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Report No: PAD4081

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROGRAM APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF EUR 250.0 MILLION
(US\$291.3 MILLION EQUIVALENT)

TO THE

REPUBLIC OF POLAND

FOR A

CLEAN AIR THROUGH GREENING RESIDENTIAL HEATING PROGRAM-FOR-RESULTS

November 12, 2021

Energy and Extractives Global Practice
Europe and Central Asia Region

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CURRENCY EQUIVALENTS
(Exchange Rate Effective October 31, 2021)

Currency Unit = Polish Zloty (PLN)

PLN 3.9605 = US\$1

US\$0.2525 = PLN 1

US\$1.1653 = EUR 1

FISCAL YEAR

January 1 – December 31

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ABBREVIATIONS AND ACRONYMS

ASR	Anti-Smog Resolution
BGK	<i>Bank Gospodarstwa Krajowego</i>
CAPP	Clean Air Priority Program
CBA	Central Anti-Corruption Bureau
CCAP	Climate Change Action Plan
CEEB	Central Registry for Emissions in Buildings
CO ₂	Carbon dioxide
CoP	Conference of Parties
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
CuRI	Catching-up Regions Initiative (EC)
CVA	Credible verification agent
DLI	Disbursement-Linked Indicator
DLR	Disbursement-Linked Results
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
ESSA	Environmental and Social Systems Assessment
EU	European Union
FM	Financial Management
FSA	Fiduciary Systems Assessment
GDP	Gross domestic product
GHG	Greenhouse gas
GoP	Government of Poland
GRID	Green, Resilient and Inclusive Development
GRS	Grievance Redress Mechanism
ICT	Information and Communication Technology
IT	Information Technology
kgtoe	Kilograms of oil equivalent
KNF	Polish Financial Supervision Commission (<i>Komisja Nadzoru Finansowego</i>)
LTRS	Long-Term Building Renovation Strategy
M&E	Monitoring and evaluation
MIS	Management information system
MJ	Mega joules
MoCE	Ministry of Climate and Environment
MoF	Ministry of Finance
MoFSP	Ministry of Family and Social Policy
MoU	Memorandum of Understanding
NAPP	National Air Protection Program
NBP	National Bank of Poland

NDC	Nationally Determined Contribution
NECP	National Energy and Climate Plan
NFOŚiGW	National Fund for Environmental Protection and Water Management
NGO	Nongovernmental Organization
NIK	<i>Najwyższa Izba Kontroli</i> (Polish Supreme Audit Office)
NO _x	Nitrogen oxides
NRA	National Revenue Administration
OPRC	Operational Procurement Review Committee
PAP	Program Action Plan
PBA	Polish Banking Association
PDO	Program development objective
PforR	Program-for-Results
PIT	Personal Income Tax
PM ₁₀	Particulate matter (10 µm or less)
PM _{2.5}	Particulate matter (2.5 µm or less)
PPP	Purchasing Power Parity
PPL	Public Procurement Law
PV	Photovoltaic
RE	Renewable energy
RRF	Recovery and Resilience Facility
SFB	Single-Family Building
SO ₂	Sulfur dioxide
SSP	Stop Smog Program
TFP	Total Factor Productivity
TOR	Terms of Reference
TRF	Thermo-Modernization and Renovation Fund
WBG	World Bank Group
WFOŚiGW	Regional Fund for Environmental Protection and Water Management
WHO	World Health Organization
ZUM	<i>Listy zielonych urządzeń i materiałów</i> (List of Eligible Equipment and Materials)



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**DATASHEET****BASIC INFORMATION**

Country(ies)	Project Name	
Poland	Clean Air Through Greening Residential Heating Program	
Project ID	Financing Instrument	Does this operation have an IPF component?
P170131	Program-for-Results Financing	No

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Contingent Emergency Response Component (CERC)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Small State(s)	<input type="checkbox"/> Conflict
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)	
Expected Project Approval Date	Expected Closing Date
10-Dec-2021	31-Mar-2027

Bank/IFC Collaboration

No

Proposed Program Development Objective(s)

The Program Development Objectives are to reduce energy use and air pollution emissions from heating sources in Single Family Buildings.

Organizations

Borrower :	Republic of Poland
Implementing Agency :	Ministry of Climate and Environment
Contact:	Agnieszka Sosnowska



Title: Director, Department of Air Protection and Climate
Telephone No: 48223692327
Email: agnieszka.sosnowska@klimat.gov.pl
Implementing Agency : National Fund for Environment Protection and Water Management (NFOSiGW)
Contact: Marta Babicz
Title: Director, Department of External Funds
Telephone No: 0048224590252
Email: marta.babicz@nfosigw.gov.pl

COST & FINANCING**SUMMARY**

Government program Cost	5,713.74
Total Operation Cost	5,714.47
Total Program Cost	5,713.74
Other Costs	0.73
Total Financing	5,714.47
Financing Gap	0.00

Financing (USD Millions)

Counterpart Funding	3,965.51
Borrower/Recipient	2,993.60
Local Beneficiaries	971.91
International Bank for Reconstruction and Development (IBRD)	291.30
Commercial Financing	1,457.66
Unguaranteed Commercial Financing	1,457.66

Expected Disbursements (USD Millions)



Fiscal Year	2022	2023	2024	2025	2026	2027
Absolute	89.30	63.66	25.61	30.66	35.98	46.10
Cumulative	89.30	152.96	178.57	209.23	245.20	291.30

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Environment, Natural Resources & the Blue Economy, Finance, Competitiveness and Innovation, Poverty and Equity

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Low
10. Overall	Moderate

COMPLIANCE

Policy

Does the program depart from the CPF in content or in other significant respects?

☐ Yes ☒ No



Does the program require any waivers of Bank policies?

☐ Yes ☒ No

Legal Operational Policies

	Triggered
Projects on International Waterways OP/BP 7.50	No
Projects in Disputed Areas OP/BP 7.60	No

Legal Covenants

Sections and Description

Schedule 2, Section I.A.1. The Borrower, through MoF and MoCE, via NFOŚiGW, for their Respective Parts of the Program shall unless otherwise agreed with the Bank, be responsible for the overall implementation, monitoring and evaluation of the Program, the consolidation of the Program's reports, the preparation of financial statements, and the submission of the verification reports to the Bank as per the terms set out in Section III.B.1(b)(ii) of this Schedule.

