

Annex 2-1: Comparison between Ukrainian requirements and International Standards relevant for ESIA

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
Environmental Assessment process			
<ul style="list-style-type: none"> General requirement for an ESIA in projects which are likely to have a significant effect on the environment. Categorization of projects according to their negative impact on environment 	<p>Articles 26, 51 of the law "On environmental protection"</p> <p>Article 13 and 34 of the law "On environmental expertise"</p> <p>Decree of the Cabinet of Ministers No.554, July 27, 1995</p> <p>DBN A.2.2-1-2003 (Section 1.7 and Annex E)</p>	<p>EU Council Directive (85/337/EEC) Articles 1-2</p> <p>EU Council Directive 97/11/EC Annex I,</p> <p>World Bank Group (IFC) OP/BP 4.01 -Environmental Assessment (Section, 1, 4-8)</p> <p>Sections 14 -16 of the EBRD Environmental and Social Policy (2008)</p> <p>IFC Operational Policies – Environmental Assessment (Section 8)</p> <p>Section 2.3.1 of EBRD Environmental Procedures</p>	<p>Environmental impact assessment is a compulsory component for any industrial project that potentially might have an environmental impact.</p> <p>Compulsory OVNS in Ukraine is foreseen only for the objects referred to the category of highly hazardous objects. High voltage power transmission lines are not on the list of highly hazardous objects established by the CMU Decree No. 554.27.07, 1995.</p> <p>The EU Council Directive (97/11/EC, Article 4 (1) Annex 1 (20) high voltage overhead electrical power transmission lines to the objects that require ESIA. Section 21 of Annex 1 of the EBRD Environmental and Social policy also refers these projects to Category A, which require comprehensive ESIA.</p> <p>Compared to Ukrainian requirements, European requirements are considered stricter since they require a compulsory ESIA for this Project.</p>

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
<ul style="list-style-type: none"> Environmental issues should be at the very early stages of project development (due to precautionary nature of environmental policies). ESIA should be built into the procedure for obtaining approval/permit of governments or IFIs financing. Possibility to reject a project on environmental grounds 	<p>Law "On environmental protection" Article 26.</p> <p>The law " On Environmental Expertise", Article 39</p> <p>Law "On environmental protection", Article 51</p>	<p>EU Council Directive (85/337/EEC) Articles 2, 8</p> <p>Section 4 of the EBRD Environmental and Social Policy (2008)</p>	<p>No investment/construction project in Ukraine can be implemented without positive conclusion of the state environmental expertise that is based on the materials prepared within OVNS.</p> <p>OVNS is one of the earliest documents to be prepared and reviewed within any investment project documentation in Ukraine.</p> <p>Based on both Ukrainian and IFI 's standards, environmental issues are addressed at early stage and a project can be rejected for environmental reasons.</p>
<ul style="list-style-type: none"> Standardized approach to ESIA, its contents and procedures 	<p>Chapter 7 of the law "On environmental protection"</p> <p>DBN A.2.2-1-2003</p> <p>DSTU (State Standard) ISO14001-97</p>	<p>World Bank OP/BP 4.01 Environmental Assessment.</p> <p>IFC Operational Policies – Environmental Assessment</p> <p>EBRD Environmental and Social Policy (2008)</p>	<p>The environmental assessment in Ukraine is regulated specifically by the national standard DBN A.2.2-1-2003. This act also specifically refers to particular legislative acts, regulations, industrial standards for architecture, materials, fire safety, health, soil, flora and fauna protection, and for operation of power transmission lines and equipment.</p> <p>Ukraine is a member of ISO International</p>

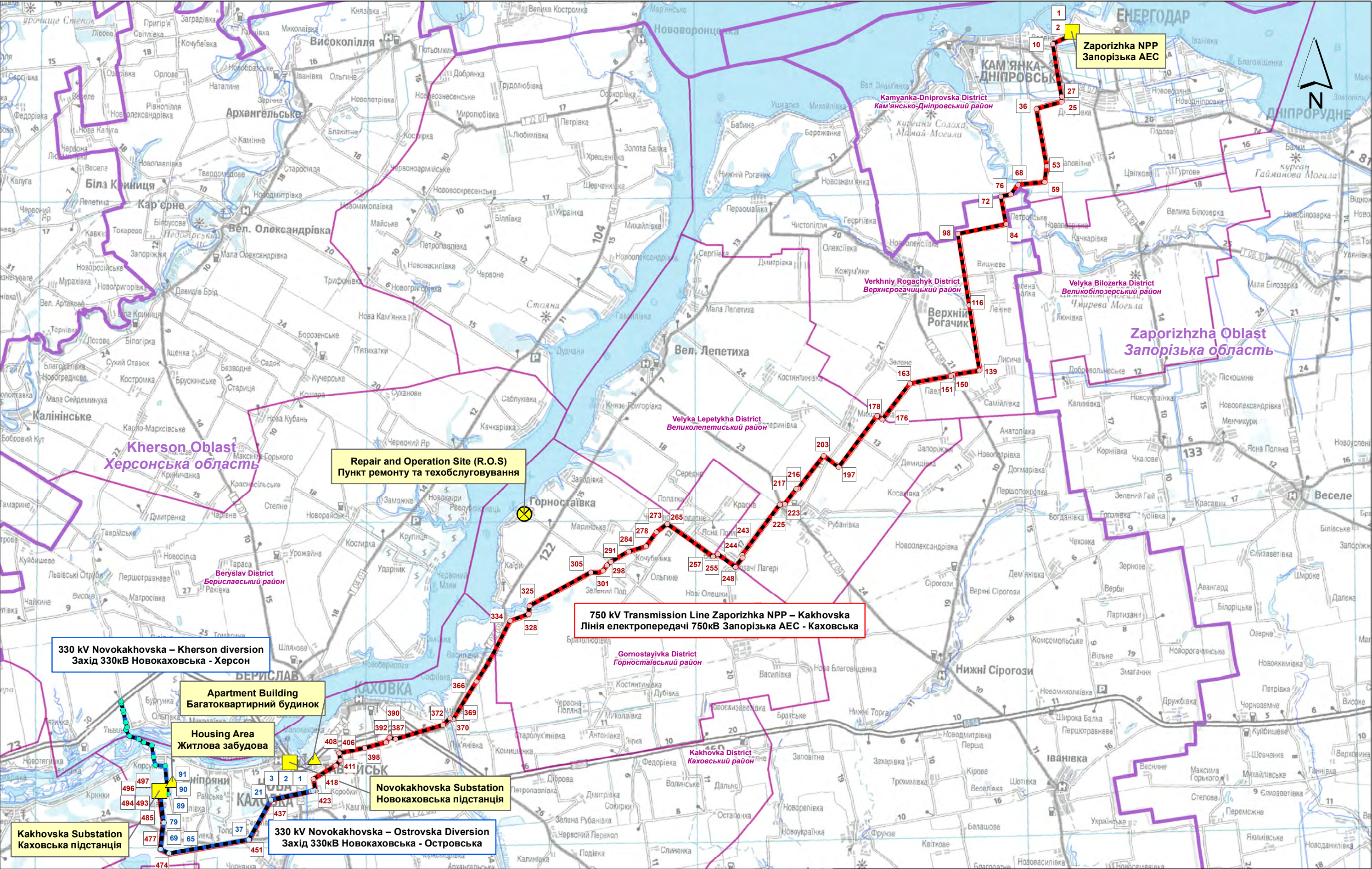
Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
			<p>Organization since 2004 and standards of environmental project management are also effective in Ukraine.</p> <p>Based on both, Ukrainian and IFI 's standards, a standardized approach to an EIA and a similar content and procedures are established.</p>
<ul style="list-style-type: none"> ESIA Contents 	DBN A.2.2-1-2003 (Sections 2-3)	<p>Article 3 of the EU Council Directive (85/337/EEC)</p> <p>Sections 2-3 of the World Bank OP/BP 4.01</p> <p>Annex B IFC Operational Policies (Environmental Assessment)</p>	<p>The Ukrainian OVNS standards require assessment of all those issues that are addressed under the international standards. However, the comprehensive OVNS is compulsory only in projects for construction of highly hazardous objects and the Ukrainian legal regime does not preclude project developers from doing it in projects that are to be financed through IFIs.</p> <p>The OVNS materials according to DBN A.2.2-12003 should include details concerning the following aspects:</p> <ul style="list-style-type: none"> ○ Motivation and legal requirements for OVNS in the particular project; ○ Physical and geographic characteristics of the landscape along the route of the power transmission line; ○ Description of the objects under construction and general description of the project; ○ Assessment of project's impact on the climate, air, geography, water soils, flora and fauna etc. ○ Assessment of social impacts produced by the

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
			<p>project;</p> <ul style="list-style-type: none"> ○ Assessment of project's impact on technological and industrial environment; ○ Comprehensive plan for ensuring all safety aspects and viability of the natural resources in accordance with the requirements of the legislation; ○ Assessment of temporary impacts during the construction period. <p>Compared to Ukrainian requirements, European requirements are considered stricter since the comprehensive scope detailed above is required for a wider scope of projects, including the construction of transmission line as in this Project.</p>
Public Consultation			
<ul style="list-style-type: none"> • Information disclosure and public consultations <p>Environmental issues to be identified and addressed at each stage of the ESIA</p> <p>ESIA conclusions are legally binding for</p>	<p>Constitution of Ukraine (Article 50)</p> <p>The law of Ukraine No. 832-XIV dated July 6, 1999 on ratification of the UNECE Convention on Access to Information (Aarhus).</p> <p>The laws of Ukraine " On information" (02.10.1992,.No. 2657),</p>	<p>UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters</p> <p>(Aarhus Convention)-1998.</p> <p>Sections 11, 26 and Annex 2 of the EBRD</p>	<p>The public access to the environmental information (including materials of OVNS and SEE- what do you mean? SEP?) is guaranteed by many legislative acts, supported by data filing systems and registers of the central and local authorities.</p> <p>Article 6 of the law "On environmental protection" Sections 1.6 -1.10 of the DBN A.2.2-1-2003 envisage participation of public in the decision-making process for deployment of industrial objects that might have an impact on the environment.</p>

