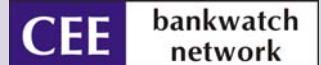


EU public funds for “securing” dirty coal and nuclear energy – Ukraine transmission lines

Briefing paper, March 2011



CEE Bankwatch Network's mission is to prevent environmentally and socially harmful impacts of international development finance, and to promote alternative solutions and public participation.

Introduction

As a large country strategically placed on the eastern border of the European Union, the development of Ukraine and its energy sector is undoubtedly influenced by the EU's energy strategy. In 2010 Ukraine joined the European Energy Community with the goal of integrating in the common European electricity and gas markets. The ground work for this integration has been started in the last six years with the help of the EIB and the EBRD, whose investments in the energy sector of Ukraine, with a total loan value approaching EUR 1 billion¹, have been mainly focused on high-voltage transmission line construction.

The recent EU strategic documents and declarations in the field of energy call for more coherent and integrated EU external energy policy. In the EC communication from November 2010 “Energy 2020: A strategy for competitive, sustainable and secure energy” strengthening the external dimension of the EU energy market was listed among five key priorities².

In November last year Jerzy Buzek, the president of the European Parliament, openly called for joint purchase of nuclear electricity from Ukraine and Russia³. Following the support of EU institutions for electricity transmission infrastructure in Ukraine helps to understand how infrastructural foundations for this plan are to be laid with the use of European public money.

The role of EU public finance in transmission infrastructure development in Ukraine

Since 2005 the EIB and EBRD have invested in a number of high voltage (HV) transmission line (TL) projects undertaken by Ukraine's state owned company Ukrrenergo.

¹ See the fact-sheet on European IFI lending to energy sector of Ukraine in 2005–2010 in Annex 1

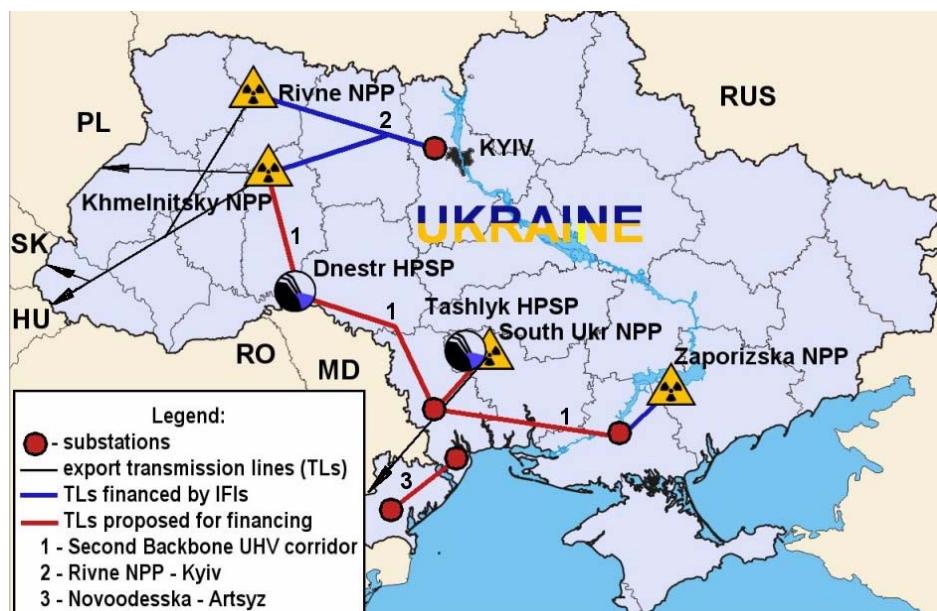
² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0639:FIN:EN:PDF>

³ http://www.eib.org/attachments/general/events/warsaw_26112010_buzek_en.pdf

From the start the EBRD has claimed that the TL projects aim to increase the overall stability of the grid system, as well as the quality, efficiency and reliability of the electricity supply in the Odessa and Kyiv regions. The EIB, however, has never been secretive about the objective of the separate TL projects as being “*important component[s] of the future connection to the Trans-European Energy Networks (TEN-E).*”

In October 2010, the EBRD published a procurement notice for the development of documentation for another TL – the **Second Backbone UHV Corridor**, which is to connect Kakhovska substation – Primorska substation- Dnistrovska pumped storage plant (PSP) – Khmelnitska NPP. Later on 4th November 2010, the EBRD announced a procurement notice for preparation of an ESIA and a Feasibility Study for the 330 kV Novoodesskaya – Arstyz TL, which was stopped in 2010 due to constructor's plans to cross a Ramsar site and the problematic implementation of the Adjalyk-Usatovo project (see Map 1).

