 t)
- implementation of other measure - local modification of the route

Operation of the proposed 2x400 kV line will not create any overloaded areas in the affected area.

Current environmental load of the affected area will not change by the operation of new line. The affected area will remain loaded especially due to the wide agricultural area and by intensive land use for agricultural purposes. Some parts will be affected by localisation of the activity in environmentally loaded areas, resp. along roads with higher level of noise and transport emissions (D1, I/64)

All environmental measures identified in the Final Record of the MoE SR will be transferred to conditions for each step of the following authorisation procedure for the construction (zoning decision, building permit, final building approval)

Economic benefits

The positive impacts of the proposed activity can be divided into three levels:

1. National level

The proposed 2x400 kV line represents new element of the transmission system, that will increase the operational safety of 400 kV network, connect the junction points and especially, ensures new quality of connections, which will strengthen capabilities of the national as well as cross-border electricity transmission system and enhance the development potential of SR.

Realisation of proposed activity – construction and operation of new 2x400 kV line in locality Bystričany – Križovany being the 1st phase of planned 400 kV interconnection between H. Ždaňa – Bystričany – Križovany is connected with the gradual decommission of old 220 kV system and its replacement by new 400 kV voltage level system

2. Regional level

The proposed 2x400 kV line, in case of construction of the 400 kV substation in Bystričany, will increase the industrial and consumer potential in upper region of Nitra river. It replaces the 220 kV system at the end of its running life.

3. Local level

During the construction phase temporary – midterm working possibilities will be created. The contractor will use local services in affected municipalities, mainly accommodation, catering and business.

Environmental assets

Creation of new nesting possibilities for raptors by installing artificial nests on selected towers of the proposed 2x400 kV line can be listed among environmental assets of the proposed activity. Due to absence of solitaire shrubs and trees in the open agricultural land usually the only possibility for nesting of raptors on towers of overhead lines. Experience from similar projects has proved success in this regard.

Another asset for avifauna is installation of visibility elements in selected tower spans that minimize risks of collisions of migrating bird species with the line. In the current system of affected corridors such element is missing.

Further asset is the establishment of new space for occurrence of shrubs or trees on tower sites in a monotonous agricultural land.

Construction and operation of the new 2x400 kV line in locality Bystričany - Križovany is in the proposed routing environmentally convenient and technically feasible and will fully respect the existing environmental legislative, regulations regarding human health protection, as well as normative requirements on the work safety, technical realisation and solutions for emergency situations.

5. Health and safety risks

No impacts on population and its health are expected in relation to construction works.

As regards the operation of the proposed 2x400kV line, taking into account its nature and especially location of the line mainly outside the build-up and permanently inhabited areas, no impacts on the population health are presumed.

For the proposed activity – 2x400kV line in locality Bystričany – Križovany, in the frame of next phase of preparation the project documentation (for the zoning decision) an expert study will be elaborated, that will evaluate the assumed level of electric and magnetic fields in regard to the hygiene limits set by the applicable implementing legislation. Results of this study will be taken into account and the projected construction will be modified accordingly (e.g. revising the height of towers when creating the longitudinal profile of the line), so that the operation of the power line complies with hygiene limits.

Electromagnetic radiance produced by the operation of new 2x400kV line will have no impact on human health as far as the standard STN EN 50 341-1 is respected, which does not permit permanent presence of people inside the PZ of line.

The construction of the 2x400 kV line and the way of its operation will minimize risks of subjective as well as of objective nature. Regarding the way of realisation of the proposed activity is it not possible to exclude risks linked particularly to the safety at work during the construction of the line.

From this point of view, the risk is linked with the fact that the new line is in the entire affected area routed along with the existing lines and the construction – installation of towers and cables will be performed mostly during operation of these lines. Relatively greatest risk can arise during unfolding and regulation of cables, as well as when taking down cables from capstans and installing them into isolating chains. The above mentioned risk identification results into following proposal of working conditions:

- earthing (grounding) devices on capstan and retarder have to be used when unfolding cables
- conductors must be earthed on the tower construction by using counter-rotating capstan with earthing device
- when connecting capstan and main clamp the conductor must be earthed
- during installations on towers the working place must be earthed
- workers must be informed about the possible danger arising from induced voltage
- the way of pulling cables and earthing must be prescribed in the project documentation together with requirements on the work safety being binding for the contractor

Operational risks can be implied by factors directly connected to the operation of the line (release or falling of the cable, or tower), eventually by factors not connected to the operation (seismic, atmospheric etc.). Risky situations as regards the work safety can arise during regular maintenance or repairs of the appliances.