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
project implementation	<p>"On Environmental Protection",</p> <p>"On State Environmental Expertise" (Article 10),</p> <p>"On associations of citizens"(16.06.1992, No. 2460-12)</p> <p>"On local self-governance" (21.05.1997 No. 280/97),</p> <p>"On requests of citizens" (02.10.1996, No. 393/96)</p> <p>"On planning and construction in territories"</p> <p>Regulation on participation of public in decision-making process for environmental protection (by Order No 168 of the Ministry for Environmental Protection</p> <p>The law " On Environmental Expertise", Article 39</p> <p>DBN A.2.2-1-2003</p>	<p>Environmental and Social Policy (2008)</p> <p>Article 6 of the EU Council Directive (85/337/EEC)</p> <p>Section 25 of the EBRD Environmental and Social Policy (2008)</p>	<p>The Ukrainian legislation provides for two documents 1) the Statement of Intentions (as a conceptual document) and 2) the Statement on Ecologic Consequences of the Industrial Operations (a legally binding document) which is subject to approval by the state and monitoring during the project cycle. The legally binding document for this Project is the Statement on Ecologic Consequences of the Industrial Operations.</p> <p>Compared to Ukrainian requirements, European requirements are considered stricter since a comprehensive public consultation process is required for a wider scope of projects, including the construction of transmission line as in this Project.</p>

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
Land Aspects			
<ul style="list-style-type: none"> • Compensation • Land valuation 	<p>Compensation for private landowners and land users will be assessed on the basis of Cabinet of Ministers Decree No 284 (1993)</p> <p>Law of Ukraine "On valuation of property, property rights and professional valuation activities in Ukraine" (2001) No.2658-III</p> <p>Law of Ukraine "On valuation of lands" (dated 11.12.2003, No1378-15)</p> <p>Decree of the Cabinet of Ministers of Ukraine "On methodology for expert valuation of lands" (No 1531 dated 11.10.2002)</p> <p>Order of the State Committee on Land Resource "On approval of procedure for expert monetary valuation of the land parcels" (dated</p>	<p>According to the publication "Public Acceptance for new transmission overhead lines and substations", published by Union of the Electricity Industry/EURELECTRIC, in most Western European countries the electricity transmission companies pay small amounts of compensation to the landowners and/or land users for the restrictions imposed by free span transmission line crossings. The payments are usually small. In Austria, for example, a single payment of approximately US\$ 0.45/m² is made to the landowner and does not take into account the use to which the land is put. In the UK some companies pay a fixed rate of compensation to the land owner for the impact of free span crossings while</p>	<p>In Ukraine, compensation for withdrawal of land plots will only be paid to the owners of the land required for the towers (permanent withdrawal, buyout). Owners and users of land crossed by the transmission lines and within the ROW and protection zones will be compensated for damage to crops and loss of potential earnings while assembling and erecting the towers (during construction), for access to the transmission lines, as well as the land required for construction camps, stockpiles, parking and maintenance of vehicles and equipment and any other uses.</p> <p>Levels of compensation will be determined by commissions created by the State Rayon Administrations that will include representatives of the affected Village Councils, the State Land Use Authority, the Rayon Architecture and Planning Authority, the Rayon Department of Finance, Ukrenergo and the affected landowners.</p> <p>The valuation is a constituent part of Land Acquisition Plan (LAP) preparation. A professional licensed valuator has to be employed.</p> <p>The standards of compensation for new transmission lines applied in Ukraine appear to be similar to those of most Western European countries. In fact, the standards in</p>

Issues	Ukrainian requirements	International good practice standards and EBRD/ EIB requirements	Comparison /Comments
	09.01.2003 No.2)	others pay a small monthly fee to the owners and users.	relation to EMR appear to be stricter, since they do not allow for any construction within 40m of the outer cables of the transmission line. However, unlike many Western European countries the Ukrainian standards do not envisage the payment of any compensation for the restrictions placed on the use of the areas under the cables (i.e. the land crossed by the transmission line).
Health Aspects			
<ul style="list-style-type: none"> Electro magnetic Radiation (EMR) 	<p>Public Exposure EMR limits according to State Sanitary Standards and Rules for Protection of Population from Impact of Electromagnetic Radiation (1996):</p> <p>Public Exposure EMR limits:</p> <ul style="list-style-type: none"> Electric Field [E]: 5 kV /m Magnetic Field [B]: 1.4kA/m <p>Occupational Exposure EMR limits:</p> <ul style="list-style-type: none"> Electric Field [E]: 5 kV /m Magnetic Field [B]: 1.4kA/m 	<p>EMF limits of International Committee on Non-Ionising Radiation Protection (ICNRP), 1998:</p> <p>Public Exposure EMR limits:</p> <ul style="list-style-type: none"> Electric Field [E]: 5 kV /m Magnetic Field [B]: 100 µT <p>Occupational Exposure EMR limits:</p> <ul style="list-style-type: none"> Electric Field [E]: 10 kV /m Magnetic Field [B]: 500 µT 	<p>The requirements applicable in Ukraine are well within the range of international planning practices and with established planning guides derived from ICNRP exposure limits. The Public exposure limit of EMR in the Ukraine is the same as the international standard (5 kV/m). The occupational exposure limit for EMR is well below the comparable international standard (5 kV/m against 10 kV/m).</p>



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

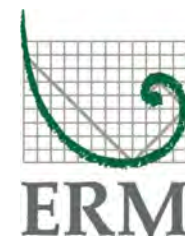
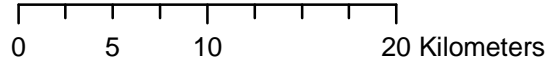
- Substation
- Work Shop
- Housing

Angle Towers

- 750 kV Line
- 330 kV Line Ostrovka Diversion
- 330 kV Line Kherson Diversion (Not yet numbered)

Administrative Boundary

- Oblast Boundary
- District Boundary



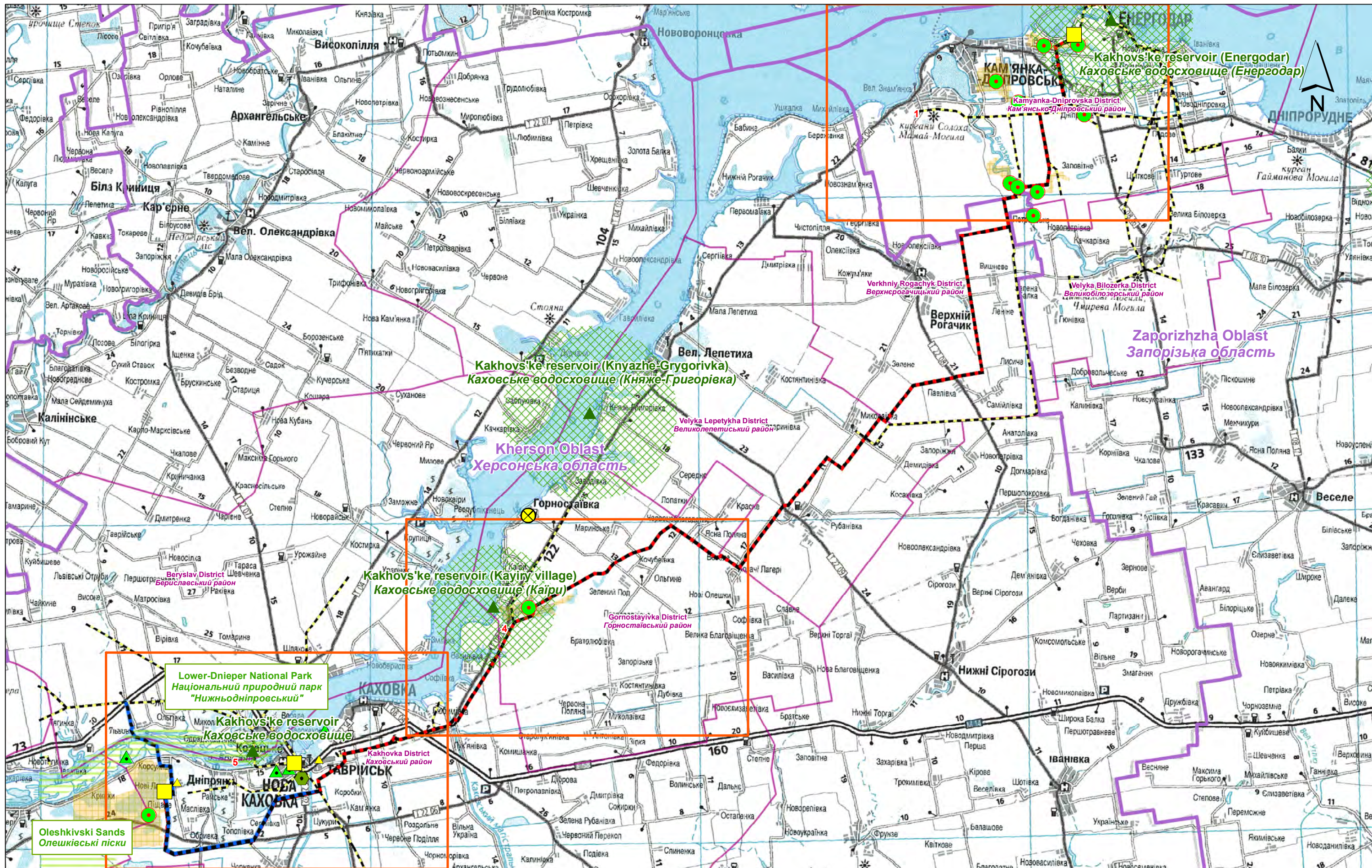
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750 kV Zaporizka – Kakhovska Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)

Project Overview Map



Project-No.:	P 98267
Scale:	1:400.000
Annex:	3-1
Size:	A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Work Shop
- Housing

Areas of Significance

- Zakaznyk
- Nature monument / Protected forest
- Botanical garden-park
- Detailed Maps