Sections and Description

Schedule 2, Section I.A.2. The Borrower shall establish, not later than three months after the Effective Date, and thereafter maintain throughout Program implementation, a high level Coordination Committee ("Coordination Committee"), comprised inter alia of representatives of the MoF, MoCE, Ministry of Family and Social Policy ("MoFSP"), Ministry of Development and Technology ("MoDT"), NFOŚiGW, and other relevant bodies, to be chaired by the Plenipotentiary of the Prime Minister for Clean Air, and which will, unless otherwise agreed with the Bank, be responsible for strategic oversight and guidance under the Program, coordination of relevant air quality and energy efficiency programming, review of policy and regulatory gaps, monitoring of indicators, and coordination of resources, and review of Program reports, all under terms and conditions acceptable to the Bank.

Sections and Description

Schedule 2, Section I.A.3. The Borrower through MoF and MoCE, via NFOŚiGW, shall maintain, throughout the implementation of their Respective Parts of the Program, the functions, staffing and resources appropriate to fulfill their respective functions under the Program (including technical, social and environmental safeguards, monitoring and fiduciary functions) as well as provide inputs for the Program reports referred to in Section III of this Schedule, not later than 60 days after the end of each calendar semester.

Sections and Description

Schedule 2, Section I.B.1. The Borrower, through MoF and MoCE, via NFOŚiGW, shall ensure their Respective Parts



of the Program Action Plan is carried out, in accordance with the schedule set out in the said Program Action Plan in a manner satisfactory to the Bank.

Sections and Description

Schedule 2, Section III.B.1. The Borrower, through MoCE, via NFOŚiGW, with regard to the subsidies Part of the Program shall: (a) no later than three (3) months after the Effective Date, or such later date as agreed by the Bank, appoint and thereafter maintain, throughout the implementation of the Program, one or more credible verification agents, as needed, with qualifications and experience and under terms of reference acceptable to the Bank (“Verification Agent”), to verify the data and other evidence supporting the achievement of one or more “Disbursement Linked Results” or “DLRs” as set forth in the table of Section IV.A.2 of this Schedule; and (b) (i) ensure that each Verification Agent carries out verification and processes in accordance with the Verification Protocol; and (ii) submits to the Bank the corresponding verification reports in a timely manner and in form and substance satisfactory to the Bank.

Conditions



I. STRATEGIC CONTEXT

A. Country Context

1. **Before the COVID-19 crisis, Poland had sustained uninterrupted growth for nearly three decades and achieved high-income status in less than 15 years.** Few middle-income countries have witnessed such consistent broad-based and inclusive growth—both fast and stable (with growth averaging 3.7 percent in the post global-financial crisis period). Growth over this period had a positive impact on poverty reduction and shared prosperity: the share of the population living in poverty (at 2011 purchasing power parity [PPP] US\$5.50 per person per day, the international poverty line corresponding to upper-middle-income countries) declined from 9.4 percent in 2005 to 2.6 percent in 2018, despite the global financial crisis, and the share of the population under the national¹ poverty line declined between 2008 and 2019. Stronger than average growth in incomes of the bottom 40 fed into a positive shared prosperity coefficient and declining income inequality statistics. This inclusive growth was supported by a consistent set of policies, including those for European Union (EU) accession and membership, which fostered productivity, strengthening of institutions, and investment in human capital; encouraged entrepreneurship; and emphasized sound macroeconomic management.
2. **The COVID-19 crisis pushed the Polish economy into recession in 2020 and the response to the crisis has narrowed the fiscal space to cushion future shocks.** Output contracted for the first time in nearly three decades (by 2.5 percent in 2020). The Anti-Crisis Shield, the large support package rapidly deployed to support households and firms through exceptional stimulus and accommodative monetary policy, moderated impacts on unemployment, incomes, and consumption and protected viable jobs and firms. Although household impacts were diminished by support measures, 30 percent of households reported declines in incomes at the height of the first wave of lockdowns and poor working households have been vulnerable to employment impacts, resulting in projected poverty increases in 2020 and poverty rates expected to remain above 2019 levels until at least 2023. The unprecedented policy response, combined with falling tax revenues, has narrowed available space for further fiscal support. The general government budget deficit has increased to 7 percent of gross domestic product (GDP) in 2020 from 0.7 percent the previous year. The general government debt (according to the EU definition) is estimated to have increased by 11.9 percentage points in 2020 to 57.5 percent of GDP and is expected to stabilize this year before declining starting with 2022, as the general government deficit is expected to narrow to 5 percent of GDP in 2021, and to close to 3 percent of GDP in 2022. Debt levels are significantly higher than those projected in the 2019 Convergence Programme, in which the general government debt-to-GDP ratio was expected to decrease from 48.9 percent of GDP in 2018 to 40.6 percent of GDP by 2022.
3. **Medium-term growth prospects will be shaped by the path and timeline of recovery from the COVID-19 pandemic and broader structural constraints linked to labor force dynamics and productivity drivers.** Higher levels of private investment, an improved innovation ecosystem, and further upgrading of global value chains are key to supporting higher productivity and growth going forward. With deteriorating demographics and the rollback in the statutory retirement age, the shrinking workforce will feed into a more than doubling of the old age dependency ratio by 2060 that will put pressure on health services and pension system finances. In addition, signs of emerging skill mismatches point to potential misallocation of labor with adverse effects for productivity. Total Factor Productivity (TFP) growth in Poland has slowed significantly after the global financial crisis, falling from an average of 2.6 percent over 1997–2007 to 1.4 percent on average over 2010–2019. Before 2008, strong TFP growth was supported by

¹ Statistics Poland. 2020. Economic poverty rates in Poland in 2019.



the rapid institutional and structural transformation and by Poland's integration into the EU economic space and European supply chains. Over the medium term, growth is expected to recover at a robust pace following the COVID-19 crisis, with growth accelerating to 4.5-4.7 percent over the 2021-2022 period, and then converge to potential growth rates of close to 3 percent, supported by an acceleration in investments, including EU-funded investments (including from the Next Generation EU); and marginal TFP gains.

4. **Poland's development path still faces vulnerabilities.** Consolidating gains and addressing the complex challenges of the future will require strong institutions. The Systematic Country Diagnostic (Report No. 117802-PL) assesses Poland's most critical institutional constraints and identifies priorities where targeted support could further boost shared prosperity in a sustainable manner. First, Poland's dramatic demographic shifts, combined with the rapid pace of global technological change, call for effective institutional solutions. Second, as overall income levels continue to converge to those of the EU, it will be important to address risks to increasing inequality. Especially significant are the disparities between regions and with local communities where needs are the greatest and institutional capacity is relatively weak. Multiple regions in Poland are among the 20 poorest in the EU. Third, sustainable management of natural resources, including water and air quality management, is fundamental to the well-being of Poland's citizens. Accelerating the transition to a low-emissions economy will help spur innovation and help increase new, green employment opportunities, but this will require strong institutions and public and private financing to deliver results.

