1. Country and Sector Background

Economic and Geographic Context.

1. Belarus, situated in Eastern Europe, is a landlocked country with a total surface area of 20.8 million ha. It is bordered by the Russian Federation, Ukraine, Poland, Lithuania and Latvia. The country has four distinctive geographic regions. The north has many lakes and hills, and is covered with forests. The east is an elevated plain region. The Polessye, a lowland area of rivers and swamps, occupies the south, and the west is an agricultural region with mixed conifer forests. The marshy land of the Polessye is the largest swamp area in Europe. The climate is continental in the central and eastern parts of the country and maritime in the rest of the country. The average annual precipitation is about 700 mm, and varies between 550 mm in the southeast to 800 mm in the elevated areas of the central part of the country. Groundwater resources are available throughout the country. They amount to 18 km$^3$ per year and drain entirely into surface water bodies.

2. The country with a population of 9.7 million (2006 data), has an urbanization rate of 71 percent. The country is divided into six oblasts (regions), with their administrative centres in Minsk, Brest, Vitebsk, Gomel, Grodno and Mogilev. There are 110 towns, of which 15 towns have a population of over 100,000.

3. The Belarus economy grew at about 10 percent in 2006, averaging 8.2 percent between 2002 and 2005. A substantial terms of trade improvement (primarily, energy terms of trade) and
strong partner country growth were important factors behind these high growth rates. The centralized economic system distributed these terms of trade gains across the economy through higher wages and transfers, boosting domestic demand. The Government’s generous income policies boosted household consumption by 14.2 percent in real terms in 2006. The poverty headcount ratio (national definition) fell from 30.5 percent of the population in 2002 to 11.1 percent in 2006.

4. An improved macroeconomic environment also supported economic growth. Price controls and the peg of the Belarus Ruble to the dollar helped lower inflation from high double digits in 2001 to 7 percent in 2006. Since 2004, the consolidated budgets have been roughly in balance and even recorded a surplus of 1.4 percent of GDP in 2006. Domestic debt has been stable at about 6 percent of GDP (5.1 percent in 2006). Total public debt accounted for a still low 19 percent of GDP by the end of 2006, of which three quarters is short-term.

5. However, 2007 marked a clear break in Belarus’ favorable trade status with Russia. New oil and gas agreements concluded between Russia and Belarus at the beginning of 2007 implied a substantial deterioration of Belarus’ energy terms of trade. With Russia’s push towards market prices for its exports, the natural gas import price more than doubled in 2007 to US$100/tcm, and, according to the agreement, will gradually increase to European market levels by 2011. In addition, on account of Russia progressively eliminating the subsidized export taxes on oil exports to Belarus, the import price for Belarus increased further.\(^1\) As a result of these agreements, Belarus’ net energy import bill has increased by almost US$2.5 billion, i.e., the 2007 energy terms of trade shock was equivalent to about 5 percent of GDP.

6. Against this background, Belarus’ performance in 2007 was better than expected. The GDP growth decelerated somewhat but remained high (8.2%), the current account deficit (CAD) widened (to 3.9 percent of GDP) but less than implied by the energy price shock, and official reserves tripled. Poverty rates declined further (to 7.7 percent of population). The most important factors behind the 2007 outcome are: (i) improved terms of trade for Belarus’ main exports (fertilizers, metals, foodstuffs); (ii) acquired external financing in excess of expected CAD (of almost US$3.5 billion, out of which about US$1.3 billion is FDI and about US$2 billion in terms of new debt); (iii) improved energy efficiency; and (iv) tightened fiscal policy and moderated wage growth.

7. **Energy Sector.** During recent years, Belarus has made significant efforts to reduce energy intensity and improve efficiency. The achieved results are encouraging; energy intensity was about 0.76 (toe per dollar of GDP) in the mid-1990s and was reduced to 0.35 in 2007. The government’s energy efficiency program aims to further reduce the energy intensity of the economy by over 30 percent by 2010. The aim is to strengthen energy security through capital investments in asset renovation, efficient utilization of fuel and energy resources, and more extensive use of domestic, alternative and renewable sources of energy, such as biomass.