Important Bird Areas - IBA

- Planned National Nature Park
- Existing Transmission Lines

Administrative Boundary

- Oblast Boundary
- District Boundary
- Town or Village

0 5 10 20 Kilometers



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750 kV Zaporizka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Protected Areas and Cultural Heritage Overview Map		Scale: 1:400.000
Client: Державне підприємство Національна енергетична компанія УКРЕНЕГГО		Annex: 5-2.1
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Areas of Significance

- Zakaznyk
- Nature monument / Protected forest
- Botanical garden-park

Cultural Heritage Site

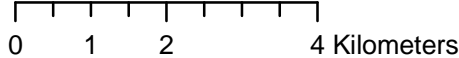
Important Bird Areas - IBA

- Planned National Nature Park

Existing Transmission Lines

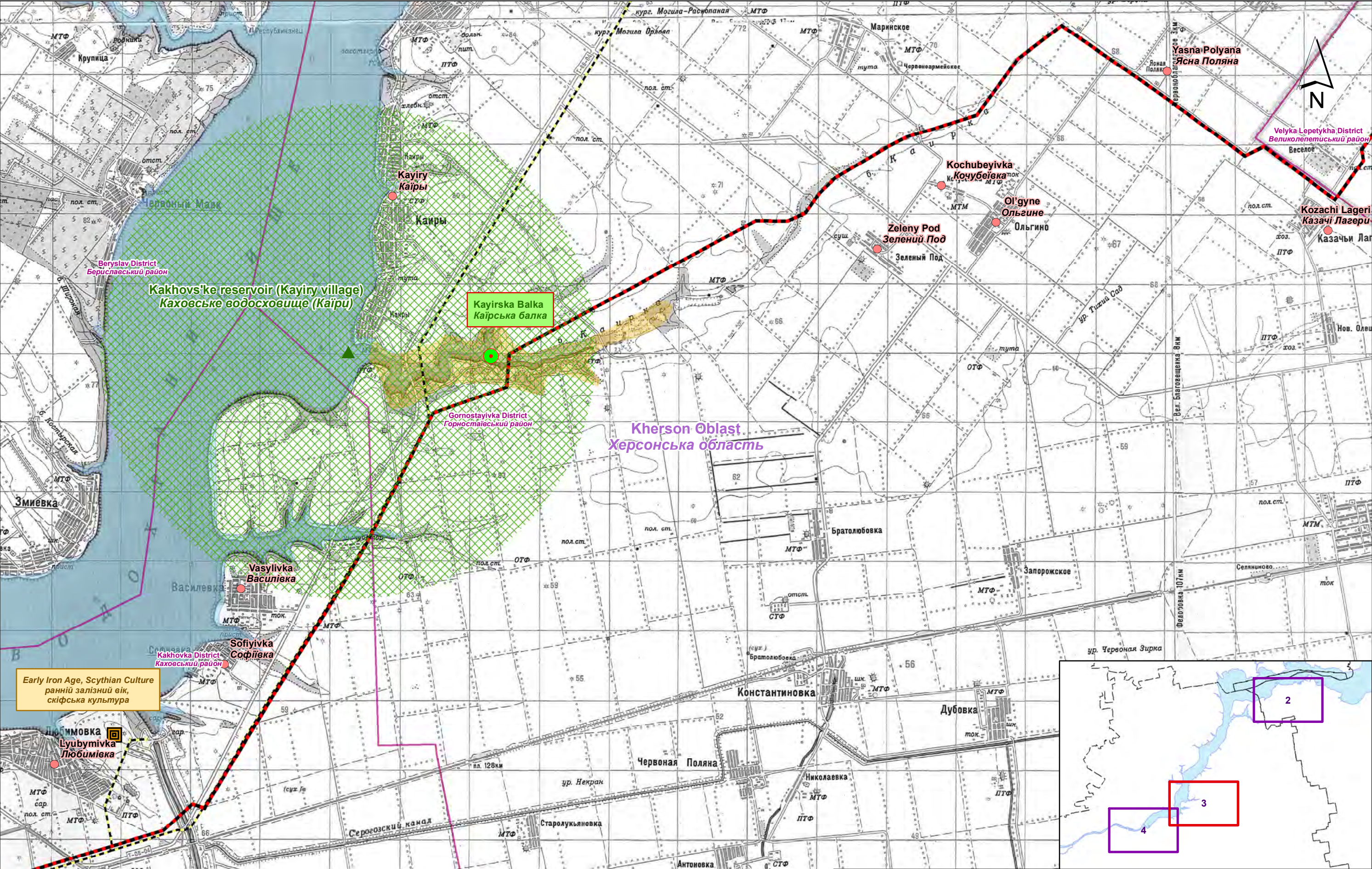
Administrative Boundary

- Oblast Boundary
- District Boundary
- Town or Village



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750 kV Zaporizka – Kakhovska Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Protected Areas and Cultural Heritage		Scale: 1:100.000
Client: 		Annex: 5-2.2
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Areas of Significance

- Zakaznyk
- Nature monument / Protected forest
- Botanical garden-park

Cultural Heritage Site

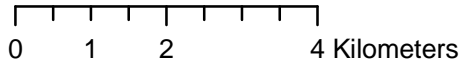
Important Bird Areas - IBA

- Planned National Nature Park

Existing Transmission Lines

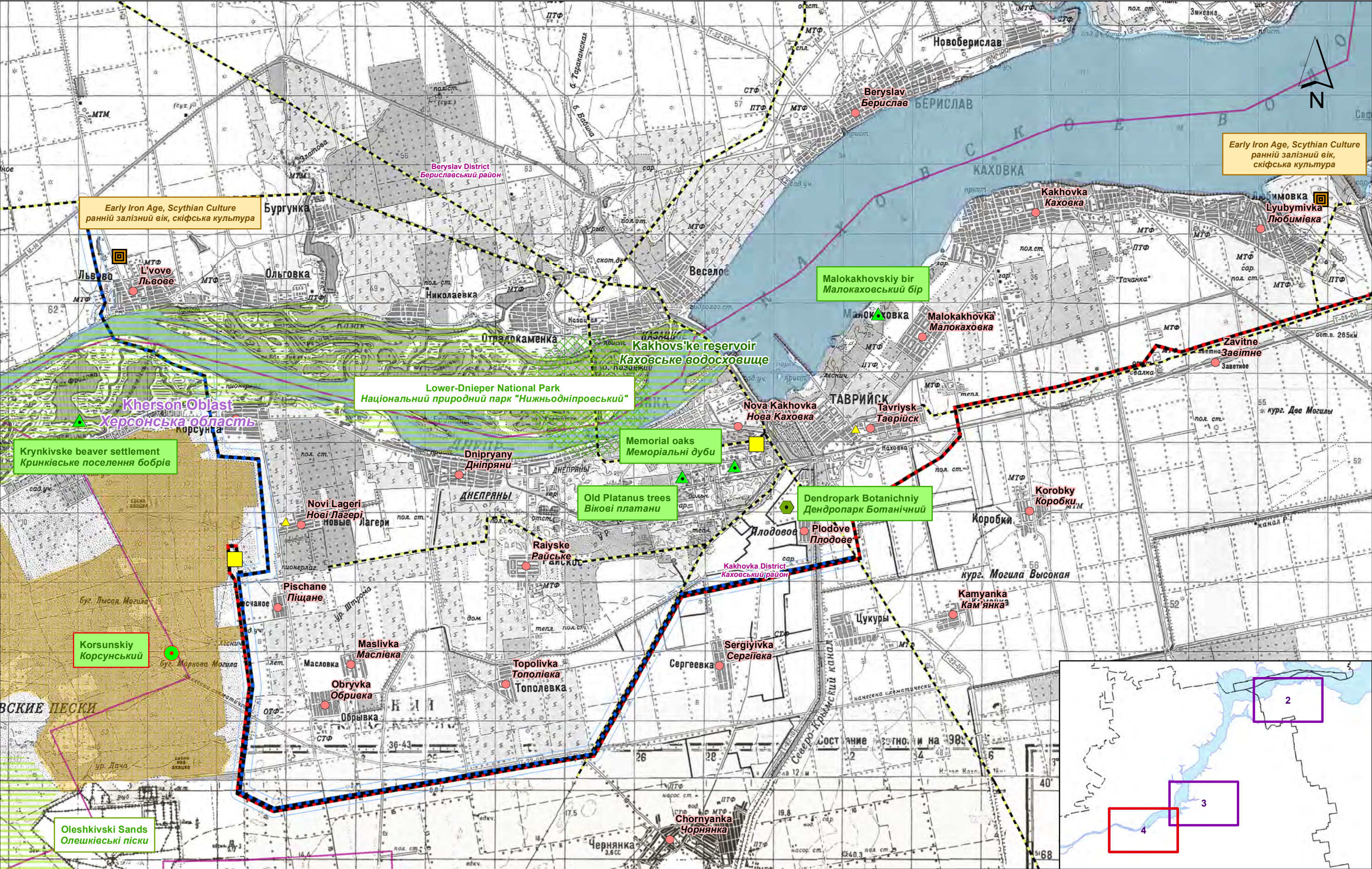
Administrative Boundary

- Oblast Boundary
- District Boundary
- Town or Village



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750 kV Zaporizhka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Protected Areas and Cultural Heritage		Scale: 1:100.000
Client: 		Annex: 5-2.3
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Areas of Significance