B. Sectoral (or Multi-Sectoral) and Institutional Context

Energy Transition

5. **Poland remains one of the most energy inefficient and carbon-intensive countries in Europe.** Poland has made impressive achievements in decoupling energy growth from economic growth, increasing its GDP sevenfold since the 1990s while its energy intensity declined by 56 percent. Despite this impressive accomplishment, it remains one of the five most energy-intensive member states in the EU, with its energy intensity almost double that of the EU-27 average (232 kg of oil equivalent versus 121 kg of oil equivalent per EUR 1,000 of GDP²). Its greenhouse gas (GHG) emissions intensity of energy consumption is the eighth highest in the EU-27, about 75 percent more than the EU average.³ Households are the second largest energy users, with about 26.5 percent of total final energy consumption, or around 19.90 Mtoe per year⁴, only behind the transport sector (28.5 percent, 21.4 Mtoe per year), and are followed by the industrial (21.1 percent, 15.84 Mtoe per year) and commercial (10.7 percent, 8.03 Mtoe per year) sectors. At the base of Poland's carbon intensity is the country's heavy dependence on coal. Significant amounts of coal are used in residential and commercial heating and in industry and power production. Despite efforts to reduce coal mining over last two decades, coal remains the most important primary energy fuel with its share in electricity above 70 percent.⁵ Yet, since 1990 the share of renewable energy (mainly biomass and wind) has grown fivefold, and its growth is expected to continue. Polish coal is increasingly expensive to extract, the financial sustainability of local mines in the short and long term is

² Eurostat 2017 data.

³ 278 g versus 160 g of CO₂ per US\$ (2010 PPP), World Bank statistics (2016).

⁴ International Energy Agency 2017 data.

⁵ Poland remains the largest hard coal producer in the EU, extracting 63.4 million tons of hard coal and 58.5 million of tons of lignite in 2018 alone. Electricity and heat account for the largest share of coal use in the country, at about 71 percent (35 Mtoe in 2014), followed by the residential sector (13 percent) and industrial sector (8 percent). World Bank. 2019. *Air Quality Management - Poland*. Report AUS0000585.



rapidly faltering, the country is importing increasingly more coal from abroad (mainly the Russian Federation), and coal-fired power plants are struggling to make a profit while keeping energy prices for households within politically acceptable limits. Demographic shifts and tight labor markets, both in coal regions of Poland and in the rest of the country, make it more difficult for mining companies to retain new workers. A phaseout of coal is inevitable—the question is at what pace and what can be done to minimize the adverse impacts of this transition.

6. **The Government of Poland (GoP) has made clean energy and decarbonization a cornerstone of its energy policy (table 1).** In line with the EU's energy and climate targets for 2030,⁶ Poland established a 10-year integrated National Energy and Climate Plan (NECP)⁷ for 2021–2030, which includes a target of 23 percent renewable energy and improving energy efficiency by 23 percent (from 2007 levels). On December 11, 2020, the EU member states, including Poland, agreed on a joint Nationally Determined Contribution (NDC) (EU NDC Update), which included a commitment to reduce GHG emissions by 55 percent (of 1990 levels) by 2030.⁸ In January 2021, the GoP released its energy strategy for 2040, which includes pillars for a just transition, zero-emission energy systems, and improved air quality, which include measures to scale up renewable energy (solar photovoltaic [PV] and offshore wind) to 39 percent, shift to low-/no-emission buildings and housing (including electrification and decarbonization of heating), and efforts to decarbonize gas and heating systems. The latter includes a goal to increase the amount of decarbonized gas (hydrogen and biogas) in the existing natural gas networks by at least 10 percent by 2030. The Ministry of Climate and Environment (MoCE) also announced plans to phase out coal in the residential heating sector, through a ban of coal use in urban areas (2030) and rural areas (2040); phase out coal mining by 2049; and reduce coal-based power generation from 74 percent today to 56 percent (2030) and 11–28 percent (2040). On April 21, 2021, the GoP joined other EU members states in enshrining the EU's 2050 climate neutrality targets in legislation. The European Climate Law will make EU-wide decarbonization objectives a legal obligation for all member states, including Poland, and will ensure that their level of effort is aligned with the Paris Agreement.

Table 1. Key Clean Energy Indicators and Commitments

	2019	2030	2040	% Change
Renewable energy (% of total energy use)	11.1	23.0	28.5	+157
<i>Renewable energy for electricity</i>	<i>14.0</i>	<i>32.0</i>	<i>39.7</i>	<i>+184</i>
<i>Renewable energy capacity (GW)</i>	<i>9.1</i>	<i>11.9</i>	<i>24.0</i>	<i>+164</i>
Energy efficiency improvement (%)	0.0	23.0	n.a.	+23
GHG emission reductions (%)	0.0	55.0	n.a.	–55
Coal-based power generation (%)	74.0	56.0	11–28	–62–85

7. **Space heating is a critical pillar of the decarbonization agenda for Poland.** About 85 percent of single-family buildings⁹ (SFBs) rely on coal and/or firewood, as the main fuel for their heating, amounting

⁶ Key EU targets for 2030: 40 percent reduction in GHG emissions, 32 percent share for renewable energy, and 32.5 percent improvement in energy efficiency.

⁷ Poland's NECP for 2021–2030. <https://www.gov.pl/web/klimat/national-energy-and-climate-plan-for-the-years-2021–2030>.

⁸ Update of the NDC of the EU and its member states, EU Communication (14222/1/20, Rev 1), Council of the European Union, December 18, 2020.

⁹ For this Program Appraisal Document and the Clean Air Priority Program (CAPP), a single-family building in Poland is defined in accordance to the GoP's Building Law of July 7, 1994: a detached building or a semi-detached, terraced or group building for meeting housing needs, constituting a structurally independent whole in which not more than two dwellings or one residential and commercial premises with a total area not exceeding 30 percent of the total area of the building is permitted.



to about 4 million coal-fired boilers (which collectively consume more than 9 billion tons of coal per year). Thus, the Government's flagship Clean Air Priority Program (CAPP), which promotes solid fuel boiler replacement and thermal renovations of SFBs, is included in the NECP as a key policy and program that contributes to its decarbonization ambition and its 2030 targets for energy efficiency and GHG emission reductions.¹⁰ The CAPP also supports the Government's ambitions to reduce energy poverty, through higher subsidy levels to low-income households and energy saving through thermal modernization. Under the CAPP, no investments will be made in energy infrastructure (for example, gas or district heating network expansion), which may lead to potential 'lock-in' or 'stranded assets' but rather on replacing individual household heating systems, which may only have a 10–15-year operational life. Thus, such investments would be in line with the Government's announcement to phase out coal boilers in urban areas by 2030 and in rural areas by 2040. By 2030, as more renewables are introduced and some of the coal assets are retired, the grid will become cleaner and it is expected that the subsequent generation of heating equipment (for example, heat pumps, district heating based on green hydrogen, and so on) will be more available and affordable.