8. The government has approved large energy programs in 2006 and 2007 which aim to reduce energy intensity, increase the share of domestic sources in energy generation, and increase

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\(^1\) From 2007, Russia started to apply oil export tax to exports of oil to Belarus in the amount of 29 percent of export tax applied to the third countries (and it is expected to rise to 36 percent by 2009).
energy security. The programs are: (i) program to modernize major energy generating plants; (ii) program to convert existing heating plants to combined heat and power generation; (iii) energy efficiency program; and (iv) renewable energy program.

9. In 2006, the Bank prepared the energy sector report “Belarus: Addressing Challenges Facing the Energy Sector” which emphasizes the same issues as the Government’s new programs mentioned above. In addition, the report recommends the gradual introduction of structural and institutional reforms in the sector in order to move from vertically integrated state owned utilities towards more liberalized energy markets. After the report was issued, there have been positive developments in Belarus related to plans for the unbundling of the state owned energy companies and changes in the regulatory and institutional framework.

10. The European Commission (EC) and the Government of Belarus opened their energy dialogue in 2007 and continued with a new set of meetings in Minsk in January 2008. At the end of 2007, the EC allocated Euro 5 million for technical assistance in the Belarus energy sector. Part of the EC funds could be used during the Bank’s energy efficiency project preparation and implementation for technical assistance on the energy market rules and regulatory issues.

11. The government of Belarus has expressed its interest to borrow from the Bank for energy efficiency projects during the preparation of the CAS and also during the identification of the proposed project. The Ministry of Energy, Minskenergo, Mogilevenergo and the Energy Efficiency Department have committed to work with the Bank during project preparation and prepare and finance from their own sources the required feasibility studies and environmental management plans. The Country Assistance Strategy (CAS) for 2008-2011 was approved in December 2007, and it includes the proposed Energy Efficiency Project.

2. Objectives

12. The development objective of the project is to improve energy efficiency in heat and power generation in selected towns in Belarus.

13. The key performance indicators will be based on sub-project specific indicators on operational efficiencies achieved in the sub projects. Annex 3 provides the detailed results monitoring framework. For each sub-project the following key performance indicators will be measured:

- Reduction of gas consumption
- Total efficiency of heat and power generation

3. Rationale for Bank Involvement

14. The project is aligned to the Belarus main national energy programs: (i) program to modernize major energy generating plants; (ii) program to convert existing heating plants to combined heat and power generation; (iii) energy efficiency program. The implementation of the above-mentioned programs started in 2007, with the total estimated costs of the three programs
being about US$9 billion by 2011. The programs specify the development priorities concerning rehabilitation of the existing energy assets and their sources of funding for the next five years. The objectives of the programs are to:

a. Improve energy efficiency of the existing power and heat generation plans;
b. Convert existing heat-only-boiler plants to more efficient combined heat and power plants;
c. Improve quality of power and heating services;
d. Improve the security of supply of power and heat;
e. Reduce dependency on foreign energy imports.

15. In 2006 the Bank’s Board of Executive Directors approved a US$50 million loan for the Post-Chernobyl Recovery Project (PCRP) focusing primarily on energy efficiency and on the provision of reliable heat and hot water services in order to improve living conditions. As the Bank begins to re-explore lending opportunities in Belarus, the energy sector is again emerging as an important priority. Following two demand side energy efficiency projects – the Social Infrastructure Retrofitting Project (SIRP) and the Post Chernobyl Recovery Project (PCRP) -- the proposed project is planned to improve energy efficiency on the supply side of power and heat generation. The Bank is well positioned to assist the GoB in addressing these challenges, given its involvement in social and economic issues, its recent experience with the preparation and approval of the Post-Chernobyl Recovery Project and its ample experience in transition countries. The Bank has extensive knowledge and experience in implementing energy sector-related operations, not just in Europe and Central Asia but across the globe.