Map 1. Ukrainian transmission lines funded or planned to be funded by EU public finance



Investments into Ukraine TLs: paving the way for ‘dirty’ nuclear and coal electricity to the EU

The proposed Second Backbone UHV Corridor is expected to connect with electricity transmission lines 3 (out of a total of 4) Ukrainian nuclear power plants (NPPs) and two PSPs. In other words it means the connection of about 12 GW of generation backed by 3 GW of pumped storage. Such a design will let the Ukrainian TL operator Ukrenergo despatch electricity generated by NPPs across the country and by increasing the availability of base and peak generation mix, offer up to 4 GW of

electricity to neighboring grids. This may sound positive, but it encourages the life extension of outdated NPPs. This may be further increased if the government of Ukraine moves forward its plan to construct 22 new nuclear reactors by 2030 together with extending the lifetime of existing outdated reactors. Although such an extensive plan looks unrealistic, still some units could be put into operation – steps to start construction of Khmelnitsky units 3 and 4 are being already taken.

A number of arguments can be used to argue that these lines in their current design are mainly for the purpose of increasing electricity exports to the EU. The Energy Strategy of Ukraine for the period until 2030 foresees two transmission corridors (Second Backbone and Rivne–Kyiv–Donbass) to be built to "create conditions for the integration of Ukrainian grid into the European network (UCTE) and significantly increase the electricity export"⁴. According to the same strategy (base scenario), the export of electricity will increase 3 times (from 8.3 TWh to 25 TWh in 2030). From the technical side, some lines are designed with excessive capacities that cannot be justified otherwise if not for export. For example, the official rationale for Novoodeska–Artsyz is to provide the remote part of the Odessa region with a secure electricity supply, yet Ukrrenergo plans to install electricity towers for two circuits of 330 kV that will enable transmission of power that exceeds the demand in the area several times over.

Despite being known worldwide as the scene of the worst ever nuclear accident, Ukraine is ruled by politicians with too ambitious plans for nuclear industry development and too little attention for its safety and environmental impact.

Ukraine has not yet created a unified national system for dealing with radioactive waste and spent nuclear fuel, as required by nuclear legislation (Law of Ukraine "On Radioactive Waste Management"). Nor is Ukraine currently investing in building its own infrastructure for the long term safe isolation of spent fuel and radioactive waste.

Of great concern are also the problems of water use of NPPs in areas with scarce water supply for drinking and agricultural purposes, as well as the choice of geologically unstable foundations. For example the Rivne NPP (from 1980–1984) caused intensification of the dissolution of Cretaceous–marl layers and the formation of weak zones in upper layers, resulting in numerous visible gravity-caused landslides of various sizes.

The Zaporizska nuclear power plant is located on the left bank of the Kakhovsky water reservoir. Consumptive water use by plant is 144 million m³, and cumulatively with neighbouring Zaporizska TPP it reaches 320 million m³ per year. To make things worse in 2005 Zaporizska NPP ignored the requirements of the Water Code of Ukraine and permanently connected its cooling pond with Kakhovka reservoir thus discharging its contaminated water into the Dnieper River.

Finally, as a result of ageing of Ukrainian NPPs the occurrence of failures such as minor emissions and leaks, and the appearance of cracks and short circuits is increasing. Starting from 2010, almost every year one nuclear unit in Ukraine will be coming to the end of its designed life time (currently Ukraine operates 15 units at 4 NPPs). The decommissioning of nuclear power plants requires significant financial resources which the Government of Ukraine has failed to set aside. Thus the nuclear industry and the Ministry of Energy see a solution in the extension of operation of old power plants. An official decision on the extension of the first unit of the Rivne NPP was already made in December 2010.

The Energy Strategy of Ukraine for the period until 2030 plans to increase the percentage of coal in the energy balance from 22% (43.5 million tonnes of fuel equivalent) in 2005 to 33% (101 million of fuel equivalent) by 2030 according to the base scenario.

Increased combustion of coal as a fuel by power stations is expected to double Ukraine's greenhouse gas emissions by 2030 (to 350 million tonnes of CO₂ equivalent). In view of this, the percentage of emissions from coal mining and combustion (from a total amount of greenhouse gas emissions) may rise from 39% (162 million tonnes) as of 2005 to 53% (346 million tonnes) in 2030.

Old TPPs are the main obstacle to meeting EU Directive 2001/80/EC (as expected by 2018 according to Ukraine's commitments under the Energy Community agreement), as most of the Ukrainian TPPs have the lowest technical, economical and ecological indicators in Europe. The main equipment of TPPs was installed in 1960–1970 with technologies from the 1950s and needs urgent modernization or decommissioning. Currently 52 units on TPPs with 12.2 GWt of total installed capacity should be replaced, which is about 42.4 % of all thermal generating units in Ukraine.

Democratic rights and nature at stake with implementation of the TL projects

So far the implementation of the already approved projects has shown significant deficiencies with regard to: public information and consultation in the frame of the EIA procedures and IFIs procedures; routing through national parks, reserves and Ramsar sites; routing through villages without agreement from locals and/or proper compensation, which resulted in violent clashes between local people and police in the village of Usatove in November 2009.