8. **The Government has also worked to establish a portfolio of programs and a suitable institutional framework to support the secondary legislation and energy efficiency targets.** The GoP is implementing several energy efficiency programs in multifamily buildings and public agencies, industries and small and medium enterprises, and transport and energy generation and supply and has an energy efficiency obligation scheme (white certificates) for energy suppliers. Poland is also committed to renovate 3 percent of government-owned buildings annually to meet the minimum requirements for energy performance in buildings as defined by the EU Directives.¹¹ Energy-efficient investments are implemented by the National Fund for Environmental Protection and Water Management (NFOŚiGW) and its Regional Environmental Protection Funds (WFOŚiGWs). Additionally, the Operational Programme Infrastructure and Environment; Regional Operational Programmes; BOŚ Bank¹²; and the Thermo-modernization and Renovation Fund (TRF) managed by Poland's development bank, *Bank Gospodarstwa Krajowego* (BGK), support energy efficiency investments. Such initiatives dovetail into the EU's broader agenda of its Green Deal, A Renovation Wave for Europe,¹³ and Energy Transition by contributing to a substantial reduction in coal use in the country.

9. **The World Bank Group has supported Poland in its ambitious energy transition through technical assistance and convening partners to catalyze complex reforms.** From 1998 to 2006, the World Bank provided about US\$700 million to support closure of about 19 percent of coal mining capacity and social protection programs supporting coal miners. Since then, dialogue on a new phase of coal sector transition has been ongoing with various coal regions—Silesia, Lower Silesia, Greater Poland, and Lesser Poland—which have been active participants in the European Commission (EC) 'Coal Regions in Transition Platform' meetings. With support from the EC, the World Bank is delivering a technical assistance project with three of Poland's coal regions—Silesia, Lower Silesia, and Greater Poland—to improve capacity and knowledge of various levels of government in preparing for a managed energy transition in Polish coal regions. Advice and knowledge will include topics such as land reclamation and repurposing, governance

¹⁰ GoP. 2020. National Energy and Climate Plan.

¹¹ 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.

¹² The Bank for Environmental Protection, established in 1997 to support ecological projects, is majority owned by NFOŚiGW.

¹³ A Renovation Wave for Europe—greening our buildings, creating jobs, improving lives—is an initiative launched by the EC on October 14, 2020, that aims to at least double renovation rates to improve the energy performance of buildings in the next 10 years and make sure renovations lead to higher energy and resource efficiency.



arrangements, and the future of jobs. The World Bank also worked with the Government to develop an energy transition plan (2018), presented at the Conference of the Parties (COP 24, 2018) in Katowice, which showed that Poland could achieve the EU decarbonization targets while still maintaining acceptable levels of economic growth and job creation. Under the framework of the EC's Catching-up Regions Initiative (CuRI), the World Bank has been providing technical assistance since 2017 to the GoP to reduce air pollution through improved energy efficiency heating systems and thermal renovations in SFBs. The World Bank assessed the potential benefits and costs of boiler replacement, thermal retrofit, and fuel switching in SFBs and the investment needs and subsidies required to implement a program to improve energy efficiency and reduce air pollution. The analysis was conducted with an inclusion lens to identify the population sub-groups that require the greatest subsidies and technical support to make the transition. The study found that the most cost-effective way to reduce both particulate and CO₂ emissions is to couple thermal retrofits of SFBs with the replacement of noncompliant solid fuel boilers with more efficient boilers preferably using cleaner fuels such as natural gas, renewable energy (for example, biomass and geothermal), or electric heat pumps. The International Finance Corporation and Multilateral Investment Guarantee Agency remain active in Poland and continue to explore the potential to support the GoP to develop its renewable energy markets, including offshore wind resources.

Air Quality Challenges

10. **Poland has come under considerable national and international scrutiny because of air pollution.** Poland has 36 of the 50 most polluted cities in the EU¹⁴ and, as a result, many citizens are exposed to high levels of ambient air pollution, notably fine particulate matter that contributes to respiratory illnesses including lung cancer, chronic obstructive pulmonary disease, ischemic heart disease, stroke, and respiratory illness.¹⁵ According to the EEA, respiratory illness caused by exposure to fine particulate matter result in approximately 46,300 premature deaths in Poland.¹⁶ Poland disproportionately contributes to the number of premature deaths attributed to PM_{2.5} pollution in the EU-27, accounting for 12.2 percent of all premature deaths while only accounting for 7.5 percent of the population. A 2019 World Bank report estimated that the cost of ambient air pollution related to mortality and morbidity amounts to about US\$31–US\$40 billion, equivalent to 6.4–8.3 percent of GDP in 2016.¹⁷ While Poland has made progress in reducing air quality pollutants such as SO₂ and NO_x, exceedances of limit values of coarse and fine particulate matter (PM₁₀ and PM_{2.5}, respectively)¹⁸ and benzo(a)pyrene in the winter season remain a serious problem, despite observed reductions in the emission of particulate matter precursors.¹⁹ Annual ambient concentrations of PM₁₀ and PM_{2.5} in Polish cities often exceed the maximum levels allowed under EU law and the more stringent WHO air quality guideline value (PM₁₀

¹⁴ WHO (World Health Organization). 2018. WHO Global Ambient Air Quality Database (update 2018).

¹⁵ EEA (European Environment Agency). 2019. *Healthy Environment, Healthy Lives: How the Environment Influences Health and Well-being in Europe*. EEA Report No. 21/2019.

¹⁶ EEA. 2019. *Air Quality in Europe - 2020 Report*. Luxembourg: Publications Office of the EU; ISBN 978-92-9480-088-6, ISSN 1977-8449, doi: 10.2800/822355. In Poland, 46,300 premature deaths in 2018 were attributable to PM_{2.5} exposure according to the EEA, while 1,900 and 1,500 were attributed to NO₂ and O₃ exposure (EEA 2020). Poland disproportionately contributes to the number of premature deaths attributed to PM_{2.5} and O₃ exposure in the EU-28, accounting for 12.2 percent and 7.8 percent of all premature deaths while only accounting for 7.5 percent of the population; however, it less than proportionately contributed to 3.5 percent of all EU-28 deaths from NO₂.

¹⁷ World Bank. 2019. *Air Quality Management in Poland, Final Report*. World Bank Report AUS0000585.

