



Program Information Document (PID)

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BASIC INFORMATION

A. Basic Program Data

Country Poland	Project ID P170131	Parent Project ID (if any)	Program Name Poland Energy Efficiency in Single Family Buildings Program
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 09-Oct-2019	Estimated Board Date 16-Dec-2019	Does this operation have an IPF component? No
Financing Instrument Program-for-Results Financing	Borrower(s) Republic of Poland	Implementing Agency National Fund for Environment Protection and Water Management (NFOSiGW)	Practice Area (Lead) Energy & Extractives

Proposed Program Development Objective(s)

The Program development objective is to increase energy efficiency of single-family buildings in selected most polluted cities in Poland, strengthening the National Program’s institutional capacity, and enhance its access to commercial financing.

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	3,495.00
Total Operation Cost	3,495.25
Total Program Cost	3,495.00
Other Cost	0.25
Total Financing	300.00
Financing Gap	3,195.25

FINANCING (USD Millions)

Total World Bank Group Financing	300.00
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World Bank Lending

300.00

B. Introduction and Context

Country Context

Poland has been one of the fastest growing economies in Europe. With an average 3.6 percent growth per year between 2007 and 2016, the country has grown faster than its regional peers and converged rapidly with other European Union Member States, achieving 70 percent of the EU's average per capita GDP at the end of 2016. Few middle-income countries have experienced a similar period of broad-based growth. This transition benefited from a consistent set of policies that promoted productivity increases, strengthening institutions and improvements in human capital endowments.

Fast growth has however generated important negative externalities, and the country is now coming to terms with its “grow now and clear later” development trajectory. Despite remarkable strides in decarbonizing its energy sector, serious threats remain, particularly in terms of the deterioration of ambient air quality. Poland is today home to 33 of 50 of the most polluted cities in Europe. The Bank estimated that the cost of air pollution amounts to about US\$31-40 billion per year, equivalent to 6.4-8.3 percent of GDP (2016), and in line with the estimates by the European Commission and the Polish Government (EUR 26-30 billion).

Poor air quality takes a considerable human toll. Respiratory illness caused by pollution result in approximately 44,500 premature deaths in Poland according to the European Environmental Agency. Poland disproportionately contributes to the number of premature deaths in the EU-28, accounting for 11 percent of all premature deaths while only accounting for 7.5 percent of the population. There is a clear recognition among high-level authorities that tackling the problem of air pollution is crucial for enhancing the quality of life, strengthening competitiveness and reinforcing the achievement of objectives of Poland's global climate related commitments.

Poland has come under considerable national and international scrutiny because of air pollution. Although Poland has made considerable progress in reducing air quality pollutants such as SO₂ and NO_x, it has made more limited progress in reducing particulate pollution from coarse and fine particulates (PM₁₀ and PM_{2.5} respectively), leading to non-compliance with EU standards. In early 2018, the European Court of Justice found Poland guilty of failing to meet air quality norms, and in particular for repeatedly failing to meet the EU's daily and annual limits for coarse particulates. Failing remedial actions, the EC could impose financial penalties on Poland.

The current government made the fight against air pollution its top priority. The 2017 Governmental Clean Air Program (CAP) put forward 15 measures structured around three pillars: (i) improving boiler standards; (ii) improving solid fuel standards; (iii) education and awareness; and (iv) supporting and tackling energy poverty.

Sectoral (or multi-sectoral) and Institutional Context of the Program

Poland has made impressive achievement in decoupling energy growth from economic growth but must now deal with serious local and global environmental problems due to its reliance on coal. Between 1987 and 2016, Poland reduced its energy intensity by 30 percent – more than any other country reviewed in IEA's Energy Efficiency Report 2017. Between 2000 and 2016, the shares of renewable energy (RE), mainly biomass and wind, and natural gas in the electricity generation mix more than quintupled, reducing the coal share by 12 percentage points. However, Poland's energy sector faces serious environmental problems, that if not addressed, could jeopardize the country's progress toward sustainability.



In November 2018, the Government of Poland released a draft Energy Policy,¹ which aims to increase energy security of supply by diversifying supply. The strategy's 2030 targets include a) reducing the share of coal generation by 60 percent; b) reaching 21 percent renewable energy gross final energy consumption; c) improving energy-efficiency by 23 percent relative to the 2007 forecasts; d) reducing CO₂ emissions by 30 percent from 1990 baseline. The strategy also foresees the introduction of nuclear energy in 2033.

