



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 20-Apr-2020 | Report No: PIDC28744

**BASIC INFORMATION****A. Basic Project Data**

Country Belarus	Project ID P173192	Parent Project ID (if any)	Project Name Belarus Public Buildings Energy Efficiency Project (P173192)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date Dec 15, 2020	Estimated Board Date Sep 21, 2021	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Government of the Republic of Belarus	Implementing Agency Energy Efficiency Department of State Committee for Standardization, RUE 'Belinvestenergoberezhnie' (BIES)	

Proposed Development Objective(s)

The project development objective is to improve the energy efficiency in selected public buildings, and design and demonstrate a sustainable financing mechanism to support the scale-up of energy efficiency in public buildings.

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	60.00
Total Financing	60.00
of which IBRD/IDA	60.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	60.00
--	-------

Environmental and Social Risk Classification

Concept Review Decision



Moderate

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

Since its independence the Republic of Belarus has pursued a gradual transition path, characterized by limited structural reforms and a modest reorganization of Soviet production networks. Economic growth was rapid from 2010-2014, with annual growth averaging 3.5 percent and, in 2015-2016, the economy entered a recession when gross domestic product (GDP) contracted 6.3 percent. The period 2017-18 saw a tepid cyclical recovery with GDP reaching 3.0 percent in 2018, backed by macroeconomic stabilization measures, policies to promote private sector development, increased domestic demand, and mild recovery in the economies of trading partners. However, by 2019, GDP slowed to 1.2 percent due to deteriorating external conditions and persistent structural weaknesses. Given the coronavirus (COVID-19), the economy is expected to contract by 4 percent in 2020 as the pandemic will add to the deterioration, in current account and fiscal revenues as global economic activity and demand contract. Supporting economic stimulus programs will be a priority to help the economic recovery.

The outlook for growth is subdued. The Belarusian economy is highly dependent on exports of a limited number of natural resources, including selling value-added products that its two refineries make from Russian crude and from the transit fees it charges to deliver Russian oil and gas to Europe. Failure to agree on terms for crude oil supply led to a halt of Russian oil supply since January 2020. Oil imports fell from 2 million tons to 0.5 million tons in January, which led to an industrial output contraction of 5.8 percent (y/y) and estimated monthly GDP reduction by 1.9 percent. Continued operation at lower volumes will take a significant toll out of Belarus' energy export potential by limiting production to meeting domestic demand for fuel products. Reduced revenue from petroleum product exports or the reselling of crude oil thus risks further dampening the country's economic growth.

Furthermore, the COVID-19 epidemic in Belarus is still in its early stages, but confirmed cases are increasing rapidly, which could hurt the economy even more. The first confirmed COVID-19 case in Belarus was identified on February 28, 2020. By March 25, 2020, there were 57 active cases, 29 people had recovered, and no deaths had yet been recorded. As of April 13, 2020, the Ministry of Health (MoH) confirmed 2,919 active cases and a death toll of 29 people. To date, the Government of Belarus (GoB) has not issued any formal declaration of emergency or implemented substantial mitigation or suppression measures to combat the spread of COVID-19. The Belarusian authorities have not introduced any significant restrictions or prohibitions, limiting their intervention to non-binding recommendations to businesses and private persons to follow WHO guidelines with respect to precautionary measures. Belarus remains the only country in the region to keep its borders open, and its enterprises, shops, subway and schools remain open. This approach may likely result in increased COVID-19 cases that will have a toll on the health sector and overall economy, as the pandemic is quickly evolving from a health emergency into an economic recession.

Economic recovery programs will be critical, especially the support of labor-intensive energy investment programs that can contribute to fiscal stimulus plans. Energy efficiency (EE) can be an engine of job creation and economic



growth, while reducing carbon footprint. For example, in the U.S. the EE sector has produced more jobs than any other sector in energy, adding more than 400,000 jobs in the past five years. In addition, many of the jobs generated are local and help boost the hard-hit construction and manufacturing sector. Studies have shown that every US\$1 million investment creates approximately eight full-time jobs in energy efficiency, nearly three times the number of jobs created in the fossil fuel sector.¹ The benefits of EE go well beyond the scaling back of energy demand and lowering energy bills, and can be important elements for fiscal stimulus plans. EE in public buildings can lead by example to help boost the economy to revitalize construction, manufacturers, and smaller energy service-type companies.

The National Strategy for Sustainable Development of the Republic of Belarus (NSSD) for 2030 aims at transforming the economy towards innovative sustainable development and includes energy efficiency development. The NSSD proposes transformation towards a green economy while guaranteeing human development, increase of living standards and ensuring an enabling environment through the following priorities: development of human capital and an increase in the quality of life; scientific and technical development (including energy efficiency); conservation and rational use of natural resources and environmental safety; sustainable regional development and improvement of institutional mechanisms for sustainable development. The key focus for energy efficiency covers the introduction of modern technologies and manufacturing, improvement of systems for measurement, control, and stimulation mechanisms for EE, and construction of EE buildings and thermal renovation of the existing ones.