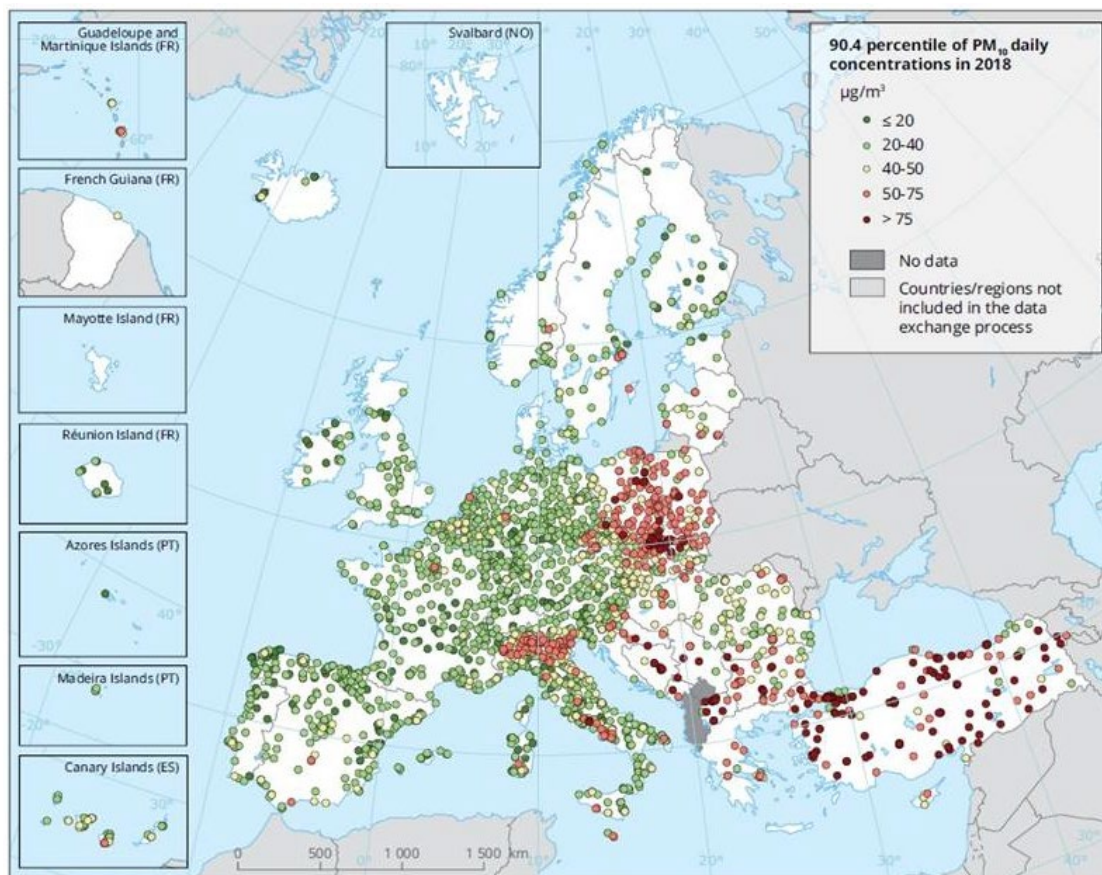
¹⁸ PM₁₀ = Particulate Matter (10 µm or less); PM_{2.5} = Particulate Matter (2.5 µm or less)

¹⁹ Główny Inspektor Ochrony Środowiska (Polish Chief Inspector of Environmental Protection). 2018. *Condition of the Environment 2018. Report on Poland*. Environmental Monitoring Library, Warsaw.



depicted in figure 1). Failing to meet remedial actions could result in the EC imposing financial penalties on the country.

Figure 1. Concentration of PM₁₀ in Europe (2018) - Daily Limit Value



Source: EEA (2020) Report No 09/2020.

Note: Observed concentrations of PM₁₀ in 2018. The map shows the 90.4 percentile of the PM₁₀ daily mean concentrations, representing the 36th highest value in a completed series. It is related to the PM₁₀ daily limited value, allowing 35 exceedances of the 50 µg/m³ threshold over one year. Dots in the last two-color categories indicate stations with concentrations above this daily limit value. Only stations with more than 75 percent of valid data are included in the map.

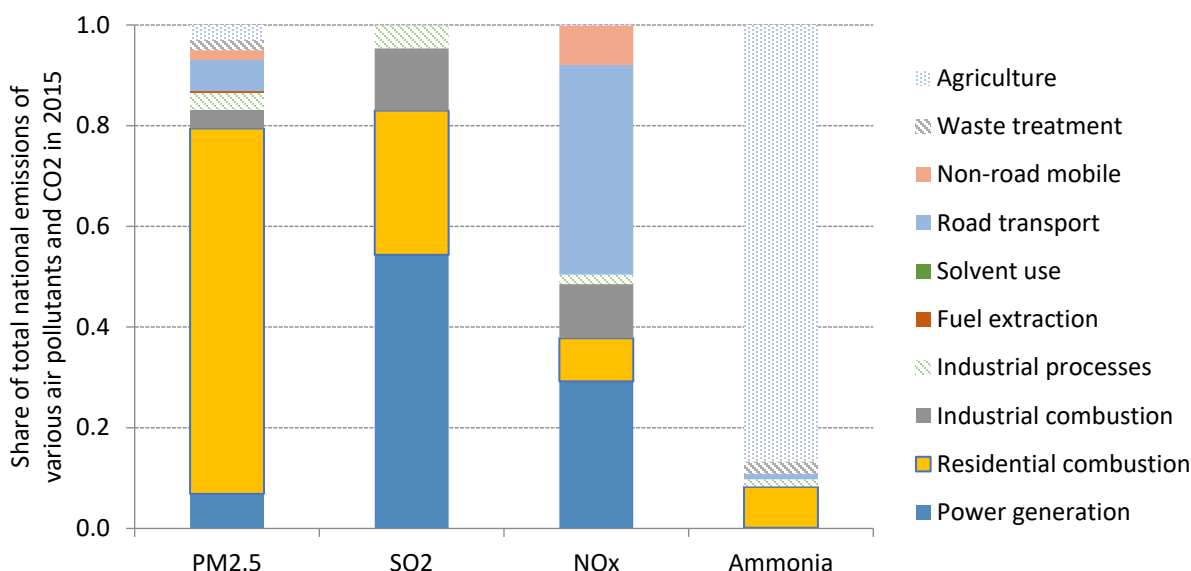
11. **Residential buildings, and among them SFBs, are the largest contributor to ambient air pollution in Poland.** Two air quality management assessments²⁰ found that ambient concentrations of particulate matter are significantly higher during winter months and during evening hours and weekends, because of the burning of highly polluting solid fuels (for example, coal, biomass, and waste) in small inefficient boilers for heating SFBs. Residential heating is the biggest source of PM_{2.5}, contributing just under 80 percent of total emissions (figure 2), and tackling this sector has been the most challenging. Additional important contributors to ambient air pollution include energy, transport, transboundary, industry, and agricultural sources, though pollution from these sectors is more evenly, spatially, and temporally distributed. The energy sector continues to be an important source of SO₂ and NO_x, and transport a source

