

Ukraine nuclear power plants safety upgrade programme

For more information

Iryna Holovko

National Campaigner for Ukraine
iryna@bankwatch.org

Ionut Apostol

EBRD Campaign Coordinator
ionut@bankwatch.org

<http://bankwatch.org/our-work/projects/nuclear-power-plant-safety-upgrades-ukraine>

In December 2011, the EBRD released a project summary document (PSD) for a “Nuclear Power Plant Safety Upgrade Programme” (NPP SUP) in Ukraine. The bank is considering a EUR 300 million loan for safety upgrades at 15 Ukrainian nuclear reactors, with a total programme cost of EUR 1,45 billion. The EBRD Board of Directors final decision is scheduled for September 18, 2012.

CEE Bankwatch Network has expressed its concerns regarding this project as it is in fact directly contributing to an extension of the Ukrainian nuclear reactors' operation of up to 20 years beyond their engineered lifespan. Most nuclear reactors in Ukraine are reaching the end of their engineered lifespan¹. The Ukrainian nuclear regulator (SNRIU) confirmed in 2012 that the implementation of NPP SUP measures “will create the conditions needed to be able to decide on the possibility on the lifetime extension of nuclear units”².

The Bank's Energy Operation policy has no provisions for financing lifetime extension of operating nuclear units, allowing only for safety improvements, decommissioning and spent nuclear fuel and radioactive waste management: “*while the Bank will not consider providing financing to new reactors, it may provide financing to an operating facility in relation to nuclear safety improvements, or for the safe and secure management of radioactive waste and spent nuclear fuel, as well as for decommissioning, without a direct link to the closure of high risk reactors*”.

The bank is considering allocating millions of public money to sustain the future of nuclear industry in Ukraine, despite the fact that **Ukraine did not fulfil all the conditionalities of a previous EBRD/EURATOM safety modernisation loan (Khmelnitsky 2/ Rivne 4)**³. Furthermore, Ukraine still has a significant potential for an increase in energy efficiency and renewable energy (undoubtedly safer options that the EBRD has a mandate to focus on).

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.

1 1 unit in 2012, 1 unit in 2014, 2 units in 2015, 2 units in 2016, 2 units in 2017 and 2 units in 2019.

2 As according to provisions of Complex (consolidated) Nuclear Power Plant Safety Upgrade Programme referred to in SNRIU's letter to NECU from 23.02.12.

3 K2R4 Post-Start-Up Safety and Modernisation Programme,
<http://www.ebrd.com/english/pages/project/psd/2004/34838.shtml>

Failing to deliver outcomes of K2R4 loan – have any lessons been learnt?

There are three important outcomes of the K2R4 loan that failed to materialise, either fully or partially:

- independence and financial sustainability of the state nuclear regulator,
- improved safety levels of the other 13 Ukrainian reactors with K2/R4 as a benchmark,
- ensuring that the nuclear electricity tariff covers all costs, including safety upgrades.

To date, the state nuclear regulator (SNRIU) is understaffed and under-financed⁴. Energoatom has failed to comply fully with the IAEA's safety standards and has failed to improve the safety levels of the 13 Ukrainian nuclear reactors over a 6–7 year time-frame, while the tariff for nuclear electricity doesn't even cover all reactor maintenance costs, let alone the full costs of the safety upgrades⁵.

Although a number of K2R4 loan covenants were implemented (such as the implementation of a modernisation programme at K2R4, an increase in nuclear liability insurance, etc.), those that were not implemented were in fact crucial in reaching the key overall effect of this loan – **to set a nuclear safety benchmark for Ukrainian reactors compatible with international standards and provide for this level to be reached with a nuclear electricity tariff covering the full costs.**

This situation clearly illustrates that the EBRD cannot ensure that Ukraine will live up to loan conditions as far as the nuclear industry is concerned. It is particularly important to acknowledge this now when the bank is considering granting another loan for

safety modernisations of Ukraine's nuclear reactors. **The EUR 300 million under the NPP SUP programme is in fact meant to provide financial resources that Energoatom and Ukraine have failed to accumulate as was envisaged by the conditions of the K2R4 loan.**

The EBRD's inability to ensure that Ukraine aligns the nuclear electricity tariff with the conditions of the K2R4 loan should now be of particular interest to decision-makers in the bank as the PSD for the NPP SUP indicates that

“Ukraine's ability to trade with the EU is limited due to its lower nuclear safety standards as EU members have objected to receiving power from a system with such sub-standard nuclear entities. ... achieving current standards in nuclear safety should lift the nuclear safety related embargo and allow Ukraine greater flexibility to trade with the EU. This strategy is consistent with the country's recent entry into the Energy Community Treaty, which will open Ukraine's energy market to the EU and vice-versa”⁶

thus envisaging the possibility of nuclear electricity exports to EU member states.