Sectoral and Institutional Context

The country is highly dependent on Russia for its energy supply. In 2018, close to 85 percent of its primary energy consumption was imported from Russia, and about 9 percent of power and 80 percent of heat were produced from imported Russian natural gas. Reducing the reliance on a single foreign energy supplier is an important driver of national energy policy and a key driver for the construction of its nuclear plant, Ostrovets (2.4 GW), whose first phase (1.2 GW) should become operational by the end of 2020 and completely operational by 2022. It is expected that 44 percent of electricity for national consumption would be generated from nuclear power.

Energy efficiency is critical for Belarus to help sustain energy security and independence while meeting its commitments to job creation, technological innovation, and environmental sustainability. The government has recognized the importance of energy efficiency (EE) to increase the competitiveness of the economy by reducing its dependence on imported energy fuels, as evidenced by its inclusion in various policy documents. The NSSD 2030 considers energy efficiency as one of the key elements of technological development to align to the country's green economy and increased energy security. The National Energy Savings Program for 2016-2020 and draft Energy Saving Program for 2021-2025 call for a decoupling of energy consumption from GDP and further increase of local fuel use, including renewables (biomass). Thus far, total energy savings are estimated at 2,800 ktoe (consisting of final energy savings of 2,310 ktoe; primary energy savings of 403 ktoe; and renewables of 87.5 ktoe). The 2019 National Energy Efficiency Action Plan for Belarus calls for a 15.7 percent reduction in energy intensity across all sectors by 2035. Belarus' first National Determined Contribution (NDC) of 2016 commits to reduce greenhouse gas emission by at least 28 percent on 1990 levels by 2030.

Although Belarus has made important progress in reducing the energy intensity of its economy opportunities to increase remain. Its primary energy intensity of GDP, measured in toe per thousand USD in 2010 PPP, decreased from

¹ Garret-Peltier, Heidi. 2017. *Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy and fossil fuels using an input-output model*. *Economic Modelling*. Science Direct. Vol.61. February, Pages 439-447 <https://www.sciencedirect.com/science/article/abs/pii/S026499931630709X>



0.33 in 2001 to 0.16 in 2015 and has remained at that level. However, compared to OECD countries and world average, Belarus energy intensity remains 1.5 and 1.2 times higher respectively, which shows that it still has significant potential to reduce energy intensity through adjustments of the mix of economic activities and by improving the efficiency of energy production and consumption.

The EE agenda has been quite active in Belarus mostly focusing on energy production supply side EE, namely rehabilitation of heat and electricity generating plants, heat and electricity networks, however there are important untapped opportunities for demand side EE improvements, especially in the public buildings sector. Experience shows that EE in public buildings can help stimulate market development and lead by example. Implementing public building renovation programs can help build capacity of different market actors -including energy auditors, technical designers, construction firms, and promote development of energy service companies- and demonstrate results and benefits of the program. Doing EE retrofits in the public sector can help important social sectors such as hospitals and schools improve their comfort levels (e.g. more comfortable temperatures, more appropriate humidity and better lighting), while boosting local construction and manufacturing jobs. More than 90 percent of the public building stock was built before 1996 with poor energy performance, including 95 percent of kindergartens and secondary schools, nearly 99 percent of hospitals and polyclinics, and 98 percent of administrative buildings. Pre-1996 public buildings consume, on average, nearly twice as much energy per square meter as buildings constructed after 2011.²

In 2015, the Government commissioned a study³ to assess the potential for EE in the residential sector and public buildings that was updated in 2019. The study estimated that there are about 16,150 public buildings in the education (51 percent), health (13 percent) and administrative (9 percent) subsectors across the country, representing about 29.3 million square meters (m²). The education buildings include preschools, general secondary schools, vocational technical schools and higher education establishments, with an overall estimated area of 20.3 million m². Roughly 55 percent of secondary schools are in rural areas, and 45 percent are in urban areas. The health sector comprises 830 hospitals (with inpatient bed service) that are often large and oversized and about 1,843 outpatient polyclinics spread out through the country with an overall area of 5.3 million m². Administrative buildings are estimated to have a total area of 3.7 million m². The budgets of education and medical institutions are dominated by fixed costs, leaving little space for infrastructure improvements. Public buildings built before 1996 have substantially higher consumption than those built in later periods, and therefore have considerable energy savings potential.