- Zakaznyk
- Nature monument / Protected forest
- Botanical garden-park

Cultural Heritage Site

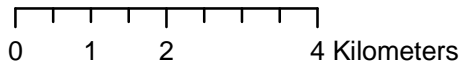
Important Bird Areas - IBA

- Planned National Nature Park

Existing Transmission Lines

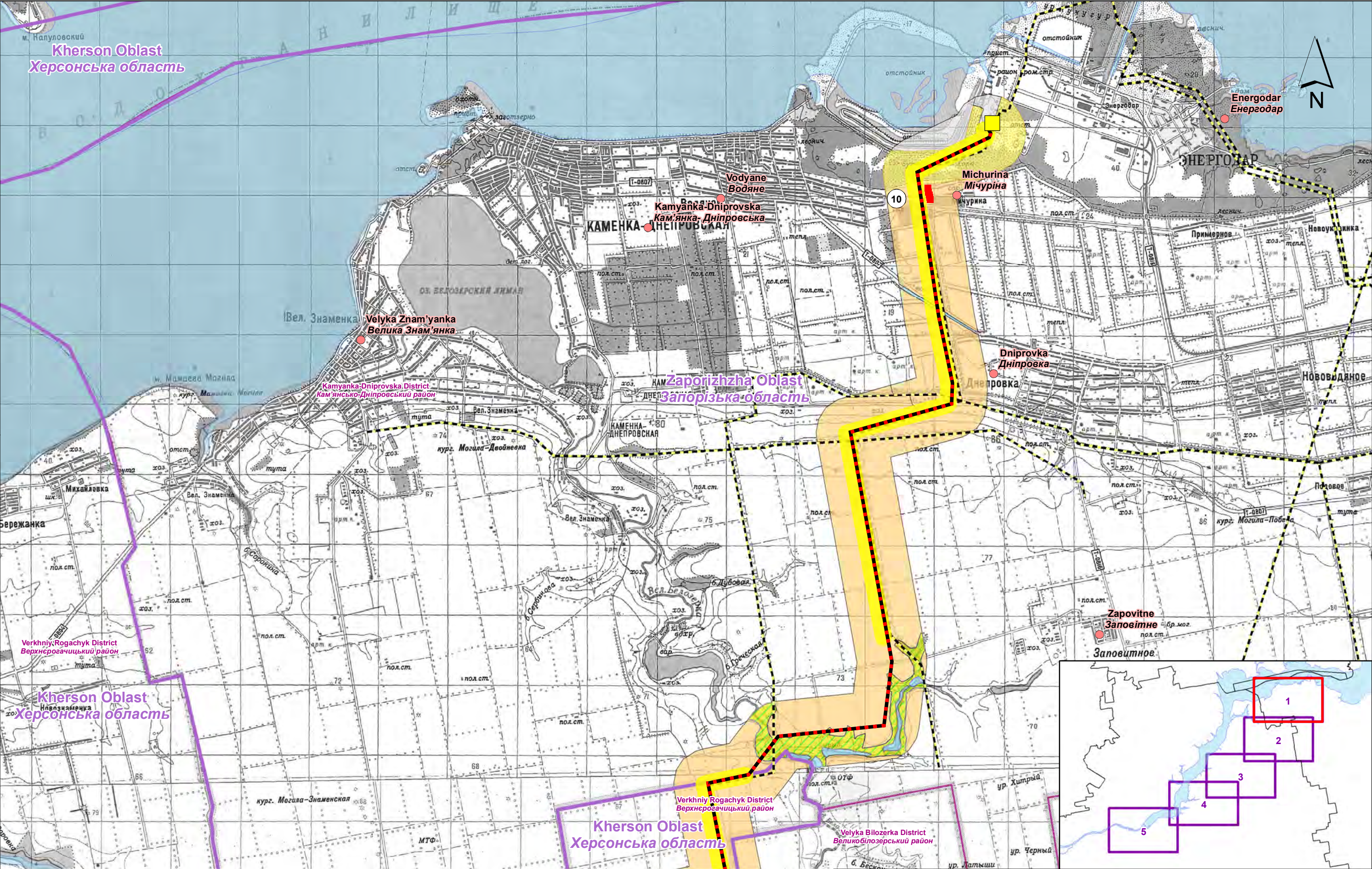
Administrative Boundary

- Oblast Boundary
- District Boundary
- Town or Village



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750 kV Zaporizka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Protected Areas and Cultural Heritage		Scale: 1:100.000
Client: 		Annex: 5-2.4
		Size: A3



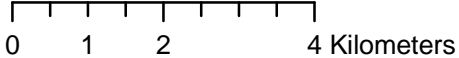
- Planned Transmission Lines**
- 330 kV Diversion
 - 750 kV Transmission Line
- Facilities**
- Substation
 - Housing

- Landuse**
- Water Body
 - Wetland
 - River Valley
 - Dunes and River Shore
 - Forest
 - Agricultural Land
 - Agricultural Land (irrigated by moving watering systems)

- Vacant Land
- Garden Land
- Settlement
- Industrial area / Harbor
- Town or Village
- Settlement within distance of 300m to planned Transmission Line (Number referred to in Text)

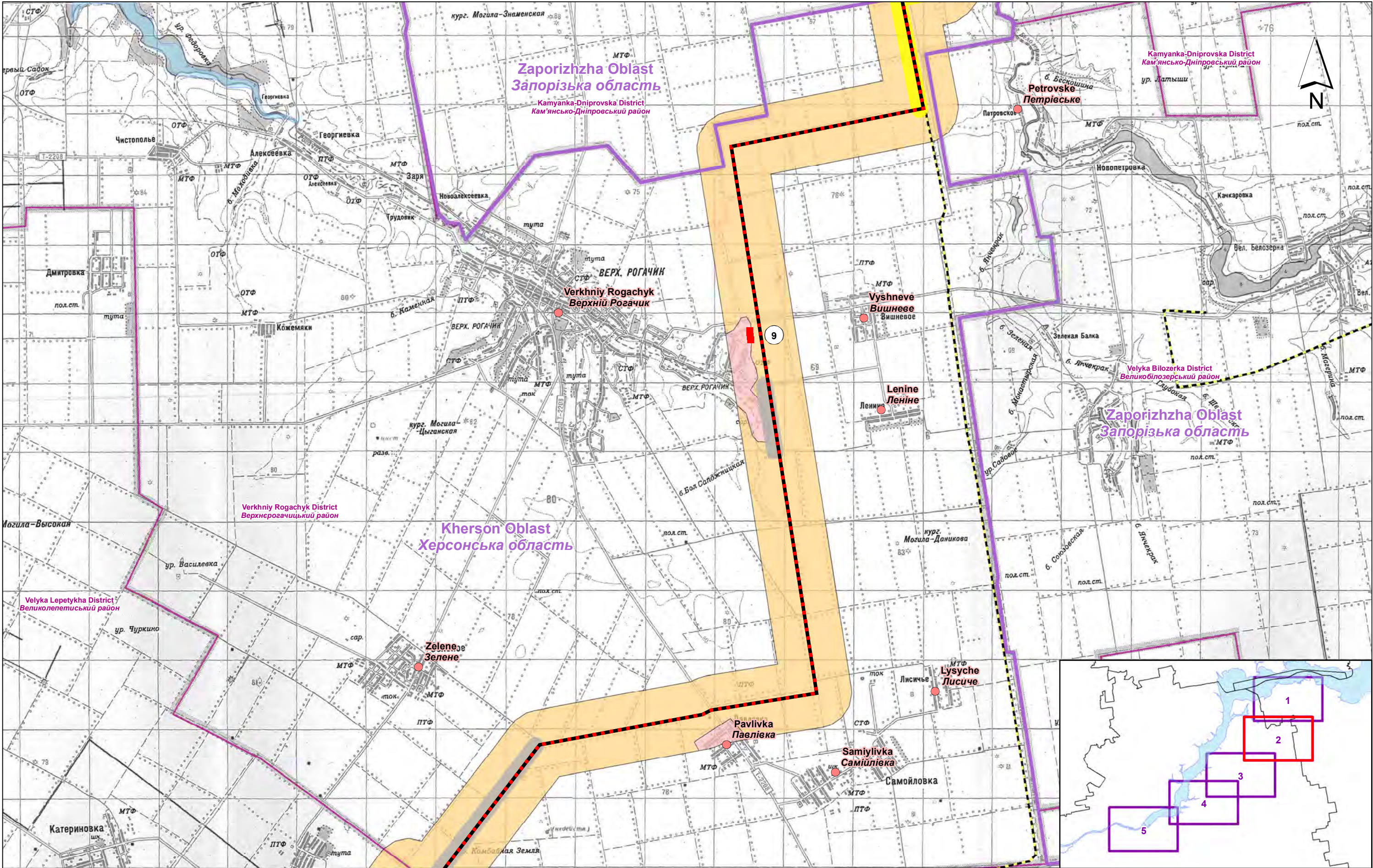
- Existing Transmission Lines**
- Bundling with other Infrastructure**
- Road or Path
 - Transmission Line
 - Transmission Line and Road

- Administrative Boundary**
- Oblast Boundary
 - District Boundary



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750 kV Zaporizhka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Landuse and Bundling		Scale: 1:100.000
Client: Державне підприємство Національна енергетична компанія УКРЕНЕРГО		Annex: 5-4.1
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Landuse

- Water Body
- Wetland
- River Valley
- Dunes and River Shore
- Forest
- Agricultural Land
- Agricultural Land (irrigated by moving watering systems)

- Vacant Land
- Garden Land
- Settlement

- Industrial area / Harbor

- Town or Village

- Settlement within distance of 300m to planned Transmission Line (Number referred to in Text)

Existing Transmission Lines

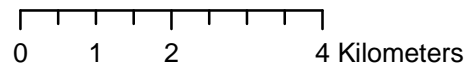
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- Transmission Line
- Transmission Line and Road