16. According to the CAS, the Bank will maintain a limited and selective presence in lending, including improving energy efficiency. This project is expected to enhance the efficiency and sustainability of the energy sector and generate tangible economic benefits and is therefore well aligned to the CAS objectives.

A. Higher level objectives to which the project contributes

17. The proposed project is consistent with the FY08-FY11 CAS objectives to assist Belarus to address global environment and energy challenges and enhance the competitiveness of its economy to assure rising incomes and to protect the welfare of the weakest. The CAS concern with global public goods includes attention to reducing energy intensity, access to the benefits from the Kyoto Protocol and other international arrangements and incentives, attention to environmental challenges, follow-up work on dealing with the Chernobyl consequences, and trade and adjustment to shocks. By supporting the government’s efforts to improve energy efficiency, the proposed project is expected to enhance the efficiency and sustainability of the energy sector and generate tangible economic benefits.

4. Description

18. Conversion of existing heat-only-boiler plants to combined heat and power plants. (US$160.8 million). The project will convert existing heat-only-boiler plants to combined heat and power plants at 6 sites. All plants will use natural gas as the main fuel. The largest plant will be in Borisov with a new combined cycle CHP unit with an electricity capacity of about 65 MW.
The other sites will be based on gas engine technology and are located in Mogilev (4 MW), Retchitsa (3 MW), Ruba (3 MW), Oshmiany (3 MW) and Borisov (1 MW). The introduction of combined heat and power generation will improve efficiency of the plants and thus reduce gas consumption.

19. **Design and supervision consultancy** (US$9 million). The design and supervision consultancy will be performed by Belarusian design institutes and financed by the Belarusian side. In addition, the component will also finance construction management and investment monitoring.

20. **Project Implementation and Management**: (US$ 2.5 million). A Project Management Unit (PMU) will carry out the procurement, contract supervision, and financial management of the project including auditing and other fiduciary requirements. The staffing and incremental operating costs for the PMU will be financed by the Government, and the WB loan funds will cover the cost of additional training for PMU staff and financial audits.

5. **Financing**

<table>
<thead>
<tr>
<th>Source</th>
<th>($m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrower</td>
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</tr>
<tr>
<td>International Bank for Reconstruction and Development</td>
<td>125</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>172.6</td>
</tr>
</tbody>
</table>

6. **Implementation**

21. The project will be implemented by the existing Project Management Unit (PMU) that is successfully implementing the ongoing Bank financed SIRP and PCRP projects. The PMU has the necessary knowledge and capacity to implement the project, although it does not yet have experience in handling large supply and installation contracts. The goal is to streamline the implementation arrangements within the existing framework of implementation and coordination of the government’s program of investments in energy efficiency and reconstruction of the energy infrastructure, to utilize existing capacities, and to avoid additional layers of authority.

22. The Energy Efficiency Department (EED) under the Committee of Standardization is the agency responsible for the National Energy Efficiency Program dedicated to improving energy efficiency in Belarus. It is separate from the Ministry of Energy (MOE).

23. The Project Management Unit (PMU - Belinvestenergoberezhnie) is subordinate to the EED. It will be responsible for daily project implementation and monitoring and adherence to the World Bank requirements. The PMU has adequate and practical knowledge of Bank procedures. It also has the technical capacities as well as the necessary linkages to the ministries and Oblasts to prepare and implement the proposed project. The PMU has skilled managerial, technical, procurement and financial management staff which will be further trained for the specific needs of the project.
24. Minskenergo and Mogilevenergo, which are owners of Borisov and Mogilev boiler houses, have assigned a coordinator (project manager) and deputy coordinator to work with the PMU. Minskenergo and Mogilevenergo will be responsible for the preparation of the technical specifications, drawings, etc. of the bidding documents. They will sign contracts with suppliers and the PMU will co-sign the contracts as the processor of payments from the Loan. Minskenergo and Mogilevenergo will be responsible for 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 PMU’s responsibilities will be to organize the procurement and disbursement procedures in accordance with Bank requirements.