Despite the potential for energy savings in public buildings important barriers exist. These include:

- Legal and regulatory barriers including the difficulty to reallocate expenditure between line items and the fact that the Budget Code does not allow multi-year commitments beyond approved appropriations;
- Incentive barriers as there are public entities that cannot retain energy savings and any lower costs would lead to a corresponding budget reduction;
- Financing barriers as the Budget Code sets many limitations to public entities to borrow. However, public enterprises can borrow from commercial banks, using their assets as collateral, but requires permission to be granted by the government which is provided on a limited basis; and
- Technical barriers as local government agencies have limited experience to undertake and review energy audits, select viable EE measures, assess quality of designs, mobilize financing, and support the implementation and monitoring of EE projects.

The proposed Project presents an opportunity to scale-up EE in public buildings and transition to a sustainable EE

² National Belarus construction norms and rules (SNB 4.02.01-03 and TCP 45-2.04-196-2010)

³ *Belarus - Scaling up energy efficiency retrofit of residential and public buildings: assessment of investment needs, implementation constraints, financing options, and delivery models* (ESMAP, completed in 2015 and updated in 2020)



financing mechanism to address some of the key barriers identified. The project would introduce a mechanism by which achieved energy cost savings would recover part of the EE investment costs and support the financing of additional EE investments. This is an important shift from the current budget-financed approach to a mechanism that would allow to leverage Project resources by capturing and reinvesting achieved energy cost savings, demonstrating the principle of repayment of EE investments from energy cost savings. The Government is facing financial and economic constraints due to the emergency crisis and being able to use a more sustainable approach to finance EE in public buildings from energy savings would be a suitable mechanism, provided its administrative costs are not higher than a grant-based approach. Given the economic situation for the country, building on the concept of using energy savings from the investments to repay for capital costs becomes an even more important model. Eventually, a scaled-up EE in public buildings program could help bring in new equipment suppliers and service companies and thus increase competition, reduce costs, and help stimulate local job creation especially in construction and manufacturing

Relationship to CPF

The proposed project is fully in compliance with the Belarus Country Partnership Framework (CPF) for the FY18-22 period by supporting its objectives: (a) creating opportunities for private sector to grow and for more efficient public investment (Focus Area 1), and (b) improving contribution of infrastructure to climate change management, economic growth and human development (Focus Area 3). Through the Project, the Bank will contribute to decrease energy consumption by providing a sustainable financing mechanism that will repay for investments via energy savings and leverage resources to finance energy efficiency in public buildings. Through the EE investments the Project will help create an enabling environment for private sector involvement, including energy auditors, technical designers, construction firms, and promote small energy service companies. In addition, achieving a scalable model for EE in public buildings will reduce its reliance on imported fossil fuels and would help Belarus enhance its energy independence while achieving climate change benefits.

C. Proposed Development Objective(s)

The project development objective is to reduce energy use in public buildings and develop and launch a sustainable financing mechanism to scale up energy efficiency in the public sector in the context of medium term economic recovery.

Key Results (From PCN)

Progress towards the PDO would be monitored according to the following indicators:

- Projected energy savings in the retrofitted facilities;
- Projected life-time CO2 emission reductions in the retrofitted facilities through energy efficiency investments; and
- Development and implementation of a sustainable financing mechanism for energy efficiency in the public sector

D. Concept Description

The proposed project will include the following project components: (i) EE investments in public buildings and pipeline development; and (ii) project management and capacity building. The project would support the development of a sustainable mechanism, such as the budget capture model to demonstrate energy cost savings and social co-benefits



for financing EE in public buildings. The Energy Efficiency Department (EED) at the State Committee for Standardization (Gosstandart) would be the implementing agency that would work with participating oblasts to finance EE in public buildings at the oblast level and at the republic level.

Component 1: Energy efficiency investments in public buildings and pipeline development (US\$58 million). Under this component, the EED would: (i) support the renovation of educational, health and administrative buildings under a budget capture model; and (ii) prepare related technical services including energy audits, designs, work supervision, and technical and social monitoring before and after the EE investment.

- a. *Component 1(a): EE investment in public buildings (US\$ 56 million).* Under this subcomponent, Participating oblasts would renovate eligible buildings to improve EE performance. EE measures could include installation of thermostatic radiator valves (TRVs), individual heat substations, retrofit of building envelope (including facades, windows, roofs and doors), improvements/replacements of boilers, lighting, as well as renewable energy investments (e.g. roof-top solar PV and solar water heating) if economically justifiable. To be eligible, the public building should meet the following criteria: (i) public ownership of the building; (ii) been built before 1996 and not had a full EE renovation in the past 10 years; (iii) structurally safe; (iv) no plans for office moves, closure, building demolition or selling of building. The Project would seek to ensure minimum technical performance of the renovated buildings and should include a minimum energy savings of 20 percent, an investment cost of at least US\$50,000, but not more than US\$1,000,000, and a maximum simple payback period of under 12 years for the combination of measures.