- Bundling with other Infrastructure

- Transmission Line and Road

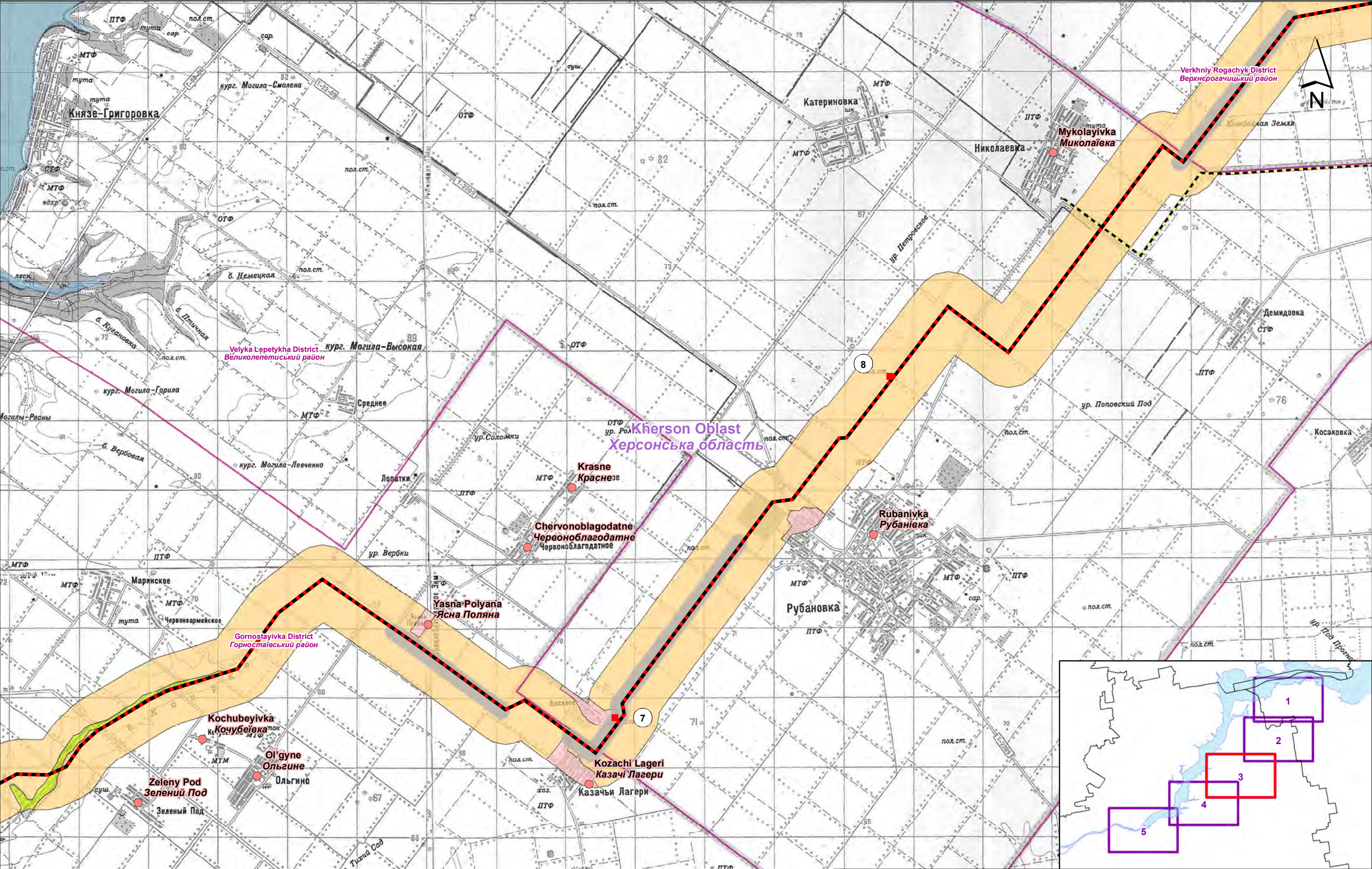
Administrative Boundary

- Oblast Boundary
- District Boundary



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750 kV Zaporizka – Kakhovska Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Landuse and Bundling		Scale: 1:100.000
Client: 		Annex: 5-42
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Landuse

- Water Body
- Wetland
- River Valley
- Dunes and River Shore
- Forest
- Agricultural Land
- Agricultural Land (irrigated by moving watering systems)

- Vacant Land
- Garden Land
- Settlement
- Industrial area / Harbor

- Town or Village
- Settlement within distance of 300m to planned Transmission Line (Number referred to in Text)

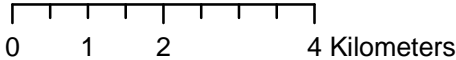
Existing Transmission Lines

Bundling with other Infrastructure

- Road or Path
- Transmission Line
- Transmission Line and Road

Administrative Boundary

- Oblast Boundary
- District Boundary



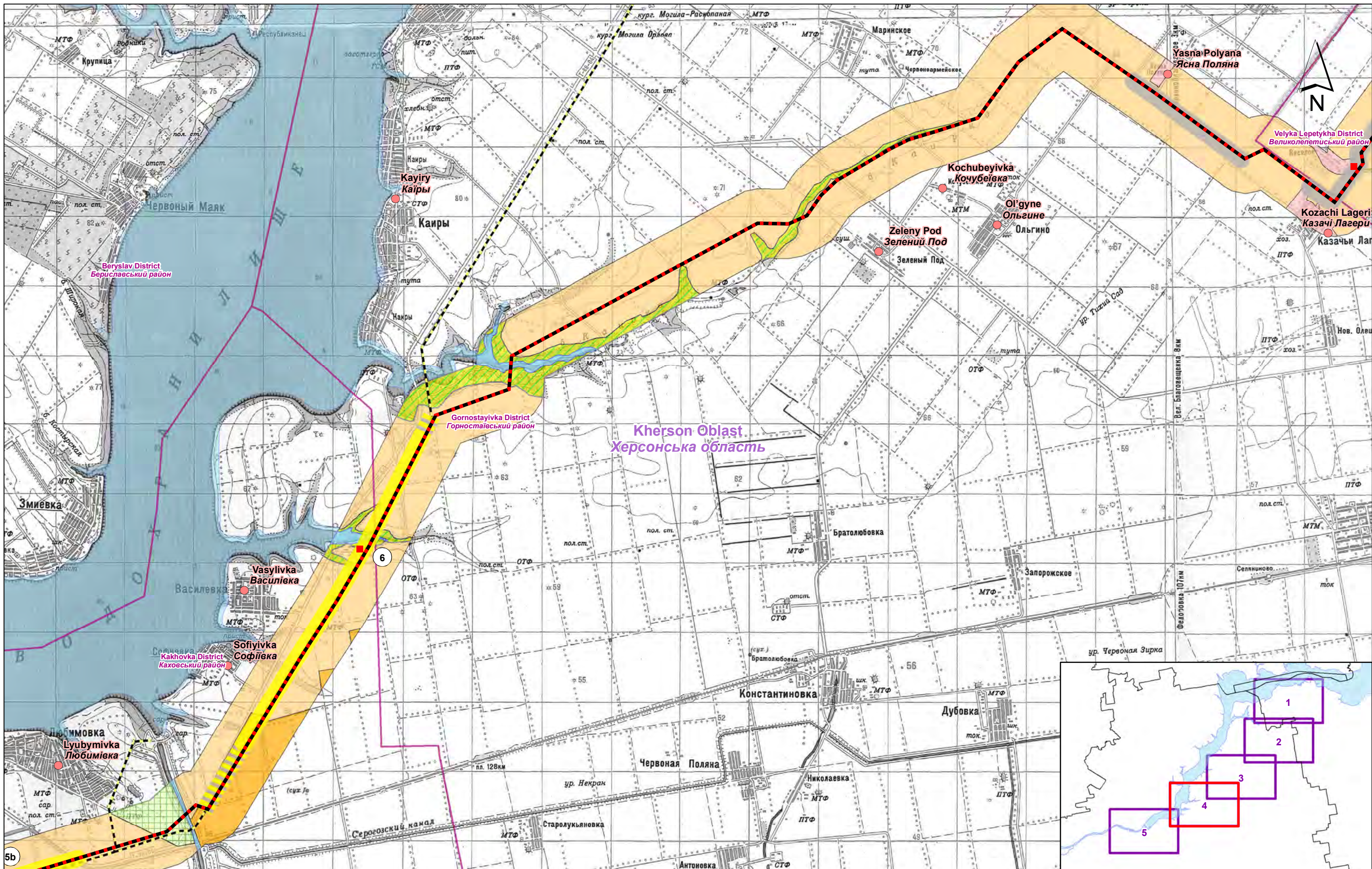
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750 kV Zaporizhka – Kakhovka Transmission Line Project
(Zaporizhzhia Oblast, Kherson Oblast)

Landuse and Bundling



Project-No.:	P 98267
Scale:	1:100.000
Annex:	5-4.3
Size:	A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Landuse

- Water Body
- Wetland
- River Valley
- Dunes and River Shore
- Forest
- Agricultural Land
- Agricultural Land (irrigated by moving watering systems)

- Vacant Land
- Garden Land
- Settlement
- Industrial area /Harbor
- Town or Village
- Settlement within distance of 300m to planned Transmission Line (Number referred to in Text)