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

7. Sustainability

26. The project supports the government’s energy efficiency program by financing a small part of the large multiyear investment plan. It is aligned with the following government objectives: (i) to increase efficiency in the utilization of energy resources in the country; (ii) to reduce dependency on imported energy, and (iii) to improve security of electricity and heat supply.

27. Given the government’s track record of commitment to these two areas, the project is sustainable. Belarus’ successful record in increasing tariffs, improving cost recovery and collections along with its commitment to physical improvement of the system is a reassuring sign of commitment and sustainability. The strategy of improving physical performance of the system to avoid losses ensured that tariff increases were minimal and avoided burdening the population with payments for wasted fuel and system inefficiencies that were beyond the customers’ control. This combined strategy of physical and financial improvements contributes to the sustainability of the system.

28. Belarus has ratified the Kyoto Protocol, but is waiting for other countries to ratify the amendments in order to fully benefit from carbon trading. Because of the expected length of time to complete the ratification of the required amendment, it may not be feasible for Belarus to engage in the compliance market before the expiration of the Kyoto Protocol in 2012. However, Belarus can pursue pilot transactions in the voluntary carbon market from the emission reduction generated from this Project.

8. Lessons Learned from Past Operations in the Country/Sector

29. The Bank’s involvement in the energy sector in many of the transition countries of the region for over 15 years has provided the WB team with many lessons, a few of which have been highlighted below and reflected in the design of the proposed project.
30. **Complexity:** Experience has shown that projects in transition countries need to be simple in design as the Government is keen to deliver immediate and visible benefits to the population and less keen on being subjected to heavy reform agendas. This has resulted in project initiatives not materializing. Accordingly, the proposed project is simple in design and is closely aligned to the Government’s national energy efficiency program which targets investments in the rehabilitation and reconstruction of energy infrastructure. The project fits with the Government’s objectives to provide energy efficient power and heat generation.

31. **Supporting Client Objectives:** Bank experience in Belarus shows that technical capacity is generally high, and that implementation can proceed satisfactorily given a supportive governance environment. Bank projects in Belarus have faced difficulties in achieving their objectives and scored low on sustainability, largely due to the inability and unwillingness to implement difficult reform conditions. As also mentioned above, this project is closely aligned to the Government’s national energy efficiency program and is not designed to push for any major reform of the energy sector at this time but rather to support the government’s plan for the development of the energy sector.

9. **Safeguard Policies (including public consultation)**

<table>
<thead>
<tr>
<th>Safeguard Policies Triggered by the Project</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment (OP/BP 4.01)</td>
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<td>Safety of Dams (OP/BP 4.37)</td>
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<td>Projects in Disputed Areas (OP/BP 7.60)*</td>
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<td>[X]</td>
</tr>
<tr>
<td>Projects on International Waterways (OP/BP 7.50)</td>
<td>[ ]</td>
<td>[X]</td>
</tr>
</tbody>
</table>

32. The project is assigned an environmental screening category “B”, as it is expected to have generally positive impact on the environment. The proposed conversion of the heat boilers into CHPs will likely improve the thermal efficiency of the power system of Belarus as a whole and reduce fuel consumption and the emissions of greenhouse gases. However, the local consumption of fuel at the converted HOBs will increase, creating the need to assess and monitor the local air pollution levels for NOx and CO, as well as fine particulates in cases when fuel oil is used as a back-up fuel; NOx/NO2 is of particular concern as it is relatively more difficult to control while the applicable standards are tight (100 \( \mu g/m^3 \) daily average is the maximum allowable concentration in Belarus.) The minor negative impacts which inevitably occur during the civil works will be mitigated by proper planning and adherence to measures described in the Project Operational Manual, specifically the environmental guidelines. The EA has been

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* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties’ claims on the disputed areas
completed along with the EMP and these documents have been publicly disclosed locally including to NGOs and also disclosed in the Bank’s Infoshop on September 16, 2008.

10. List of Factual Technical Documents


11. Contact point
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