²⁰ World Bank. 2019. *Air Quality Management in Poland, Final Report*. World Bank Report AUS0000585 and World Bank. 2020. *Functional Review of Air Quality Management*.



of NO_x, although SO₂ and NO_x have decreased by 80 percent and 30 percent, respectively, since 1990 and are no longer considered to be widespread problems across the country. In southern Poland, transboundary sources contribute to PM_{2.5}, reaching more than 60 percent in the Śląskie *voivodeship*. To enhance air quality outcomes, collaborative approaches at the regional level are needed to complement domestic measures. Further measures are also needed to address ammonia emissions from agriculture and emissions from industry. The air quality assessments noted the limitations in national emissions inventories related to (a) real-life emissions, (b) activity statistics related to the use of coal wastes and noncommercial biomass in stoves and boilers, and (c) burning of waste materials in SFBs.

Figure 2. Share of Sector Contributions to Emissions of the Main Air Pollutants in Poland in 2015



Source: World Bank (2019) Poland Air Quality Management Report; Report No AUS0000585 (figure 3.6).

12. **In recent years, the Government has increased its commitment to improving air quality, as articulated in Poland's National Air Quality Plan.** A Clean Air Program with 15 actions agreed by the Council of Ministers in 2018 include the introduction of standards for solid fuels and solid fuel boilers, improved air quality monitoring, education campaigns, vehicle inspection programs, tax and subsidy provisions for cleaner fuels and electric vehicles, and so on. This includes the CAPP, which seeks to support SFBs to switch to cleaner fuels and more energy-efficient building materials and heating systems, and regional anti-smog resolutions (ASRs), which are now in force in 14 of the 16 regions with two more to be adopted by 2023. In June 2020, the newly formed MoCE announced a green investment package of PLN 7.8 billion (US\$1.97 billion) to support clean energy, including renewable energy, cogeneration, energy efficiency, electric vehicles, and other measures. Poland's growing car fleet is the oldest and sixth largest in the EU, with older cars lacking adequate emission controls, particularly in cities or areas with high density of transport networks.²¹ Measures to reduce emissions from transportation are articulated in the Clean Transport Package and include support for green public transportation and a focus on electric vehicles: by 2023, Poland's state-owned ElectroMobility SA²² will introduce two electric vehicle models to

²¹ World Bank. 2019. *Air Quality Management in Poland, Final Report*. World Bank Report AUS0000585.

²² ElectroMobility SA was established in October 2016 by four electric power companies to promote electric vehicles by developing partnerships, conducting design competitions, providing technical know-how, and so on to build modern vehicles for the Polish market.



support the Government's plans to have 1 million electric vehicles on the road by 2025. The country has also introduced regulations that aim to curb ammonia and PM₁₀ emissions from agriculture (for example, low-emission fertilizer standards, ban on open-field burning, and promotion of organic fertilizers) and practices (for example, livestock feeding and low-emission animal husbandry systems). And a series of measures are in place to limit emissions from industry, including fuel standards, fuel switching, and air pollution control equipment.²³

13. The transition of the residential heating sector from coal to cleaner heating fuels has the potential to contribute toward improved air quality, inclusion outcomes through reduced energy poverty and greater thermal comfort of poorer households, and the 2030 energy and climate targets (see paragraph 6). The Polish building stock consists of more than 6.3 million structures,²⁴ of which about 308,000 are nonresidential (public and commercial), 535,000 are multifamily apartment buildings, and the remaining 5 million (83 percent of the building stock) are SFBs.²⁵ Poland has already achieved significant success in thermal modernization of multifamily buildings through the Thermo-Renovation and Repairs Fund administered by the BGK since 1999,²⁶ but support to SFBs has been historically limited. Approximately half (52 percent) of the population live in SFBs, or about 19.6 million people; 16 percent of this population is considered to be at risk of poverty compared to 10 percent of the population living in multifamily buildings.²⁷ About 85 percent of SFBs rely on coal and/or firewood, as the main fuel for their heating, amounting to about 4 million coal-fired boilers (which collectively consume more than 9 billion tons of coal per year). About 29 percent of buildings have boilers that are more than 10 years old, with 3 million of these installations being manually fed boilers, an outdated technology which leads to significant air pollution.²⁸ About one-third of SFBs are located in urban areas and two-thirds are in rural communities. About 80 percent of the estimated 5 million SFBs were constructed before 1990, when even basic energy efficiency measures, such as insulation, were rarely used; this contributes to substantial energy waste and inadequate thermal comfort, the latter being reported by 11 percent of SFB owners. The final energy consumption for space heating and domestic hot water for these buildings is high (69 percent and 15 percent, respectively) and ranges from 125 to 300 kWh/m² or more.

Factors Influencing the Residential Heating Transition

14. Households living in SFBs and using solid fuel heat sources are more likely to be at risk of poverty and are disproportionately likely to be energy poor. Households living in SFBs in need of heating upgrade or thermal modernization in Poland are more likely to be at risk of income poverty (using the at risk of poverty concept²⁹) than those living in multifamily buildings: 21 percent of this population is at risk of poverty compared to a population average of 15 percent, and approximately 60 percent of those who live in SFBs in need of heat source upgrades and thermal retrofit are from the bottom 40 percent of the income distribution. These households are more likely to live in rural areas in aging housing stock, and 41 percent

²³ MonitorPolish. 2019. "Resolution No. 34 of the Council of Ministers of April 29, 2019, on the adoption of the National Air Pollution Control Program." Warsaw, June 21, 2019.

²⁴ Statistics Poland 2013.

²⁵ 480,000 out of the total 6.3 million structures are listed as uninhabited.

²⁶ World Bank. 2018. *Fighting Smog: Energy Efficiency and Anti-Smog in Single Family Buildings in Poland*. Catching up Regions 2 Report.

²⁷ World Bank analysis using Household Budget Survey, 2018 and Energy Survey, 2018.

²⁸ Rynska, Elzbieta, Urszula Kozminska, Kinga Zinowiec-Cieplik, Joanna Rucinska, and Barbara Szybinska-Matusiak. 2018. *Design Solutions for nZEB Retrofit Buildings*. IGI Global.