As per Poland's National Energy Efficiency Action Plan (2017),² the country aims to reduce its primary energy consumption by 13.6 Mtoe over the period 2010-2020.³ Poland is implementing several energy efficiency measures in multi-family buildings and public agencies, industries and SMEs, transport and energy generation and supply, and has an energy efficiency obligation scheme (white certificates). Poland is also committed to renovate annually 3 percent of the total area of heated or cooled government-owned buildings and premises to meet at least the minimum requirements for energy performance in buildings as defined by EU Directives.⁴ Energy efficient investments are implemented by the National Fund for Environmental Protection and Water Management (NFOŚiGW) and its Regional Environmental Protection Funds (WFOŚiGW). Additionally, the Operational Programme Infrastructure and Environment (OPI&E), Regional Operational Programmes (ROPs), as well as BOŚ Bank,⁵ and the Thermomodernisation and Repairs Fund managed by Poland's development state bank Bank Gospodarstwa Krajowego (BGK) also support energy efficiency investments.

The residential sector continues to be the second-largest energy consumer, driven mainly by single family buildings (SFBs). Approximately 50 percent of households (5.4 million households) live in SFBs, which are considered to be a key contributor to emissions of gaseous and particulate matter pollutants (PM₁₀ and PM_{2.5}) through the combustion of fuels (mostly coal, but also biomass and waste) for the purposes of central heating and domestic hot water.

Targeting Single Family Buildings (SFBs) offers significant benefits to achieving EE targets and improving air pollution through specific targeted programs. Under the framework of the European Commission (EC)'s *Catching up Regions* initiative, the World Bank (WB) has since 2017 provided technical assistance to the Government of Poland (GoP) to reduce air pollution through improved EE in SFBs. The WB assessed: (i) the potential benefits and costs of boiler replacement, thermal retrofit, and fuel switching in SFBs; (ii) the investment needs and subsidies required to implement a program to improve energy efficiency and reduce air pollution; and (iii) the potential impacts of a program roll out in the 33 most polluted cities in Poland and the entire country. The study found that the most cost-effective way to reduce both particulate and CO₂ emissions is to couple full thermal retrofits of SFBs with the replacement of non-compliant solid fuel boilers with gas boilers, renewable energy (RE) heating systems, heat pumps, or compliant solid fuel boilers.

¹ Draft "Energy Policy of Poland until 2040" (EPP2040), Ministry of Energy, Warsaw 2018.

² National Energy Efficiency Action Plan for Poland 2017, Rev. 1.6, Ministry of Energy, Warsaw, December 2017, which is in compliance with Article 3(1) of Directive 2012/27/EU.

³ In year 2020, Poland estimates its absolute final energy consumption to be 71.6 Mtoe, and its absolute primary energy consumption to be 96.45 Mtoe, after the realization of its energy savings target.

⁴ Annual report elaborated in accordance with Part 1, Annex XIV of Directive 2012/27 / EU on energy efficiency, Warsaw, April 2018. The renovation of 3 percent of floor space in government owned buildings is in compliance with article 5 paragraph (1) of Directive 2012/27/EU.

⁵ The Bank for Environmental Protection, established in 1997 to support ecological projects, is majority owned by the NFOŚiGW.



Relationship to CAS/CPF

The proposed operation supports the key objectives of the Country Partnership Strategy (CPS) FY19 – FY24. It is fully consistent with the CPF 's focus on institutional strengthening, as well as the priorities listed under the CPF's Pillar 3 on "Resilience to environmental and global threats", in particular its objective 5, "Improve energy efficiency and air quality in selected urban centers". The proposed operation also contributes to Poland's domestic goals to improve energy efficiency and address air pollution and climate change as per its National Development Strategy 2020. The proposed operation would support the World Bank Group's corporate commitment to increasing energy efficiency and addressing climate change and is aligned with its twin goals of poverty reduction and shared prosperity for the bottom 40 percent of the population thorough its focus on the energy poor. The operation meets all three CPF selectivity filters: (i) developing innovative solutions that benefit the poorest and most vulnerable; (ii) catalyzing private sector investments and leveraging additional resources; (iii) contributing to global public goods.