An energy savings capture model would be developed and demonstrated in public buildings to be retrofitted under the project. The basic concept of the model is that planned EE investments are estimated to reduce energy consumption and related costs by 20 to 40 percent. The energy cost savings would be monitored, verified, captured and reinvested to support EE improvements in additional public buildings. Participating oblasts would sign an agreement with EED that would ensure it to collect the achieved energy savings from the public building in the monetary value amount over an agreed period of time (12 years). The agreement between the oblast and the EED would need to be further discussed with the counterparts during project preparation. The operational procedures and arrangements for the energy saving capture model will be elaborated further once agreed with the Government, but in general would work in the following way:

- *EE renovations:* The implementing entity, EED, will identify, develop and implement EE investments in public buildings to be financed through the IBRD loan proceeds. Through the technical assessments the projected energy savings will be estimated for each public building that would accumulate throughout the payback period after the EE investment is done. Each public building is a budget entity that has its own tracking number under the Oblast Treasury in which separate budget lines are dedicated for all operating purposes including utility payment. As the local budget pays the heating and electricity bills for public buildings, the oblast and MoF would have to agree to provide the energy savings achieved compared to energy consumption before the EE renovation and convey it to a special multi-annual budget line where the implementing agency (EED) would capture the savings and which is currently in the process of identification.
- *Measurement and Verification (M&V):* For each renovated public building, the implementing agency (EED) would assess the energy expenditures before and after the EE renovation and verify the energy savings based on an agreed M&V protocol, to be developed during Project preparation in consultation with the EED, oblasts and MoF.
- *Annual M&V report and capture of energy cost savings in designated account:* The implementing agency (EED) would prepare an annual M&V report to the relevant parent budget entities (oblast or MoF) that



summarizes the verified energy cost savings for all renovated public buildings. A third party would need to review and validate the report, after which the oblast or MoF approves the captured energy cost savings during the payback period. The energy cost savings would be transferred to a multi-annual budget line at the EED level (to be further agreed during project preparation) and would allow the recovery of the EE investment upfront costs. These funds could then be recycled to finance additional public buildings.

- b. *Component 1(b): technical services to support investments (US\$ 2 million).* This subcomponent would support technical work for investments, including: (i) subproject screening, detailed energy audits, technical designs and technical specifications, construction supervision, and technical and social monitoring before and after the EE investments (ii) development of public buildings database and online monitoring system for energy performance that would help implement the M&V framework; and (iii) third-party verification of energy savings. It would also include technical assessments needed for adequate disposal of any hazardous materials from the renovations as well as their actual disposal.

Component 2: Project Management and Capacity Building (US\$ 2 million). This component would support effective implementation and management of the Project, including: (i) PMU staff; (ii) project-related operating costs; and (iii) fiduciary and safeguards capacity. In addition, this component would finance activities to enhance local EE capacity related to developing institutional and implementation arrangements enabling the continued capturing and reinvestments of achieved energy cost savings beyond the Project, capacity building material and trainings targeting local level authorities, audit, design and construction companies, and communication and public outreach activities to help enhance EE awareness by showcasing its benefits and supporting information activities on how to improve EE, including behavior change. The details of the capacity building activities would be further defined during project preparation, as well as identification of concessional financing to support it (e.g. EU, SIDA, or others).

The proposed Project will continue to use the centralized national management model for implementation and monitoring as it has done in the existing WB energy projects. Under these arrangements, the Energy Efficiency Department (EED) of the State Committee for Standardization is the national implementation agency. The EED is the agency responsible for the implementation of main national EE and renewable energy programs and has established a project management unit (PMU) to support the implementation of WB energy projects, including the two ongoing energy sector Bank projects. The PMU would continue to assume the day-to-day responsibilities of implementation and monitoring of the proposed Project, and an assessment of its capacity needs would be done during project preparation to understand what strengthening requirement would be needed.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No
Summary of Screening of Environmental and Social Risks and Impacts	



CONTACT POINT

World Bank

Janina Andrea Franco Salazar, Irina Voitekhovitch
Senior Energy Specialist

Borrower/Client/Recipient

Government of the Republic of Belarus

Implementing Agencies

Energy Efficiency Department of State Committee for Standardization
Mikhail Malashenko
Head
energoeffect@gosstandart.gov.by

RUE 'Belinvestenergosberezhenie' (BIES)
Viktor Knysh
Director
tender@bies.by

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>



APPROVAL

Task Team Leader(s):	Janina Andrea Franco Salazar, Irina Voitekhovitch
----------------------	---

Approved By

Practice Manager/Manager:	Sameer Shukla	20-Apr-2020
Country Director:	Alexander Kremer	01-Jun-2020