Conclusions

Ukraine's energy sector has great potential but it needs both reforming and technical modernization. The EU, in its attempt to secure diversification of electricity to its member states, seems to be putting its efforts (both financial and political) in the wrong direction. Investments into maintaining a system that is based on Soviet-type nuclear reactors and TPPs from the mid-20th century will not bring any substantial benefit to Ukrainian people but rather create a financial burden (already about EUR 1 billion to be paid back) and continue creating environmental burdens for future generations. At the same time, the EU's reliance on dirty energy sources, even when moved to neighboring countries, does not make the EU safer. Neither the risk brought by greenhouse gases emitted in Ukraine nor the radiation from its nuclear power plants respect borders. On top of that importing subsidized electricity from Ukraine will undermine the EU's efforts to improve its energy efficiency and the development of domestic renewable energy sources.

Recommendations

EU institutions must stop spending public money for supporting the creation of infrastructure to transport dirty nuclear and coal electricity from neighboring countries to EU member states. The EU's support to Ukraine's energy sector should prioritise stimulation of the 'shift in thinking' toward real sustainable solutions such as new renewable energy source development and energy efficiency, both of which Ukraine has huge potential for. In the electricity transmission field priority should be given to low-voltage local grid (below 110kV) modernisation and development of technical solutions on the integration of modern renewable energy sources into the outdated design of the grid in the country.

For more information

Iryna Holovko
National Coordinator for Ukraine
CEE Bankwatch Network\National Ecological Center of Ukraine (NECU)
Tel: +380443537841
Email: iryna@bankwatch.org

Fidanka McGrath
International EBRD Coordinator
CEE Bankwatch Network
E-mail: fidankab@bankwatch.org

Annex 1.

Fact –sheet: European IFI lending to the electricity energy sector of Ukraine in 2005–2010

In 2005 Ukraine signed a framework Agreement with the EIB focusing on “*priority Trans-European Network (TEN) projects connecting Ukraine and the European Union.*”⁵ ⁶ In June 2010 Ukraine and the EIB signed a Host Country Agreement for the EIB representation in Ukraine.⁷ According to the draft of the new EBRD country strategy for Ukraine (under review as of March 2010), “*all new public infrastructure and energy projects are prepared together with the EIB on a 50–50 basis and are expected to benefit from grant co-financing and technical assistance from the EU Neighbourhood Investment Facility (NIF).*”⁸

EBRD	Name	IFI funding	Year of approval
	Odessa High Voltage Grid Upgrade⁹	25.8	2005
	Rivne Kyiv High Voltage Line Project¹⁰	150	2007
1	Ukraine Renewable Energy Direct Lending facility¹¹	50	2009
	South Ukraine Transmission Project¹²	175	2010
	EBRD total	400.8	
EIB			
	Rivne Kyiv High Voltage Line Project¹³	150	2008
2	750kV Zaporizhzhia–Kakhovska Line¹⁴	150	2009
3	Ukrhydroenergo Rehabilitation Project¹⁵	200	2010
	EIB total	500	
Total		900.8	

1 Plus EUR 20 million of co-financing from CTF+ EUR 5.8 million for TA from GEF

2 Co-financing for EBRD's South Ukraine Transmission Line Project

3 Expected co-financing from EBRD – EUR 200 million, decision still pending

5 <http://www.eib.org/about/press/2005/2005-042-eib-and-ukraine-sign-framework-agreement.htm?lang=-en>

6 <http://www.eib.org/projects/regions/eastern-neighbours/index.htm?lang=-en>

7 <http://www.eib.org/about/press/2010/2010-100-ukraine-government-delegation-visits-the-eib-agreement-on-eib-representation-in-kyiv-signed.htm?lang=-en>

8 <http://www.ebrd.com/pages/country/ukraine/comment.shtml>

9 <http://www.ebrd.com/english/pages/project/psd/2005/33896.shtml>

10 <http://www.ebrd.com/english/pages/project/psd/2007/37598.shtml>

11 <http://www.ebrd.com/english/pages/project/psd/2010/40518.shtml>

12 <http://www.ebrd.com/english/pages/project/psd/2009/40147.shtml>

13 <http://www.eib.org/projects/pipeline/2006/20060447.htm?lang=-en>

14 <http://www.eib.org/projects/pipeline/2009/20090117.htm?lang=-en>

15 <http://www.eib.org/projects/pipeline/2009/20090485.htm?lang=-en>

The Neighborhood Investment Facility (NIF) which is operated directly by the EC, in 2009 approved a EUR 10 million grant for the Power Transmission Network project to “*target selected investments in the Ukrainian high-voltage power network, focussing on technical loss reduction, overall improvement of network reliability/stability and fulfilment of requirements for full synchronisation of the whole Ukrainian power network system with the rest of Europe.*”¹⁶

Both the Second Backbone UHV Corridor and 330 kV Novoodeska–Artsyz have received technical assistance (TA) support from the above mentioned NIF project which covers the cost of the documentation preparation:

- Second Backbone Corridor – EUR 2.1 million;
- 330 kV Novoodeckaya – Arstyz TL – EUR 0.7 million.