Rationale for Bank Engagement and Choice of Financing Instrument

Poland's authorities singled out air quality as a key priority to enhance its citizens' quality of life, strengthen competitiveness and support Poland's climate related commitments. The proposed Bank's engagement would have: (i) an important public health impact benefiting the poor; (ii) the potential to mobilize and leverage significant private financing resources, in line with the Bank's MFD approach; and (iii) contribute to global climate change mitigation through energy efficiency and emission reductions.

Program for Results was deemed most suitable to address GoP's request for a strong result focus and incentives to institutional improvements. Program for Results (PforR) will incentivize: (i) a sharper focus on the most important results the GoP wants to achieve, such as increased EE and air pollutant emission reduction; (ii) reliance on GoP's own systems and procedures, thus reinforcing the institutional capacity needed for the program to achieve desired results in the long term; and (iii) a focus on output and outcome monitoring and evaluation, including through reliable and credible verification systems.

Other lending instruments were considered but were, at this stage, deemed less suitable. Given the institutional and capacity development objectives, and the need to provide implementation support over the medium term, PforR was deemed preferable to a Development Policy Financing, as it can support strengthening technical, fiduciary and monitoring capacity among the different entities (e.g. NFOŚiGW, WFOŚiGW, commercial banks, and municipalities). The Investment Project Financing (IPF) instrument was also assessed but given the existence of an approved national program in need of development and roll out, the PforR was considered better suited to support it. With most of the funding to support the program will come from other sources (e.g. EC, EIB), PforR allows to maximize leverage by provide a results orientation and efficiency to the use of public funds. and leverage, which will be critical.

C. Program Development Objective(s) (PDO) and PDO Level Results Indicators

Program Development Objective(s)

The Program development objective is to increase energy efficiency of single-family buildings in selected most polluted cities in Poland, strengthening the National Program's institutional capacity, and enhance its access to commercial financing.



PDO Level Results Indicators

The proposed Program is expected to contribute to key results areas to support achieving the goals set in the Clean Air Priority Program (the Government program). These results areas have been identified on the basis of a preliminary assessment of where the WB's results-based support can be of larger value added. The results areas are listed below together with a preliminary, broad list of tentative disbursement linked indicators, which will be refined during preparation:

- Result Area 1: Improving energy efficiency;
- Result Area 2: Strengthening of institutional capacity;
- Result Area 3: Accessing commercial financing.

D. Program Description

PforR Program Boundary

In June 2018 the Polish government launched the Clean Air Priority Program (CAPP) – a PLN 103 billion (EUR 24 billion), 10-year initiative aimed at reducing low stack emissions. Implemented by the National Fund for Environment Protection and Water Management (NFOŚiGW), the CAPP has the specific objective to “improve the energy efficiency of existing single-family housing resources through thermal modernization and upgrading of heating furnaces.”⁶ The program deploys a system of subsidies, tax incentives and targeted loans to help nearly 4 million SFBs households to replace their solid fuel boilers and conduct thermal retrofits. The subsidies are set to vary from 90 percent of investments for households earning under 600 PLN (EUR 140) per month per person, and to decline to 30 percent as income rises and to be substituted with loans. The amount of subsidy may not exceed PLN 53,000 (EUR 12,245). Approximately 60 percent of the funds will go towards grants financing and about 40 percent will be disbursed in the form of repayable loans. The CAPP program has already received 23,500 applications.

NFOŚiGW is developing the National Fund for Energy Efficiency and Anti-Smog (NFEEAS) as the CAPP's key funding instrument. The Bank is providing support to the design of the NFEEAS that will build from the existing CAPP as part of the Catching-Up Regions initiative. The program seeks to serve about 400,000 SFBs each year in order to serve the full target market within the program's 10-year life. The preliminary fund structure would provide a combination of subsidies, financing and technical support to low-, middle- and high-income groups in the target SFBs in the following way:

- For the poorer SFB owners, the proposed program would develop mechanisms to channel subsidies to regional and local partners (WFOŚiGW and municipalities) in combination with selected service providers to help aggregate applications and support implementation of thermo-modernization improvements and heating source upgrades; and
- For middle-income and high-income SFB owners, the program would seek to partner with commercial banks to channel subsidies and offer debt financing along with some technical assistance.

