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December 2014

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Ukraine power distribution system. View from the World Bank in 2014

By Helen Gavaghan

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For the Ukraine, 2013-14 have been turbulent political years. What follows might help you make sense of the headlines. It is an account of a World Bank funded electricity power project. The story relates power generation and electrity transmission to regional development and environment, placing them in the setting of a nation's aspiration to economic stability, social well being and peace with its neighbours.

On 22nd December 2014 the executive directors of the World Bank approved an investment project financing (IFP) loan of US$378,425 million to improve electricity power transmission in Ukraine's Northern and Central power systems, and to reform the Country's wholesale electricity market. In the view of the World Bank the latter, as currently constituted, negatively impacts via currency exchange rates Ukraine's macroeconomic status and internal economic health.

Project success will be measurable by a reduction in the number of power outages, and the financial solvency and efficient working of the power sector and the new wholesale electricity market. The money is to come in most part from the International Bank for Reconstruction and Development (IRBD), with US $48,250 million of that from the Clean Technology Fund.

Known as the second power transmission project, the planned work is seen by the World Bank as having strategic importance for The Ukraine, and the bank' director for Belarus, Moldova and Ukraine, Qimiao Fan, is quoted in the press release announcing the loan as being delighted to support Ukraine's large power sector. The only safeguarding measure triggered by the loan application is for environmental assessment. Any environmental impact is anticipated to be minimal, and to exist only during the construction phase. Given no money is earmarked in this project for transmission line upgrades, there are no plans for involuntary resettlement. Ukraine is the borrower, and the responsible agencies are the Ministry for Energy and Coal Industry, and Uknergo, the national power company. Uknergo is wholly owned by the State.

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Strategic aims behind the project include: strengthening national and regional energy security; aligning the Ukrainian network with the European Network of Transmission System Operators of electricity; support of the balancing market mechanism (in electricity); and reform of the wholesale electricity market.

All these goals fall within the Government of Ukraine's reform aspirations for its energy sector, expressed in its energy strategy up to 2030. Published in June 2012 (PAD 1093, p74), the energy strategy updates a 2006 document. The revised strategy was finalized July 2013 (PAD 1093 p50, and given parliamentary approval in October 2013, then approved in November, 2013 by the president at that time (PAD 1093, p3-4).

Major themes put forward as loan justifications in the project's appraisal document (PAD1093) are: financial and private sector development (infrastructure services for private sector development) - 70%; trade and integration (regional integration) – 20%; and environment and natural resource management (climate change) - 10%. This breakdown appears in the PAD authorized for simultaneous disclosure and dated 1st December, 2014.

Climate change is mentioned as a cross-cutting issue, which the project will address, but it features more prominently in the press release for the approved project than it does in the loan documentation. Preliminary feasibility studies suggest that over the 20-year life of the project, the greenhouse gas (GHG) emission reduction would be 48.52 million tonnes of carbon dioxide equivalent (PAD 1093, p58). That estimated reduction is highly preliminary and based on, among other things, introducing 1,100 megawatts of wind and solar energy into Ukraine's energy supplying assets, as a result of the technological upgrades included in the project. Assumptions are explained more fully in the 105-page appraisal documentation.

Gender (equality), job (creation), conflict and violence (reduction and/or mitigation) and public–private partnerships, the other cross cutting areas the World Bank lists on its application forms as in need of solution, are not mentioned as relevant to the loan application. Essentially the document is saying that in each cross-cutting issue other than climate change the project will be neutral.

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Via the project, the World Bank is markedly stepping up its support for energy sector reform, by financially backing transitional needs in the shift from a single-buyer, wholesale energy market, to one that is competitive, and integrates with the so-called balancing mechanism used in EU countries. The balancing mechanism enables supply and demand to be matched at least day by day.

Of the single-buyer market the appraisal document says it has, "enabled government agencies to interfere excessively in the administration of the market, thereby undermining the market's ability to function as an effective price-setting mechanism."

As a result of the energy sector legislation approved in October, 2013, the country has until July 2017 to prepare for its new wholesale electricity market. The legislation came into effect on 1st January 2014 (fourteen).