²⁹ Using the 'at risk of' poverty concept, where the poverty line is defined as 60 percent of the national median adult equivalized income. Statistics calculated using Household Budget Survey 2018 and, where relevant, the 2018 Energy Survey from Statistics Poland.



of the households in need of support include an inhabitant over 65 years. The use of coal for residential heating is more likely among the poorer and rural households, while the transition to cleaner fuel sources has hitherto proceeded at a greater speed for urban and wealthier households.

15. **While boiler and household improvements would yield substantial air quality, environmental, energy/time savings and improved thermal comfort benefits, several barriers have made this transition challenging.**

- (a) **High up-front costs of thermal retrofits and boiler replacement.** Thermal retrofitting and boiler replacements include significant up-front investments for SFB owners, which could range from about PLN 13,500 (US\$3,409) for replacing an old coal boiler with a new eco-design coal boiler to about PLN 111,000 (US\$28,027) for a heating system with cleaner fuels (district heating, gas, electric heat pump, and biomass) coupled with thermal retrofitting. The payback period of these investments could also be long, especially for thermal retrofitting. Even with subsidy schemes, many SFB owners lack the co-financing to make the investments.
- (b) **Potentially rising costs of heating.** Switching to cleaner fuels may also result in higher recurring energy bills for some, which will be problematic for the 21 percent of those living in SFBs who are at risk of poverty. While the impact of the cost of heating will vary across houses depending on the initial fuel used, building structure, and technology shifts, the cost of heating is likely to rise for certain population segments (particularly those that heat their houses through low-cost fuels, including waste and wood from local forests) as they switch to cleaner, modern fuels. There is also considerable uncertainty regarding rises in energy prices, such as imported gas, or electricity as the share of renewable energy increases. Existing social programs, such as housing assistance, energy allowance or the special purpose benefit, can be used to support heating costs, but the design of the existing or other programs may need to be adapted to support SFBs who require further support for heating costs. To this effect, a team has been established by the Order of the Minister of Climate and Environment of 23 February 2021 (Legislative Journal of the Minister of Climate and Environment, item 18) for the support of vulnerable consumers and reduction of energy poverty in Poland. Tasks of this team include developing a concept of a support mechanism for vulnerable consumers, specifying a definition of energy poverty and assessing instruments contributing to elimination of the energy poverty phenomenon.
- (c) **Weak regulatory regimes.** Out of 16 *voivodeships*, 14 have adopted ASRs requiring SFBs to replace noncompliant solid fuel boilers (manually fed coal boilers with low-quality coal, wood, and trash used as fuel). Even in the *voivodeships* that have adopted such resolutions, enforcement and knowledge of the resolution has been uneven and generally weak. Moreover, there is no requirement for the existing SFBs to undertake thermal retrofits even though this can help lower energy consumption and bills. In March 2018, legal restrictions on the quality of solid fuels were introduced, which aimed at eliminating the most polluting fuels (for example, coal slurry) from the residential sector; however, effective enforcement mechanisms are not in place or are generally weak.
- (d) **Limited access to gas for heating.** The natural gas distribution network in Poland is accessible to only about 40 percent of SFBs and to 25 percent of SFBs in need of boiler replacement or thermal modernization, which limits the potential for SFBs to switch to a clean fuel such as natural gas for space heating. Furthermore, the accessibility of gas networks varies substantially by income level. Higher income SFBs are more likely to be



connected to the gas network than low-income SFBs: 28 percent of higher-income (potential Part 1 CAPP beneficiaries) and mid- to lower-income (potential Part 2 CAPP beneficiaries) have existing connections to a gas network, compared to 18 percent of the lowest-income households. This reflects the concentration of gas networks in urban conglomerations and larger towns, while the poorest SFB households are concentrated in rural areas and smaller towns where such infrastructure is not yet established. Even SFBs with access to the gas network have been reluctant to switch to gas because it is generally more expensive. Of the approximately 40 percent of SFBs with access to the gas network, only 51 percent owned any appliance that would allow them to use natural gas as a heating source.³⁰

- (e) **Overlapping government programs.** The introduction of several competing or overlapping anti-smog programs with different subsidies and incentive schemes offered by regions and municipalities creates confusion for households. Where the program boundaries for these competing programs have not been clearly defined, such as between the CAPP and the Stop Smog Program (SSP), this can cause confusion in the marketplace. This lack of clarity has the potential to result in SFB owners preferring to wait for programs with higher subsidies. Then there is a patchwork of other energy-related programs all aimed at SFBs, for example, for boiler replacement; thermo-modernization (for example, BKG); and so on. As the CAPP program has strengthened its implementation channels, competing programs have been gradually retired or will be further consolidated – a process which is expected to continue during the course of the PforR.
- (f) **Lack of awareness and know-how.** Many SFB owners and citizens are not fully informed about the health impacts of poor air quality and the link between the burning of solid fuels and local air pollution. Others are not aware of the technical solutions to address them, how much these solutions would cost, impacts of different fuels/technologies on energy bills, which programs are available to support them, application procedures, and so on. This has limited program participation rates.

Government Support to Heat Source Transition in SFBs

16. **The GoP has responded to these barriers with a clean air program targeting SFBs.** In September 2018, the GoP launched the CAPP – a PLN 103 billion (US\$26.0 billion or EUR 22.3 billion), 10-year initiative aimed at reducing low stack emissions. Implemented by the National Fund for Environmental Protection and Water Management (NFOŚiGW), the CAPP has the specific objective of “improving air quality and reducing greenhouse gas emissions by replacing heat sources and improving the energy efficiency of single-family residential buildings.”³¹ The program deploys a system of subsidies, tax incentives, and targeted loans to help nearly 3 million SFB owners replace their solid fuel boilers and conduct thermal retrofits. The subsidies are set to vary based on the types of measures implemented and currently vary from 30–75 percent, but an increased level of subsidy is planned for low-income SFB owners.

17. **The CAPP will substantially reduce coal and unsustainable firewood use for households living in SFBs and raise the energy efficiency of household boilers, generating significant air quality and health co-benefits.** The government program (CAPP) is designed to completely phase out inefficient solid fuel household boilers which primarily use unsustainable firewood and coal, to reduce local and global air pollutants and save energy. Furthermore, the substantial support given to thermo-modernization under the program will raise the energy efficiency of the housing infrastructure and lead to further reductions

³⁰ World Bank analysis using Energy Survey, 2018, of Statistics Poland.

³¹ <http://czystepowietrze.gov.pl/wp-content/uploads/2020/10/program-priorytetowy-Czyste-Powietrze.pdf>.



of local and global emissions. This is one of the most difficult market segments to phase out solid fuel and raise energy efficiency due to the geographically dispersed nature of the investments, the high level of middle- to low-income residents, and heterogeneous consumer behaviors. Without the government program, the unsustainable status quo would remain.

