

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA2565

<b>Project Name</b>	Belarus Biomass District Heating Project (P146194)
<b>Region</b>	EUROPE AND CENTRAL ASIA
<b>Country</b>	Belarus
<b>Sector(s)</b>	Other Renewable Energy (80%), Energy efficiency in Heat and Power (18%), Public administration- Energy and mining (2%)
<b>Theme(s)</b>	City-wide Infrastructure and Service Delivery (80%), Climate change (20%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P146194
<b>Borrower(s)</b>	Republic of Belarus
<b>Implementing Agency</b>	Belinvestenergoberezhenie (PMU)
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	11-Dec-2013
<b>Date PID Approved/Disclosed</b>	27-Jan-2014
<b>Estimated Date of Appraisal Completion</b>	12-Feb-2014
<b>Estimated Date of Board Approval</b>	15-May-2014
<b>Decision</b>	

## **I. Project Context**

### **Country Context**

After a decade of strong economic growth, Belarus has faced recurring macroeconomic turmoil in recent years. Loose fiscal and monetary policies in 2010 generated a short-term economic recovery but resulted in a widening current account deficit (15 percent of GDP in 2010) and heightened pressure on foreign exchange reserves. This put the economy into a tailspin during much of 2011, leading to loss of control of the exchange rate and sharply accelerating inflation. After a period of multiple exchange rates and severe foreign exchange liquidity constraints, the Belarusian ruble lost close to 70 percent of its value relative to the U.S. dollar and inflation soared to 109 percent in December 2011.

Authorities addressed the crisis through a combination of tightened macroeconomic policies and a new, more favorable energy deal with the Russian Federation. Together, these measures stabilized the economy. Growth declined to 1.5 percent in 2012 (from 5.5 percent the previous year). Inflation was contained but remained high in regional comparison at 21.9 percent during 2012. Strong export growth, especially during the first half of the year, and terms-of-trade gains reduced the current account deficit to 2.8 percent in 2012. But external pressures reemerged during the initial months of

2013, which saw a significant decline in export revenue.

Macroeconomic stability is expected to remain fragile. Imbalances could reemerge if macroeconomic policies are loosened prematurely in pursuit of high growth and especially if underlying structural problems—such as stagnant productivity, loss of competitiveness, and excessive reliance on external financing and cheap energy imports—are not addressed. In step with continued stabilization-oriented macroeconomic policies, structural reforms to reduce the role of the state, transform the state-owned enterprise sector, and promote private and financial sector development and integration into the global economy are crucial for Belarus to realize its growth potential.

### **Sectoral and institutional Context**

Lacking a sufficient energy resource base, Belarus relies heavily on imported energy resources (mostly oil and natural gas) to meet domestic energy demand. Annual costs related to energy imports amount to about 22 percent of GDP. The main source of imports is Russia. Natural gas is the dominant fuel in Belarus's energy mix, and about 80 percent of heat and electricity is produced from gas imported from Russia.

District heating plays an important role in the energy system of Belarus and is critical for meeting the basic heating needs of the population. Belarus has an extensive district heating system, including thousands of boilers operated by state-owned utilities under the Ministry of Energy and the Ministry of Housing and Utilities. The bulk of the system was built during 1970s and 1980s. Heat generation consumes about 8 billion cubic meters of gas annually—40 percent of the country's gas consumption in 2008. Ninety percent of the population relies on district heating for heat supply.

Viewing energy services as a social good, the government subsidizes electricity, gas, and district heating for households. District heating tariffs are currently at about 11–17 percent of cost-recovery levels, depending on the heat producer. The fiscal cost of underpriced energy amounts to about 2 percent of GDP annually. There is also a complex system of cross-subsidization between nonresidential and residential consumers and between electricity and heat.

Although Belarus has imported energy from Russia at below-world-market prices, the import price of natural gas has been rising sharply in recent years, increasing from US\$47 per thousand cubic meters in 2005 to US\$263.50 per thousand cubic meters in 2011. In response to rising energy costs and to generate fiscal savings, the government plans to eliminate cross-subsidization and achieve fully cost-recovering residential electricity and gas tariffs by 2015. Residential heating tariffs are expected to reach 60 percent of cost-recovery levels by 2015.

### **Key Issues**

(i) Affordability of district heating after cost-reflective pricing reform. Depending on the scenario for natural gas prices, residential heating tariffs could increase by 112–256 percent in real terms after the removal of subsidies. The Public Expenditure Review conducted by the World Bank for Belarus in 2011 estimated that as a result of the planned increase in residential energy tariffs, the national poverty rate could increase from 5.4 percent in 2009 to about 6.3–7.2 percent in 2014. That is, without remedial actions, up to 190,000 additional people in Belarus could fall into poverty and an additional 120,000 would become vulnerable or at risk of poverty.