In the past 30 years no such potential risks were noticed. These cases are avoided by regular, so called technical monitoring of all lines performed by field inspections or from the air (e.g. helicopter).

6. Follow-up environmental supervision and monitoring

Following the impact assessment process the environmental impact on the construction will be maintained through the follow-up process.

As a part of the next project preparation phase for the construction in frame of the permission process as well as during the following construction and operation of the proposed activity a monitoring system will be elaborated. Monitoring will be performed in three phases: ex-ante (prior to the construction), during the construction and during the operation. The idea of the monitoring as described in the Impact Assessment Statement suggested long-term monitoring of biota in relation to the project, namely monitoring of vegetation and bird species. Monitoring will be executed on selected monitoring sites, eventually line sections connected with the occurrence areas of important non-forest or forest habitats, eventually important bird habitats.

The aim of the project is in particular:

- to record the base situation in the area in advance prior to the construction
- to identify changes during the construction phase
- to evaluate real level of impacts in comparison with the expected level
- to evaluate the state of art and development after completion of the construction (running phase)

The coordination with project and engineering organization for placing of towers with the aim to apply environmental criteria of placing of tower sites is specific part of the monitoring in the phase before the construction.

Specific part of the monitoring in the phase during construction will be system of environmental supervision of the construction. This means direct control of construction Works in filed with the aim to control respecting of proposed environmental measures and their proper implementation and ad-hoc guiding on construction in concrete situations.

The regular reports of environmental supervision will be sent to the building office and particular affected municipalities, where they will be available for the public.

7. Conclusion

The Environmental Impact Assessment was carried out in compliance with the applicable national and European legislation.

It follows from the assessment that none of impacts reaches the extremely significant degree. There are four of the significant negative impacts – risk of erosion and mechanical disruption of soil, felling and occupation of forest habitats, risk of collision of birds with the line and the disturbance of comfort and quality of life of population during construction. There is one positive significant impact – development of Horná Nitra region.

All impacts are relievable through the realization of proposed environmental measures.

It can be concluded, that public was sufficiently and regularly provided with information about the proposed activity. The activity was publicly consulted and no negative objections were raised.

Similarly, no disclaimer opinions from the side of affected municipalities or state administration authorities were submitted. Comments of stakeholders were formulated as proposed measures or requests for modifications. Relevant requirements were accepted and incorporated.

Several modifications were added within the Final Record issued by the competent authority (MoE) as result of multilevel assessment and commenting on the original routing proposed by the proponent. These modifications contribute to the environmental assets of the proposed activity. Possible modifications were incorporated mainly on the basis of standpoints of affected municipalities, state administration authorities and expert organisations as well as on the basis of the independent Expert Review.

It can be also declared, that a significant impact on the subject of protection of criteria species in the Special Protected Area (CHVÚ) Tribeč as well as on the subject of protection in Protected Landscape Area Ponitrie arising from the proposed activity is not presumed.

All stakeholders, including public, agreed on the evaluated routing with implementation of proposed measures.

In these terms environmentally evaluated project can proceed to the next phase, i.e. zoning and building permission process that requires the Final Record of the MoE including recommended measures as output of this assessment.

The public **that was involved in the process of assessment of impacts on the environment (EIA) as well as all owners of affected lands have the right to be participants also of the following authorization procedure of the construction according to the construction act.**

During the phases of project preparation within the process of land and construction proceeding and during the phase of construction there will be following possibilities for the submitting of public grievances:

- on the webpage www.sepsas.sk there will be the link for the interactive form enabling to send the grievance online
- **in the particular affected municipalities the forms for submitting the grievance will be available in the municipal authorities. These forms will be collected regularly and submitted to be solved.**
- the contact data of the constructor of building and the responsible person to who it is possible to submit the urgent grievance will be on a public place in the affected municipalities
- there will be the possibility to look at the documents with the current condition of the project with the contact details of the proponent or the responsible person for the given building section in the permitting building offices.
- During the construction a responsible person will be designated for receiving and current solving of delivered grievances for the given section.
- During the whole construction there will be a central place for public contact at disposal (SEPS)
- The program of involvement of the public will be published similarly as NTS on the web pages of EBOR
<http://www.ebrd.com/pages/country/slovakrepublic.shtml>).