The National Fund would finance poor and non-poor investments in EE (thermo-modernization and boiler replacement) in SFBs through grants and loans. NFEEAS would channel funds to poor SFBs relying on its regional branches, WFOŚiGW, in coordination with the municipalities which would be responsible to identify eligible poor SFBs. Commercial financing instrument and fiscal incentives would be provided to support the non-poor SFBs retrofits (Figure 1). A subsidy would also be provided as an incentive for the middle-income SFBs. The large scale of

⁶ Press release from the National Fund for Environmental Protection and Water Management.



the fund is expected to help transform and expand the market for EE products and bring down the cost of equipment and materials.

The Program supported by the PforR operation is a subset of the CAPP (the overall Government program). The Program's boundaries include:

- The Program's duration is limited to 5 years, versus the envisaged 10 years of the Government program.
- The Program area is limited to selected most polluted cities in the country.
- Program's envelope is estimated to be of EUR 3.1 billion,⁷ vs EUR 24 billion for the overall program covering the entire country.

The Program boundaries respond to specific choice to maximize the Bank's value added. Prioritizing SFBs retrofits in the selected most polluted cities will allow for showcasing results and serve as an example to other localities throughout the country on the benefits of CAPP implementation.

The Program would support the following activities:

- *Improving energy efficiency.* Boiler replacement compliant with new regulation, and thermal retrofits of SFBs would substantially lower the heat load of the dwelling and enable a low capacity efficient boiler to be installed, thereby significantly lowering energy use and CO2 emissions. It would support investments in thermal insulation of building envelope (roof, wall, ground insulation), window replacement, boiler replacement compliant with anti-smog regulations. It would also develop a list of eligible materials and equipment from manufacturers that comply with program requirements.
- *Strengthening of NFOŚiGW capacities to monitor and implement NFEEAS* through implementation support for the interinstitutional coordination, capacity support to key stakeholders, in particular for providing grant financing to the poor SFBs and equipment leasing programs for non-poor SFBs. It will also support the development of delivery approaches for equipment leasing programs for non-poor SFBs offered by the manufacturers/suppliers. Based on discussions with associations of solid fuel boiler manufacturers, and gas boiler and heat pump manufacturers, they are receptive to developing a lease finance scheme.
- *Accessing commercial financing.* NFOŚiGW would on-lent to commercial banks to provide loans to energy end-users and service companies for EE retrofit for non-poor SFBs, that could have lower interest rates or longer tenure to better match the repayment period of thermal retrofits. The participating banks would be responsible for identifying, appraising, and financing eligible investment that meet the criteria in the Operations Manual. However, commercial banks are not keen to support customer prepare additional paperwork which may be needed to receive subsidies or marketing products that may need additional reporting to external agencies or developing additional risk assessment mechanisms related to loans that include subsidy mechanisms. Support would be provided to help develop a product that includes partial subsidies for the middle-income SFBs that can have simplified and effective processes to lower transaction costs while providing comfort to the banks (and government/NFOŚiGW as subsidy provider) that tailored products are channeled only to eligible consumers and projects. It will also provide support to motivate the retail relationship managers to market the EE product for SFBs, provide training on financing EE in SFBs to

⁷ The actual cost to cover the 33 most polluted cities with a population over 100,000 would be EUR 3.1 billion and the actual cost of Project program would be lower and will be determined during Program preparation.



those responsible for deal origination and risk assessment, and undertake aggressive marketing campaigns for the products developed. In addition, an equipment leasing pilot program would be developed for non-poor SFBs for financing of eligible equipment.

E. Initial Environmental and Social Screening

An environmental and social initial screening will be carried out by the Bank task team to identify potential risks as well as opportunities that may be associated with the Program. The proposed Program is likely to have positive social and environmental impacts, due to the benefits of improved energy efficiency and emission reduction of pollutants, and health improvements. The screening will confirm that there are no category A-type activities in the Program that could cause significant harm to environment. An environmental and social systems assessment (ESSA) will be conducted to identify the adequacy of the environment and social systems during preparation. The Program will build from the experiences from existing national and local policies and regulations to ensure use of environmentally friendly technology, social inclusion, participation, transparency and adequate environmental and social management system is in place.

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