(ii) Vulnerability to gas price shocks and supply disruption. Heavy dependence on imported energy from a single source exposes Belarus to greater energy price volatility and supply disruption risks. In 2010, for example, deteriorating relations with Russia led to the temporary removal of discounts on energy imports from that country, sharply increasing the current account deficit and contributing significantly to the 2011 foreign exchange crisis. Over time, gas import prices are expected to return permanently to market levels, affecting the balance of payments and fiscal situation if remedial measures are not taken in advance.

(iii) High energy and carbon intensities compared with countries in the European Union. Despite remarkable progress in reducing energy intensity (with a 45 percent decrease from 2000 to 2010), Belarus still lags behind the EU-27 countries, whose average energy and carbon intensities are about half those of Belarus. In the district heating sector, the estimated energy savings potential from wide-scale energy efficiency investment is about 30 percent of current gas use. However, energy efficiency financing in district heating has been limited. Energy efficiency measures widely used in district heating systems in Western Europe—such as automated building-level heat substations, which on average reduce energy consumption by 15–25 percent compared with centralized group heat substations—have received only limited application in Belarus.

(iv) Underutilized potential of wood biomass resources. Forests are one of Belarus's richest natural resources. They cover about 39 percent of the country's land area—the fifth largest share in Europe and Central Asia. Although forests have been efficiently and professionally managed to a high standard, there is room to further explore their potential for contributing to economic growth. The forestry sector in Belarus contributed 2.1 percent of GDP in 2011, compared with 3–5 percent for the more developed forestry industries of Scandinavia and Canada. Using low-quality wood, now treated as industrial waste, for heat and power generation could promote the development of the wood processing industry, encourage sustainable forest management, and create new job opportunities.

Belarus has abundant biomass resources, spread relatively evenly across the country. Forests are owned by the state and managed by state forestry enterprises subordinate to the Ministry of Forestry. Belarus has developed a package of standards and a Code of Technical Practice for the national forest certification system subject to requirements of international conventions, regulations on sustainable forest governance, and the Biodiversity Conservation National Strategy and Action Plan. By 2012, 94 of the 95 state forestry enterprises were certified to Program for the Endorsement of Forest Certification (PEFC) standards. A total of 8.1 million hectares are PEFC certified, representing more than 86 percent of the total forest area in Belarus and 99 percent of that managed by the Ministry of Forestry. In addition, 47 state forestry enterprises have Forest Stewardship Council (FSC) forest management and chain of custody certificates.

Forests in Belarus are well stocked and growing (in both standing volume and area). Currently, there is an overcapacity of fuelwood supply. According to a recent World Bank estimate, fuelwood supply could reach 11.3 million cubic meters by 2020, sufficient to meet the government's target to increase the share of local fuels (mainly biomass) in heat generation from 25 percent in 2011 to 32 percent in 2020. The current price of local biomass is about half the 2013 price of imported natural gas on an energy-equivalent basis even without taking into account the environmental benefits of renewable energy. This price difference will widen with the projected increase in future gas prices. Improving the energy efficiency of heat generation and scaling up the use of wood biomass would therefore help address the challenges in the energy sector mentioned here—by reducing energy

production costs, diversifying energy supply, and further unlocking the potential of forestry resources in Belarus.

## II. Proposed Development Objectives

The Project Development Objective is to scale up the efficient use of renewable biomass in heat and electricity generation in selected towns of Belarus.

## III. Project Description

### Component Name

District Heating Energy Efficiency

### Comments (optional)

### Component Name

Biomass Heat Generation

### Comments (optional)

### Component Name

Technical Assistance

### Comments (optional)

## IV. Financing (in USD Million)

Total Project Cost:	90.00	Total Bank Financing:	90.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
Borrower			0.00
International Bank for Reconstruction and Development			90.00
Total			90.00

## V. Implementation

### A. Institutional and Implementation Arrangements

The project would be implemented by the Energy Efficiency Department of the State Committee for Standardization, the existing PMU (BelInvestEnergoSberezhenije) and district heating companies in the selected project areas. The Energy Efficiency Department is the agency responsible for the implementation of the National Energy Efficiency Program, the State Program on the Development of Local and Renewable Energy Sources, and the National Program on the Construction of Local-Fuel-Fired Energy Sources. All these programs are dedicated to improving energy efficiency and increasing the use of local and renewable energy sources in Belarus.