Existing Transmission Lines

- Road or Path
- Transmission Line
- Transmission Line and Road

Administrative Boundary

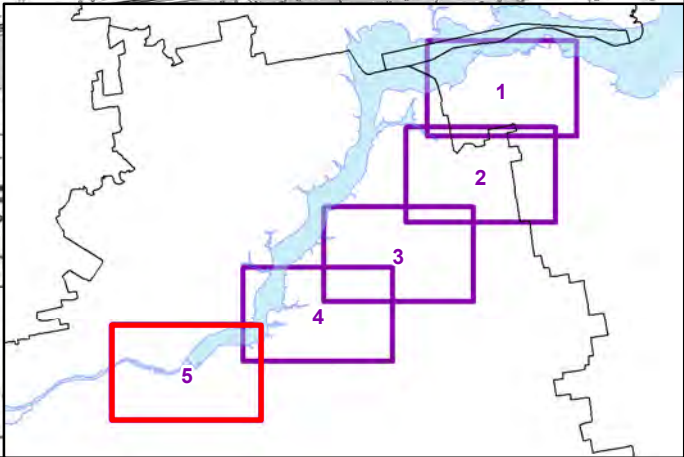
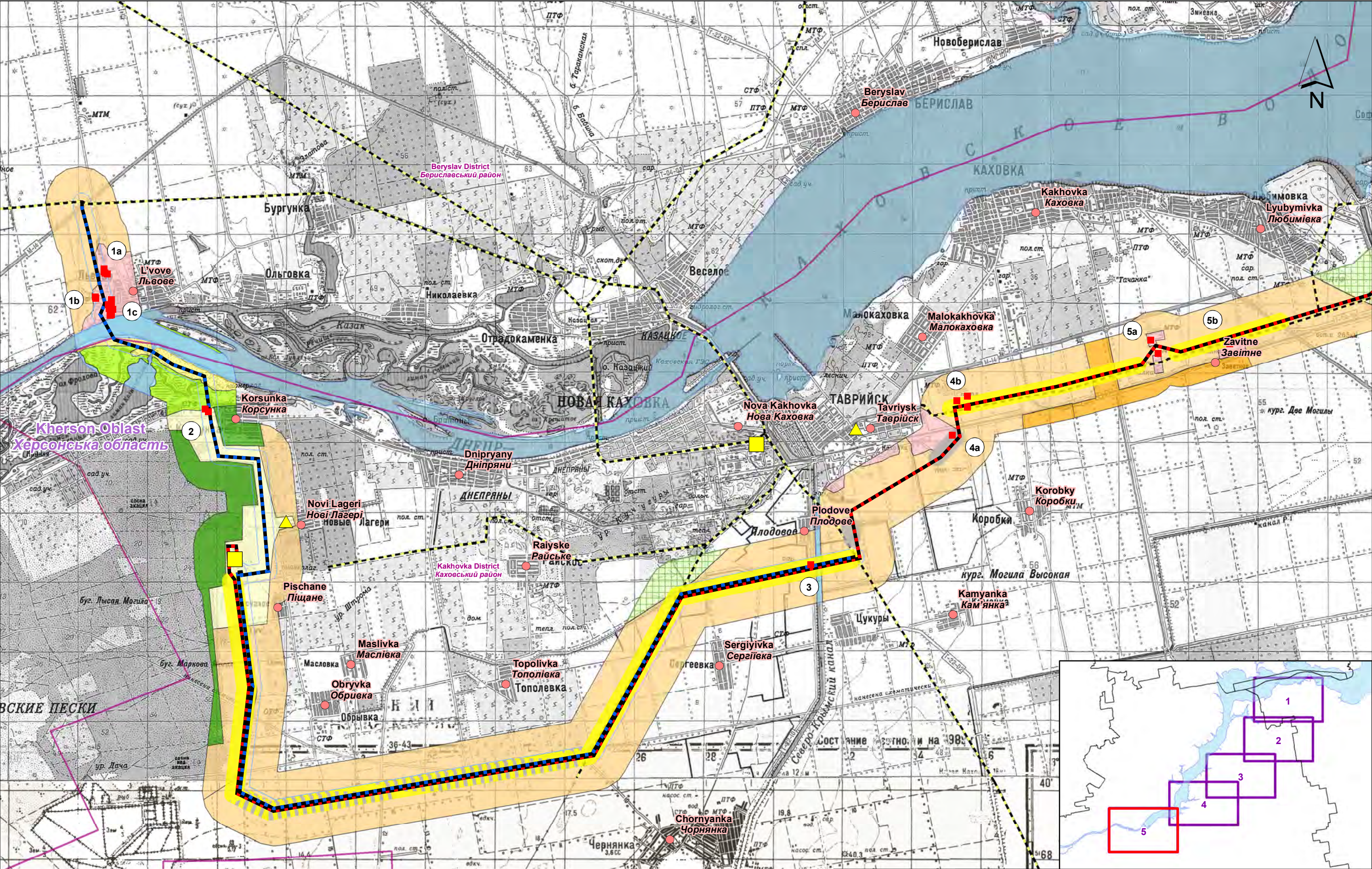
- Oblast Boundary
- District Boundary

0 1 2 4 Kilometers



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750 kV Zaporizhka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)		Project-No.: P 98267
Landuse and Bundling		Scale: 1:100.000
Client: Державне підприємство Національна енергетична компанія УКРЕНЕРГО		Annex: 5-4.4
		Size: A3



Planned Transmission Lines

- 330 kV Diversion
- 750 kV Transmission Line

Facilities

- Substation
- Housing

Landuse

- Water Body
- Wetland
- River Valley
- Dunes and River Shore
- Forest
- Agricultural Land
- Agricultural Land (irrigated by moving watering systems)

- Vacant Land
- Garden Land
- Settlement
- Industrial area / Harbor

- Town or Village
- Settlement within distance of 300m to planned Transmission Line (Number referred to in Text)

Existing Transmission Lines

Bundling with other Infrastructure

- Road or Path
- Transmission Line
- Transmission Line and Road

Administrative Boundary

- Oblast Boundary
- District Boundary

0 1 2 4 Kilometers



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750 kV Zaporizhka – Kakhovka Transmission Line Project (Zaporizhzhia Oblast, Kherson Oblast)

Landuse and Bundling

Client:



Project-No.: P 98267

Scale: 1:100.000

Annex: 5-4.5

Size: A3

Annex 6-1 Reviewed documents for the ESIA 750 kV Zaporizka – Kakhovska TL

Name	Date	Author	Remarks
Environmental and social policy EBRD	May 2008	EBRD	2008 policy EBRD
Development program 2015	March 2004	Government Department Kiev	-
State Sanitary Norms and Regulations for the Protection of the Population against the Impact of Electromagnetic Emissions	August 1996	Ministry of Health of Ukraine	-
Ukrenergo Answers on requests	-	Ukrenergo NEC	Part 1
Ukrenergo Answers on requests	-	Ukrenergo NEC	Part 2
Terms of Reference for the project: "Zaporizka NPP – Kakhovska 750 kV OL with Kakhovska 750 kV SS and 330 kV OL facilities"	August 2008	Ukrenergo NEC	-
Questions of the "Mercados EMI" consultant regarding the Project "Construction of 750 kV aerial line ZaAES - Kakhovsk"	-	Mercados EMI	-
Single Line diagram	-	-	Drawings
ToR for designing	2008	Ukrenergo NEC	750 kV deployment
Allotment of land	July 2006	Ukrenergo NEC	750 kV deployment; approved by the Executive Order of the Cabinet of Ministers of Ukraine.
Approximate project costs	-	-	750 kV actions
Feasibility Study for Construction of 750 KV Transmission Line ZNPP – Kakhovska with 750/330 KV Kakhovska Substation and 330 KV Overhead Line	2008	Government Department Charkiv	Technical and economic assessment

Name	Date	Author	Remarks
Einfluss von Hochspannungsfreileitungen auf Brutvögel des Grünlandes. – Vogel & Umwelt 9, Sonderheft, S. 111-127.	1997	Altemüller, M. & M. Reich	
Auswirkungen von Hochspannungstrassen auf die Flächennutzung überwinternder Bläss- und Saatgänse <i>Anser albifrons</i> , <i>A. fabalis</i> . – Journal für Ornithologie 138: 215-228.	1997	Ballasus, H. & Sossinka, R.	
Das Kompendium der Vögel Mitteleuropas. – 2. vollst. überarbeitete Aufl., Wiebelsheim.	2005	Bauer, H.-G., E. Bezzel & W. Fiedler	
Vogelschutz an Hochspannungsfreileitungen. – Naturschutz und Landschaftsplanung 32: 373-379.	2000	Bernshausen, F., J. Kreuziger, K. Richarz, H. Sawitzky & D. Uther	
Hochspannungsfreileitungen und Vogelschutz: Minderung des Kollisionsrisikos. – Naturschutz und Landschaftsplanung 39 (1): 512-379.	2007	Bernshausen, F., J. Kreuziger, D. Uther & M. Wahl	
Vogelverhalten an Hochspannungsfreileitungen – Auswirkungen von elektrischen Freileitungen auf Vögel in durchschnittlich strukturierten Kulturlandschaften. – Vogel & Umwelt 9, Sonderheft, S. 59-92.	1997	Bernshausen, F., M. Strein & H. Sawitzky	
Trade-offs in nest site selection in coastal populations of Lapwings <i>Vanellus vanellus</i> . – Ibis 137: 550-558.	1995	Blomquist, D. & O.C. Johansson	
Das Verhalten von Vögeln im Bereich eines ausgewählten Trassenabschnittes der 110 kV-Leitung Bernburg-Susigke (Bundesland Sachsen-Anhalt). Flugreaktionen, Drahtanflüge, Brutvorkommen. – Ökologie der Vögel 25: 69-115.	2003	Brauneis, W., W. Watzlaw & L. Horn	
Birds in Europe. Population estimates, trends and conservation status. – BirdLife Conservation Series No. 12, BirdLife International, Cambridge.	2004	Burfield, I. & F. van Bommel	

Name	Date	Author	Remarks
Habitat selection in birds. – Orlando.	1985	Cody, M. L.	
Umsetzung der Markierungsarbeiten an einer 110 kV-Freileitung im Queichtal (Rheinland-Pfalz). – Ökologie der Vögel 26: 295-299.	2004	Fangrath, M.	
Störungsinduzierte Nachtaktivität von Schnatterenten (<i>Anas strepera</i> L.) im Ermatinger Becken/Bodensee. – Ornithologische Jahreshefte für Baden-Württemberg 13 (2): 191-205.	1997	Gädtgens, A. & P. Frenzel	
Handbuch der Vögel Mitteleuropas. Bd. 1 - 14. – Frankfurt, Wiesbaden.	1966/1997	Glutz von Blotzheim, U. et al.	
Vogelschutz an Freileitungen. – Gutachten im Auftrag des Naturschutzbundes Deutschland (NABU).	2003	Haas, D., M. Nipkow, G. Fiedler, R. Schneider, W. Haas & B. Schürenberg	
The EBCC Atlas of European breeding Birds. – London.	1997	Hagemeijer, W. & M. Blair	
Important bird Areas in Europe. Priority sites for conservation 2 Southern Europe. – BirdLife International, Cambridge	2000	Heath, M.F., M.I. Evans, I. D.G. Hoccom, A.J. Payne & N.B. Peet	
Vogeltod durch Drahtanflug bei Hochspannungsfreileitungen. – Ökologie der Vögel 2, Sonderheft.	1980	Heijnis, R.	
Verluste und Verhalten von Vögeln an einer 380-kV-Freileitung. – Ökologie der Vögel 10: 85-103.	1988	Hoerschelmann, H. A. Haack & F. Wolgemuth	
Handbuch der Vögel der Sowjetunion, Bd. 4 Galliformes. Gruiformes. – Wiesbaden.	1989	Ilicev, V.D. & V.E. Flint	
Markierung von Hochspannungsfreileitungen in den Niederlanden. – Vogel und Umwelt 9, Sonderheft, S. 276-278.	1997	Koops, F.	