The final report of the ex-post evaluation of the Euratom Loan Facility states that *“In providing a loan to a non-member country, the European Commission (and the EBRD) would not wish to subsidise other markets at the expense of the European industry...“*; the report also refers to sub-clauses of loan conditions as being *“self-evident in protecting the objectives of the market reform and implementation of an agreed tariff methodology”⁷*. As loan conditions on electricity tariffs were not implemented, but new and much larger loans are being considered by both the EBRD and Euratom, such loans may be argued to be subsidising Ukraine's nuclear energy producer and a development that would not be welcomed by a

4 SNRIU reply to official NECU request (from 5.03.2012). Available at <http://necu.org.ua/wp-content/uploads/VidpovidDIYARU.pdf>

5 Official correspondence from NEC Energoatom to NECU from 3.03.2012

6 Nuclear Power plant Safety Upgrade Programme, project summary document (PSD) <http://www.ebrd.com/english/pages/project/psd/2011/42086.shtml#>

7 Ex-Post Evaluation of the Euratom Loan Facility. Final report. EC DG Economic and Financial Affairs. 3rd June 2011

number of EU member states.

“Best practices” in the nuclear sector – where are they?

With a number of important expected outcomes of the K2R4 loan remaining undelivered, 7 years on the expected positive transition impact of this EBRD investment has yet to be fully realised. Being at the stage of consideration, the NPP SUP already raises doubts as to how successful this project can be in reaching the envisaged transition impact. The NPP SUP project summary document indicates the intention for *“Implementing best practice in terms of corporate governance and stakeholder engagement with a Strategic Ecological Assessment (SEA)... This will be among the first SEAs of its type in Ukraine, and the first for the nuclear sector.”*⁸

Bankwatch commissioned an expert review of the SUP to check, among others, this claim. The final report was released in March 2012⁹. It shows that the ecological assessment (EA) financed by the EBRD Shareholder Fund (about EUR 300 000) falls well short of European best practice in the nuclear energy sector. The direct contribution of NPP SUP measures to a lifetime extension process is not mentioned throughout the project preparation, making it possible for the project sponsor and the EBRD to avoid a full-scale SEA and probably a debate at the European level as to the adequacy of the public institution’s financial support to a lifetime extension of Ukrainian nuclear reactors.

The expert review’s conclusions confirm our concerns about the NPP SUP, as summarised below:

- The NPP SUP measures will be used to provide a sufficient safety level to extend

reactor operations but they are not essential for the safe closure of the reactors. SUP measures like those related to component integrity are conditions for extending the lifetime of reactors.

- The approach to the assessment of the NPP SUP by the Ukrainian government and the EBRD is far from best practice for the application of international conventions on SEA and EIA in the field of nuclear energy. A full SEA would require an assessment of alternatives to reactors lifetime extension and trans-boundary involvement. No information about the NPP SUP and lifetime extension plan was disclosed outside of Ukraine.
- The reliability of the Ukrainian nuclear safety programmes is cause for concern. A 2006 EBRD press statement says “...a modernisation programme for all nuclear power plants in Ukraine currently being implemented will upgrade all 13 nuclear reactors to internationally recognised nuclear safety level by 2010.” (EBRD 2006). Now, there are indications that all safety measures not implemented by 2010 were merely incorporated into the SUP for the 2010–2017 period.

The Final Report of the Ecological Assessment provides an explanation that there is no legal requirement to perform a full-scale SEA as Ukraine has not ratified the SEA Protocol. However, at the same time, the EBRD commissioned an SEA for the Ukraine Sustainable Energy Landing facility (USELF) and the draft report highlights that *“Ukraine does not presently have legislation or regulations that require the development of a Strategic Environmental Assessment (SEA) for plans and programs, such as can be required under the European Union (EU) SEA Directive ... However, EBRD’s Environmental and Social Policy (2008) requires compliance with EU directives and with national law for projects and programmes. In recognition of this, EBRD*

8 Nuclear Power plant Safety Upgrade Programme, project summary document (PSD) accessible at <http://www.ebrd.com/english/pages/project/psd/2011/42086.shtml#>

9 Critical Review of the Ukraine NPP Safety Upgrade Program, <http://bankwatch.org/publications/critical-review-ukraine-npp-safety-upgrade-program>

commissioned this SEA."¹⁰

Alternatives to nuclear do exist

The nuclear energy lobby in Ukraine spares no resources in its efforts to promote nuclear energy as the only possible way to provide Ukraine with affordable electricity for households and industry. Ukrainian officials are simply following suit because keeping the energy sector's in its current structure (inherited from Soviet times) with minimal repair to make it last until the next elections is much easier (but not necessarily cheaper) than working to reform it so as to start building a safe and sustainable energy system. However, this is exactly what is being implemented in other countries, and this is where EBRD should focus in its cooperation with Ukraine on energy.