The PMU is subordinate to the Energy Efficiency Department. It would be responsible for daily project implementation and for the monitoring of and adherence to World Bank requirements. The PMU has successfully implemented the Bank-financed Social Infrastructure Retrofitting Project and is currently implementing the Energy Efficiency Project and the Post-Chernobyl Recovery Project.

The PMU has adequate and practical knowledge of Bank procedures. It also has both the technical capacity and the necessary links to ministries and oblasts to prepare and implement the proposed project. The PMU has skilled managerial, technical, procurement, and financial management staff, and these staff would receive further training for the specific needs of the project.

All the participating district heating utilities are subordinate to the Ministry of Housing and Utilities and the oblast/rayon(city) executive committees. Each utility has assigned a coordinator (project manager) responsible for project implementation to work with the PMU. The district heating utilities would be responsible for providing terms of reference for design documents (or approving design documents when they are available), ensuring appropriate technical supervision of the contracts, accepting payment orders, and submitting adequate documentation to the PMU so that it can prepare and sign disbursement applications. The district heating utilities may also rely on external consultancy support in the design and supervision of the respective contracts.

Forests are owned by the state and managed by state forestry enterprises subordinate to the Ministry of Forestry. Biomass fuel would be supplied by state forestry enterprises in close proximity to participating district heating utilities (within a distance of 0–60 kilometers) under long-term fuelwood delivery agreements. The forestry enterprises would supply wood logs, wood chips, or both. If only wood logs are delivered, the district heating utilities would produce wood chips themselves. All participating state forestry enterprises have been recognized for sustainable forest governance subject to requirements of international conventions and have been certified to PEFC standards, FSC standards, or both. Annex 2 describes the fuel supply chain in detail.

The bidding documents would be prepared by the PMU's procurement staff in close collaboration with the technical staff of all participating district heating utilities. The technical staff of the utilities would be responsible for preparing the technical documents required to develop the bidding documents and for evaluating the technical aspects of the bids from the bidders but would not be involved in developing the detailed designs of the investment. The PMU's Tender Committee would evaluate bids or proposals. The Review Committee, which includes ministry representatives and technical staff of the participating utilities, would clear evaluation reports before sending them to the Bank on a "no objection" basis. The PMU would also be responsible for disbursement and financial management.

The PMU would operate in accordance with the Project Operational Manual (POM), which will be drafted prior to appraisal. The manual will outline the implementation arrangements, including procurement, contract management, payment authorization, environmental management, social safeguards, periodic reporting, and relationships between the implementing and beneficiary agencies.

#### B. Results Monitoring and Evaluation

The monitoring and evaluation of outcomes and results during implementation would follow standard Bank practices. Project monitoring and evaluation would include (i) project results indicators as specified in annex 1, (ii) quarterly progress reports on project implementation, and (iii) a midterm review of implementation progress. Project results indicators would be collected semiannually by the PMU from participating utilities. The PMU would be responsible for the overall monitoring and evaluation of implementation results and for the preparation of semiannual and midterm review progress reports. The review of implementation progress would be based on the intermediate results indicators. As the project advances, monitoring would focus on the PDO-level

results indicators.

The Bank implementation support team would monitor implementation progress and evaluate the outcomes quarterly and annually, using information from reports prepared by the PMU. Discussions during implementation support related to institutional capacity building, financial viability, along with technical reviews, and site visits would provide additional support for the project monitoring.

For subprojects, pre-project energy consumption and projected energy and emissions savings will be estimated on the basis of technical feasibility reports prepared by the PMU and participating utilities; post-project energy savings would be calculated on the basis of actual performance, assessed by comparing baseline and metered energy consumption. These data would be aggregated and reported in the IBRD progress reports. Since investments would precede the energy savings and corresponding reductions in emissions, project indicators include a time lag between them. Differences between estimated and actual savings would be documented to allow the clients to improve their technical analyses in subsequent projects.

## VI. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>
Environmental Assessment OP/BP 4.01	<b>x</b>	
Natural Habitats OP/BP 4.04		<b>x</b>
Forests OP/BP 4.36		<b>x</b>
Pest Management OP 4.09		<b>x</b>
Physical Cultural Resources OP/BP 4.11		<b>x</b>
Indigenous Peoples OP/BP 4.10		<b>x</b>
Involuntary Resettlement OP/BP 4.12	<b>x</b>	
Safety of Dams OP/BP 4.37		<b>x</b>
Projects on International Waterways OP/BP 7.50		<b>x</b>
Projects in Disputed Areas OP/BP 7.60		<b>x</b>

**Comments (optional)**

## VII. Contact point

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