Name	Date	Author	Remarks
Das Verhalten von überwinternden, arktischen Wildgänsen im Bereich von Hochspannungsfreileitungen am Niederrhein (Nordrhein-Westfalen). – Vogel und Umwelt 9, Sonderheft, S. 129-145.	1997	Kreutzer, K.-H.	
Fachinformationssystem und Fachkonventionen zur Bestimmung der Erheblichkeit im Rahmen der FFH-VU. Endbericht zum Teil Fachkonventionen. Schlusstand Juni 2007. – FuE-Vorhaben im Rahmen des Umweltforschungsplanes des Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit im Auftrag des Bundesamt für Naturschutz, Endbericht, 160 S., Hannover, Filderstadt.	2007	Lambrecht, H. & J. Trautner	
Ermittlungen von erheblichen Beeinträchtigungen im Rahmen der FFH-Verträglichkeitsuntersuchung. – Vorläufiger Endbericht zum FuE-Vorhaben im Rahmen des Umweltforschungsplanes des Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit im Auftrag des Bundesamts für Naturschutz, Hannover, Filderstadt.	2004	Lambrecht, H., J. Trautner, G. Kaule & E. Gassner	
Population Ecology of Raptors. – Berkhamsted.	1979	Newton, I.	
Geplante 380 kV- Höchstspannungsfreileitung Punkt Lemförde – Wehrendorf, Bl. 4196. FFH-Verträglichkeitsuntersuchung für das FFH-Gebiet und das EU-Vogelschutzgebiet „Dümmer“ (Kennnummer DE 4315-301). – Gutachten im Auftrag der RWE Transportnetz Strom, Hungen.	2005	PNL [Planungsgruppe für Natur und Landschaft]	
Geplanter Ersatzneubau der 110 kV-Hochspannungsfreileitung Wessel/Niederrhein – Hüthum, Bl. 4201, Bl. 1318 (ehemalige Bl. 0047). Natura 2000-Verträglichkeitsuntersuchungen unter besonderer Berücksichtigung des EU-Vogelschutzgebiets „Unterer Niederrhein“ (Kennnummer DE	2007	PNL [Planungsgruppe für Natur und Landschaft]	

Name	Date	Author	Remarks
4203-401). – Gutachten im Auftrag der RWE Transportnetz Strom, Hungen.			
Geplanter Neubau der 380 kV-Hochspannungsfreileitung Anschluss Kraftwerk Westfalen – USW Uentrop. Natura 2000-Verträglichkeitsuntersuchungen unter besonderer Berücksichtigung des EU-Vogelschutzgebiets „Lippeaue von Hamm und Lippstadt mit Ahsewiesen“ (Kenn-Nummer DE 4314-401). – Gutachten im Auftrag der RWE Transportnetz Strom, Hungen.	2007a	PNL [Planungsgruppe für Natur und Landschaft]	
Geplanter Neubau der 110 kV-Leitung Abzweig Altenstadt. Natura 2000-Verträglichkeitsuntersuchungen unter besonderer Berücksichtigung des EU-Vogelschutzgebiets „Wetterau“ (Kenn-Nummer DE 5519-401). – Gutachten im Auftrag der E.ON Netz GmbH, Hungen.	2007b	PNL [Planungsgruppe für Natur und Landschaft]	
Überprüfung der Wirksamkeit von neu entwickelten Vogelabweisern an Hochspannungsfreileitungen anhand von Flugverhaltensbeobachtungen rastender und überwinternder Vögel am Alfsee/Niedersachsen. – Hungen.	in Vorb.	PNL [Planungsgruppe für Natur und Landschaft]	
Vögel und Freileitungen. – Vogel & Umwelt 9, Sonderheft, 304 S.	1997	Richarz, K. & M. Hormann (Hrsg.)	
Raum-Zeit-Verhalten des Schreiadlers (<i>Aquila pomarina</i>). – Acta orn. 4(2-4): 75-236.	2001	Scheller, W., Bergmanis, U, Meyburg, B.-U., Furkert, B., Knack, A. & Röpfer, S.	
Auswirkungen eines Jagdschongebietes auf die Wasservögel im Ermtinger Becken (Bodensee). – Ornithologische Jahreshefte für Baden-Württemberg 2(1): 1-46.	1986	Schneider, M.	

Name	Date	Author	Remarks
Untersuchungen über den Einfluss von Störungen auf den Wasservogelbestand im Gnadensee (Untersee/Bodensee). – Ornithologische Jahreshefte für Baden-Württemberg 9 (1): 1-24.	1993	Schneider-Jacoby, M., H.-G. Bauer & W. Schulze	
Truppgroße bei weidenden Bläss- und Saatgänsen (<i>Anser albifrons</i> , <i>A. fabalis</i>) an der Unteren Mittelelbe und ihr Einfluss auf Fluchtdistanz und Zeitbudget. – Journal für Ornithologie 140 (3): 325-334.	1999	Spilling, E., H.-H. Bergmann & M. Meier	
Das Anflugverhalten von überwinternden, arktischen Wildgänsen im Bereich von markierten und nicht-markierten Hochspannungsfreileitungen am Niederrhein. – Unveröffentlichtes Gutachten Naturschutzzentrum in Kreis Kleve e.V., Juni 2000.	2000	Sudmann, S.	
Directory of Azov-Black Sea Coastal Wetlands. – Kiev.	2003	Wetlands International	
Das große Experiment zur Gänsejagd: Auswirkungen der Bejagung auf Raumnutzung, Distanzverhalten und Verhaltensbudget überwinternder Bläss- und Saatgänse am Niederrhein. – Vogelwelt 123 (6): 293-306.	2002	Wille, V. & Bergmann, H.-H.	

Annex 6-2: List of objects and object clusters identified within 300 m zone

No.	Name of Town/village	Line [kV]	Distance within 300m buffer of 330 kV Line [m]	Distance within 300m buffer of 750 kV Line [m]	Source	Note/Description. Please described type of object and use, in particular whether used for residential/housing purpose
3	Plodojoe	330 kV /750 kV	57	131	Google Earth	Pump station (not used as residential)
4a	Tawryisk	750 kV	NA	183	Google Earth	Storage – commercial property
4b	Tawryisk	750 kV	NA	192	Google Earth	Temporarily building for field guards (premise control)
4b	Tawryisk	750 kV	NA	250	Google Earth	Temporarily building for field guards (premise control)
4b	Tawryisk	750 kV	NA	64	Google Earth	Temporarily building for field guards (premise control)
5a	East of Malokakho vka	750 kV	NA	226	Google Earth	Milk farm (various buildings) - commercial use
5a	East of Malokakho vka	750 kV	NA	182	Google Earth	Milk farm (various buildings) - commercial use
5b	Zawetnoje	750 kV	NA	178	Google Earth	Warehouses – commercial property
6	West of Vasylevka	750 kV	NA	184	Google Earth	Building owned by fishing breeding company
7	Weseloje	750 kV	NA	160	Google Earth	Warehouse
8	North of Rubanovka	750 kV	NA	101	Google Earth	Commercial buildings for workers of mechanical brigade
9	Werch. Rogatshin	750 kV	NA	281	Google Earth	Abandoned farm building – commercial property
9	Werch. Rogatshin	750 kV	NA	289	Google Earth	Abandoned farm building – commercial property
9	Werch. Rogatshin	750 kV	NA	296	Google Earth	Abandoned farm building – commercial property
9	Werch. Rogatshin	750 kV	NA	300	Google Earth	Abandoned farm building – commercial property

No.	Name of Town/village	Line [kV]	Distance within 300m buffer of 330 kV Line [m]	Distance within 300m buffer of 750 kV Line [m]	Source	Note/Description. Please described type of object and use, in particular whether used for residential/housing purpose
10	Mitshurina	750 kV	NA	241	Google Earth	Summer cottages (private property)
10	Mitshurina	750 kV	NA	242	Google Earth	Summer cottages (private property)
10	Mitshurina	750 kV	NA	246	Google Earth	Summer cottages (private property)
10	Mitshurina	750 kV	NA	250	Google Earth	Summer cottages (private property)
10	Mitshurina	750 kV	NA	252	Google Earth	Summer cottages (private property)

Annex 9-1 - Overview of newspaper and radio announcements

750 KV ZAPORIZKA NPP - KAKHOVSKA				
	Newspaper Title / Назва газети	Publication date / Дата випуску	City/RegionMic то/ Район	Scoping Meetings addressed in Announcement
1.	Zaporizka pravda	April 14, 2009	Zaporizhya	Zaporizhya, Nova Kakhovka
2.	Naddniprians'ka Pravda	April 15, 2009	Kherson	Zaporizhya, Nova Kakhovka
3.	Novyny dnia	April 16, 2009	Kamens'ko-Dnistrovs'kyi	Zaporizhya, Nova Kakhovka
4.	Uryadovyi Kur'yer	April 17, 2009	Kyiv	Zaporizhya, Nova Kakhovka, Odesa, Artsiz, Kiev
5.	Kahovs'ka Zoria	April 17, 2009	Kakhovka	Zaporizhya, Nova Kakhovka
6.	Mayak	April 17, 2009	Beryslav	Zaporizhya, Nova Kakhovka
7.	Silsky Novunu	April 17, 2009	Gornostayivka	Zaporizhya, Nova Kakhovka
8.	Ridniy Kray	April 17, 2009	Verkhniy Rogachyk	Zaporizhya, Nova Kakhovka
9.	Tavriisky Visty	April 24, 2009	Velyka Lepetykha	Zaporizhya, Nova Kakhovka
10.	Visnik Oleshshia	April 17, 2009	Tsyuryupynsk	Zaporizhya, Nova Kakhovka
11.	Nova Kakhovka	April 15, 2009	Nova Kakhovka	Zaporizhya, Nova Kakhovka
	Radio station	Date	Region	
12.	State Zaporozhya regional radio broadcasting company	April 18 and 19, 2009	Zaporizhya	Zaporizhya, Nova Kakhovka
	Internet	Date	Region	
13.	http://www.ukrenergo.energy.gov.ua	April 15, 2009	Kyiv	Zaporizhya, Nova Kakhovka, Kyiv
14.	http://mpe.kmu.gov.ua	April 17, 2009	Kyiv	Zaporizhya, Nova Kakhovka, Kyiv
15.	http://economics.unian.net	April 28, 2009	Ukraine	