Additional jurisprudential foundation for a reformed wholesale electricity market is given by a legal covenant attached to the loan for the second generation power transmission project, which asserts that, in return for the investment, tariffs should be established and maintained at a level "sufficient" to carry out operations and debt servicing.

Within the loan from the IRBD, $107,925 million is specifically for electricity market enhancements. A separate pot of US$2.5 million is to improve the institutional capacity of the Ministry for Energy and Coal Industry as it strives to support energy market reform. The purpose is to enable Ukraine to meet its commitments within the Energy Community Treaty (ECT) and its EU Association Agreement.

The ECT is internationally constituted and subscribed to by proximate States, striving via technical and regulatory harmonization to create an economy of scale delivering safe and fairly priced power to all consumer groups. It was founded in 2006. Members of the ECT are not all EU States.

Ukraine has had observer status to the Energy Community Treaty since November, 2006. Initially Treaty signatories set themselves a 10-year period for working on and within an internal energy market for the

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European Union and proximate States. Ukraine became a member in September 2010. Now ECT members have extended their internal energy market for a further 10 years, consequentially giving Ukraine chance to integrate technically and institutionally with parties to the ECT. The EU-Ukraine Association agreement was signed 27th June, 2014. Its aim is promoting closer co-operation.

Developments in Ukraine's energy sector have run parallel to economic and political turbulence, stemming from the country's emergence from the former Soviet Union. Late 2013 to 2014 was particularly difficult. At date of intended publication (12th January, 2015) Petro Poroshenko is the democratically elected president, and power has shifted back to parliament.

HARMONISATION

Discussion in the appraisal document for the second generation power transmission project makes clear technical harmonization is needed, and argues Ukraine needs to further ensure that private investors in its deregulated regional transmission companies (oblenegros) and its power generation companies bring networks and plant they are responsible for up to international standards. Financing options are touched on.

CLEAN TECHNOLOGY FUND

The US$48,250 million provided from the Clean Technology Fund (CTF) is to pay for Uknergo's next generation of communications, grid management, control systems and integration of the Country's modest wind and solar resources into the grid, as well as transmission network management and operation. Regional Banks and the World Bank administer the Clean Technology Fund.

Project appraisal documentation made public 1st December, 2014 states the second generation power project is scheduled to start in March 30th, 2015, and to be completed 30th June 2020. Expenditure of US$15 million is planned in the first year, ramping up to $US110 million in each of 2018 and 2019, falling back in the final year to US$13.425 million.

What makes this a sensible World Bank investment is a combination of need and the macroeconomic consequences of not acting. Pressure on gross domestic product, suspension of a Russian loan, and currency devaluation are all pushing Ukraine toward seeing through its Government's energy strategy, a strategy which in essence has survived successive governments.

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Without action, significant portions of the power transmission network are beyond, or approaching, the end of their design life. That makes Ukraine's current seeming surplus in generating capacity (59%) less prudent than it seems. The appraisal document reports, "These problems (power transmission) go beyond the sector, posing a threat to sustainable economic growth, with adverse effects on products and services in the country, as well as creating barriers to the integration of renewable energy in Ukraine."

Of the total agreed investment, US$268 million is earmarked to replace outdated high-voltage equipment, install gas-insulated switch gears, replace auxiliary power equipment, install reactive power compensation devices, and additional relays for protection, and distributed automated substation control. The outcome will be increased voltage stability and a reduction in local reactive circulation in the network. Variable shunt reactors are needed to synchronize selected substations with the European transmission network. The 330 kV substations scheduled for upgrade are more than 50 years old, and sited in residential areas where there is no room for expansion.

This second power transmission loan follows on from the first. That included: institutional development of Ukrenergo by, among other things, establishment of a corporate wide management information system; stabilization of the Crimea regional power grid; and installation of condenser batteries for compensation of reactive power at three transmission substations.

By implementing these back-to-back power transmission projects, The Ukraine aims to reduce the energy intensity of its economy from 0.4 kg of standard fuel per US$1 of gross domestic product in 2011. That figure is two to three times higher than other developed countries, according to the World Bank's documentation for the second generation power project.

FOOTNOTE: Ukraine joined the World Bank in 1992. Since then US$9 billion has been committed to the country, and the new investment takes the World Bank's active lending portfolio to Ukraine to US$4.6 billion.

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