Ukraine's potential for energy efficiency improvements and the development of renewable energy sources is significant enough to allow Ukraine to gradually phase out nuclear energy dependency. The energy intensity of Ukraine's economy is among the highest in the world, 2.5 times higher than in OECD countries¹¹, thus providing vast opportunities for improvement that would lead to a number of benefits in the longer term: increased energy security, economic benefits, improved quality of the environment.

Supporting nuclear power plants operations prevents the effective development of the renewable energy sector and diminishes incentives to work on the Ukrainian economy's energy intensity decrease. The nuclear industry in Ukraine is represented by a state monopoly, NEC Energoatom, currently producing about 47 per cent of all electricity in Ukraine, selling it at extremely low tariffs set-up by the state (0.025 EUR/KWh), thus preventing a reform of the energy market based on decentralised energy sources and

free market principles. Such a set-up is an obstacle to any serious attempt to implement energy saving technologies and energy efficiency measures in households. The EBRD has already attempted unsuccessfully (with the K2R4 loan) to get the Ukrainian government to align the nuclear electricity tariff with the full costs of production. The **EBRD's recently launched Ukraine Sustainable Energy Lending Facility (USELF) has a total of EUR 50 million to invest while the nuclear industry will potentially be receiving 6 times that amount from the EBRD**, thus illustrating a dangerous disproportion between what the EBRD is mandated to do and what it focuses on in practice.

The achievable potential in terms of renewable energy sources, as recognised by the EBRD, is at the level of 220 TWh per year¹², more than Ukraine's current total annual electricity production¹³. Ukrainian authorities estimations are even higher – up to 548 TWh per year or, as converted into standard fuel, amounts to approximately 98 mln. t. of s.f., which is more than **50% of total energy consumption in Ukraine in 2009**¹⁴.

As for energy savings, the residential sector by itself can provide for savings of about 17 per cent of current total electricity production. A recent market assessment of the Ukrainian residential sector prepared for the EBRD estimated that *"the economic energy savings potential would be approx. 32.6 million MWh per year [32,6 TWh per year], resulting in monetary savings of approx. 7.18 billion UAH (€ 624 million)."*¹⁵

10 USELF Strategic Environmental Review, Non-Technical Summary, December 201

11 TRES/GDP (PPP) 0,40 in Ukraine in 2011 compared to 0,16 in OECD countries

12 Based on the following breakdown used by EBRD's Kyiv regional office, Energy efficiency and climate change team in 2011: biomass – 120TWh/year, solar – 50 TWh/year, wind energy – 40 TWh/year, small-hydro – 10 TWh/year.

13 188 TWh in 2010, 193 TWh in 2011.

14 2009 National Report about implementation of the Energy Efficiency State Policy, by National agency of Ukraine on ensuring of efficient use of energy resources management, Kyiv 2010.

15 Residential sector of Ukraine: legal, regulatory, institutional, technical and financial considerations. Market Assessment final report by WorleyParsons, August 2011.

Conclusions and recommendations

We strongly believe that nuclear energy cannot be regarded as a safe and sustainable energy source, no matter how many modernisation measures are implemented at power plants and whether or not power plants comply with IAEA's safety standards.

We see no potential to improve Ukraine's nuclear safety through the loan to NEC Energoatom for NPP SUP in its current design as it will lead to extensions of the lifetimes of the NPPs by 15–20 years, thus resulting in extended operations of NPPs: i.e. increasing risks, rather improving safety.

We see the NPP SUP as direct support for further dominance of the nuclear sector on the electricity market, which under the current practice of tariff formation is a counter-incentives to any decrease in the energy intensity of the Ukrainian economy and will divert resources away from the development of the renewable energy sector.

Thus, we urge the EBRD to suspend the consideration of the NPP SUP in its current design.

We recommend that in order to genuinely improve safety and decrease the risks and long-term effects of the Ukrainian nuclear industry, European institutions should focus their financial support for Ukraine's nuclear industry **solely on the safe closure and decommissioning of old reactors.**