Annex 9-2: Consultation Matrix

Issue/Comment made by Stakeholders	Meeting Location(s)	Comments
What are terms of the financing by EBRD to Ukrenergo? Does this have negative consequences for Ukraine?	Zaporizhzhia , Kiev	This topic is not within the Scope of the ESIA. Ukrenergo is seeking a loan from the EBRD to help finance this project. Information about the loan will be published in the EBRD's Project Summary Document (PSD) at least 90 days before loan approval in accordance with the bank's Public Information Policy.
Why is public not informed about plans to build new nuclear units at ZNPP #7 and #8? Otherwise the Transmission Line is not useful. This 750 kV line is being implemented only to secure construction of units #7 and #8 at ZNPP, which would in turn cause harm to people living near the ZNPP.	Zaporizhzhia , Kiev	The TL is necessary as part of the normal operations of ZNPP units 1-6, irrespective of any reported future plans to build new units at ZNPP. Ukrenergo is only responsible for energy distribution; Energoatom is dealing with construction of new nuclear units. In any case, the 750 kV TL is part of the original design of the ZNPP to ensure the stable and normal operations of the existing plant. .
Who will do the EIA? What about public input	Zaporizhzhia	<p>The current ESIA is being undertaken by an independent international consultant (ERM/Mercados) to meet international best practice and the requirements of possible lending institutions. The funding for the work has been provided by the Spanish Government.</p> <p>In addition, to the ESIA and in line with Ukrainian legislation, an OVNS is being done by the LLC Southern Energy Company. The recommendations made during the EISA process will be incorporated as appropriate during the OVNS completion..The public will have an opportunity to make comments on the ESIA during a public consultation process. Additional public meetings will be undertaken (probably in September) to present the findings of the ESIA. Prior to these meetings the ESIA will be fully disclosed in line with the Stakeholder Engagement Plan (SEP) and appropriate public announcements will be made to ensure maximum attendance of the public.</p>

Issue/Comment made by Stakeholders	Meeting Location(s)	Comments
Will there be a separate EIA for running ZNPP at full capacity - 6000 MW vs 5300 MW now?	Zaporizhzhya	<p>The ESIA is only of the transmission line, The ZNPP plant is operated by Energoatom, who are responsible for all permits.</p> <p>We understand that the current permits as well as previous OVNS, design approvals, and operating permits for ZNPP consider the full 6000 MW capacity.</p>
Are there possible effects to population from power line exposure?	Zaporizhzhya , Nova Kakhovka	<p>The main potential impacts are due to electromagnetic Radiation (EMR) and noise. The ESIA will fully assess the planned routes and the distance to residential areas. In Ukraine specific standards exist (State Sanitary Regulations and Norms, Order of Ministry of Health of Ukraine, No.239, August 1998) to address EMR issues; these are more stringent than EU standards.</p> <p>In accordance to the standards, both sanitary protection zones (SPZs) and safety zones need to be established along the route of the TL. The ESIA process will fully review the route of the TL and identify any areas that need mitigation. This will be clearly presented in the ESIA.</p>
How will damage to land plots be compensated, Compensation for crop loss?	Zaporizhzhya , Nova Kakhovka	Compensation will be paid in accordance with the Land Code regulations. The ESIA will include an outline of the framework of how compensation will be done and summary of the proposed procedures to be followed to address any compensation..
Consider that Zap Oblast is already heavily built up with the ZNPP and all the factories.	Zaporizhzhya	The planning of the 750 kV route through a portion of Zaporizhzhya Oblast was designed to avoid populated areas. This will be shown and further explained in the ESIA.
What will be tender process for contracting? Who will be the contractor for design and construction?	Zaporizhzhya , Nova Kakhovka	This is not within the Scope of the ESIA; at the Scoping Meeting, Ukrenerg explained that there will be a public tender for detailed design and construction in accordance with international procedures. It should be noted that financing of projects by International Financial Institutions is associated with strict and transparent procurement rules.

Issue/Comment made by Stakeholders	Meeting Location(s)	Comments
Will new jobs be created?	Nova Kakhovka	There will be some jobs created during the construction phase, and a smaller number of longer-term jobs (about 15-20), e.g. at the new Kakhovska Substation.
What about compensation for land titles - some from 1980's before privatisation?	Nova Kakhovka	Ukrenergo has already obtained the State Acts for permanent land use for most of the line. The ESIA will outline a framework and procedure of how to address any claims that are made to ensure that these are addressed in a transparent and open manner. If there are any present claims, they will be agreed in an appropriate manner as per the Land Code. The land use and compensation for land use and crops failures will be addressed in the ESIA.
Will towers affect local irrigation systems (eg the moving fregate devices)?	Nova Kakhovka	The field reviews to date indicate that the tower locations will not interfere with such existing irrigation systems; further review of this topic will be needed during the detailed planning stage. The issue will be addressed in the ESIA
From town planning perspective, the existing towers divide town in two parts - this should be fixed	Nova Kakhovka	It was not within the scope of this Project for Ukrenergo to repair any planning issues from the past for other lines. However, the routing-planning for this Project for the new TL has taken such aspects into consideration.
We wish that the new housing settlement for the Kakhovka Substation will bring additional infrastructure to the town, e.g. roads, wastewater and street lighting	Nova Kakhovka	This is only a small settlement with 15 houses and separate septic systems planned; not likely to directly result in significant new infrastructure. Nevertheless this new settlement represents about 20% expansion of the local village and thus related growth of the economic base.
Why wasn't information on public hearings published in mass media? Why weren't representatives of the State	Kiev	Information announcing the scoping meetings was published in mass media and official invitations to representatives of the oblast state administration were sent. Further information is contained in a

Issue/Comment made by Stakeholders	Meeting Location(s)	Comments
<p>Environmental Protection Directorate in Zaporizhya oblast invited?</p> <p>Why can we not get information on the names of people present at the previous scoping meetings?</p>		<p>separate Annex of this document.</p> <p>All the minutes from the meetings are available on the Ukrenergo's website accessible to everyone (attached as separate Annex to this document)</p> <p>For reasons of personal privacy and in line with EBRD policy, the names of private individuals will not be made public, however, names of public officials are included</p>
<p>A Zaporizhya website published information that seven organizations present at the previous public meetings endorsed the said project while three did not. Why didn't the Dniprovsk ES place information about the project on the website of the public organizations of Zaporizhya oblast?</p>	Kiev	<p>All the minutes from the public meetings are available on the Ukrenergo's website accessible to everyone.</p> <p>The Stakeholder Engagement Plan (formerly called PCDP) includes a summary where information can be found.</p>
<p>Why is it necessary to build this power transmission line while three constructed 750 kV lines currently exist, and six nuclear units are working at ZNPP; is that not enough?</p>	Kiev	<p>The line will be built to secure power supply reliability in the southern region as well as to ensure ZNPP power output. The Project is part of the original design of the ZNPP. Information on the need for the power line will be included in the ESIA</p>
<p>Is the 750 kV TL still needed, because the ZNPP nuclear units will be decommissioned one by one by 2015, so when the TL has been built the units will be out of operation already?</p>	Kiev	<p>The ZNPP, nuclear reactors are of the VVER type and commissioned between 1988-1995. These are modern by international standards and plants of this nature have a life of 30-40 years. According to the Ukrainian Energy Strategy of 2030, the existing units 1-6 at ZNPP are scheduled for rehabilitation during the coming years to further extend their operational lives to 2020 and beyond. Thus the TL is needed for the continued safe operation of Units 1-6 as per the design.</p>

Issue/Comment made by Stakeholders	Meeting Location(s)	Comments
As to development of Crimea, there are two large-scale renewable energy projects approved by the Ukrainian Cabinet of Ministers, with Japanese and European financing.	Kiev	<p>Ukenergo supports the development of renewable energy such as these projects. Nevertheless, these projects are not part of the scope of the current project and therefore the ESIA will not address these.</p> <p>It should be emphasized that the construction of the TL would help to provide the stable grid conditions and sufficient base-load capacity to enable the development of windpower and other renewables projects; the grid must still provide adequate capacity for the times when the renewable sources are not able to generate.</p>
Materials provided do not contain full information on this project.	Kiev	The scoping document provided to date is a summary of the project and the planned scope of the study.. The full ESIA Report will be available later for a 120-day period and will include a detailed assessment of environmental and social impacts in line with international and European best practice.
The Bank finances projects that do not meet all of the safety rules.	Kiev	The ESIA report will outline the project details and present the potential impacts of the Project, including assessment of safety rules in line with the Performance Requirements as set out in the EBRD Social and Environmental Policy 2008.
Are land plots under the OL towers legalized? What is the term of their endorsement	Kiev	<p>Ukrenergo holds the State Acts for the right of permanent use of the tower land plots. All land owners were issued state titles of ownership (without the plot on which a tower is installed). This information will be provided in the ESIA</p> <p>The negotiations are presently ongoing re some of the land plots for the 330 kV diversions. The process of obtaining legal title to the relevant plots will be outlined in the ESIA</p>