18. **Government efforts are under way to phase out the use of coal boilers through the CAPP.** Elevated subsidies for higher-income beneficiaries have been designed to promote more sustainable heating solutions, such as heat pumps or gas boilers, which can receive a 45–75 percent subsidy, compared to the eco-design coal boiler (30–60 percent). Households with existing gas network connections are not eligible for subsidies for solid fuel boilers under the CAPP. Unfortunately, for some SFBs, particularly those in more remote areas, alternatives to coal heating options are either not available (no access to gas and district heating) or unaffordable (heat pumps cost about double the cost of eco-coal boilers and electric heating is more costly). Given that 21 percent of SFB households in need of the CAPP support are at risk of poverty, even with higher subsidy levels they will lack the means to pay for the potentially more expensive alternatives to coal boilers and/or afford the resulting energy bills. Thus, despite efforts to disincentivize their use, eco-coal boilers have been eligible under the CAPP to support those with no viable alternative for heating. To date, approximately 15 percent of applicants have requested eco-design coal boilers, of which about 70 percent went to the lower-income groups (table 2); however, it should be noted that 80 percent of the lowest-income applicants to date have opted for non-coal alternatives, including biomass (25 percent) and gas (40 percent). On May 21, 2021, the Minister of Climate and Environment announced that support for eco-coal boilers under CAPP would be phased out, and thus from January 1, 2022, coal boilers would no longer be eligible for any government subsidies. Since lower income households are less likely to be connected to gas networks and have been more likely to apply for eco-coal boilers under CAPP, ensuring that appropriate support is available to low-income households for their transition to cleaner fuels will need to be addressed through the low-income program.

Table 2. Technology of Heating Systems Replaced under CAPP 1.0 (until May 15, 2020)

	Percentage of Boilers Replaced
Condensing gas boiler	42
Pellet boiler	23
Heat pump	18
Eco-coal boiler	15
Electric, district heating, and other	2

19. **The CAPP will mobilize commercial financing and spur the private sector.** NFOŚiGW, with technical assistance from the World Bank, has been coordinating legal reforms, dialogue, and processes to incorporate commercial banks into the government program. After substantial negotiations, a memorandum of understanding (MoU) was signed between the Polish Banking Association (PBA) and NFOŚiGW on April 30, 2020, delineating the conditions and operational procedures for banks to participate in the CAPP. Reforms put in place on May 15, 2020, have streamlined the application process and working groups have been established to facilitate the integration of commercial banks. Work is ongoing to ensure that the financial products can be developed by commercial banks to provide co-financing alongside the CAPP subsidies to eligible households. Once completed, it is expected that, over the 10-year program period, commercial banks could provide over US\$7.6 billion in loans to homeowners to support the owners' co-financing needs under the CAPP. It is further anticipated that the longevity of these loan products extends beyond the duration of the CAPP and that they become permanent offerings



of many commercial banks, as they are in other EU countries. Further, dialogue continues with a range of private actors to support all aspects of implementation, including energy auditors and designers, equipment and material suppliers, installers and contractors, and so on to be hired by households to implement eligible energy efficiency improvements. Conservative estimates indicate the government program could create about 100,000 jobs in heating product manufacturing and supply, construction material supply, installation, and related services under the CAPP.³²

C. Relationship to the CPS/CPF and Rationale for Use of Instrument

20. The proposed operation supports the key objectives of the Country Partnership Framework (CPF) FY19–FY24 (Report No. 125670, Board discussion June 5, 2018). Supporting Poland on its path to sustainable IBRD graduation, it is fully consistent with the CPF’s focus on institutional strengthening and the priorities listed under the CPF’s Pillar 3 on ‘Resilience to environmental and global threats,’ particularly 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 according to 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 ending extreme poverty and promoting shared prosperity by focusing on providing clean energy to the poorest. The operation meets all three CPF selectivity filters: (a) developing innovative solutions that benefit the poorest and most vulnerable, (b) catalyzing private sector investments and leveraging additional resources, and (c) contributing to global public goods. The operation is also well-aligned to the World Bank’s Climate Change Action Plan (CCAP) 2021–2025, which seeks to support client countries to set themselves on a green, resilient and inclusive development pathway.

21. The World Bank’s multiyear engagement with the CAPP (under the EU Catching-up Regions Trust Fund) fed into the government program launch and has helped enhance the design and implementation of the CAPP; strengthen the focus on the income poor and energy poor; leverage private sector resources from commercial banks; and catalyze financing from other development partners, including the EU, European Investment Bank (EIB), and European Bank for Reconstruction and Development (EBRD). The results focus of the PforR instrument galvanized annual objective setting and planning under the CAPP, which was subsequently incorporated into the application for medium-term resources to support the CAPP under the EC’s Recovery and Resilience Facility (RRF). This, along with the desire for the implementing partners to continue to access the World Bank’s global knowledge and strong implementation and supervision support, led to the GoP requesting the World Bank’s support for this operation. The launch of the CAPP already benefited from a strong partnership between the World Bank and NFOŚiGW, for example in the establishment of the commercial bank financing channels and in program reforms that have simplified application structures, eligibility conditions and processes. However, the GoP is aware that results in the field will depend on the initial years of the CAPP implementation, which will require not only financing but also institutional adjustments, technical know-how, and results orientation—areas where the World Bank can demonstrate value added through engagement modalities through results-based financing. The World Bank’s involvement can also increase the comfort levels of other program partners, such as the EC, EIB, and others, to support the program. Moreover, the World Bank can share the CAPP’s experiences with other countries looking at similar issues of phasing out coal-based heating in the residential sector (for example, Western Balkans, Ukraine, and

³² Ziółkowska, Konstancja, Piotr Lewandowski, and Katarzyna Sałach. 2018. “The Labour Demand Effects of Residential Building Retrofits in Poland.” IBS Working Paper 02/2018, ISSN: 2451-4373.



Central Asia) and thus help to inform a broader regional approach and cooperation in the areas of decarbonization of the heating sector. In fact, there is already a wider engagement under the Western Balkans and Ukraine Platform initiative led by the World Bank, with financial support from the EC, and involvement of the EBRD, the Energy Community Secretariat, the College of Europe (Natolin College), and the GoP (through NFOŚiGW) focused on the Just Transition for Coal, and NFOŚiGW has proposed to expand this platform to include sustainable heating in the residential sector to combat air pollution.

22. A Program-for-Results (PforR) loan was deemed most suitable to address the GoP's request for a strong results focus and incentives for institutional improvements for an ongoing government program with thousands of small, dispersed transactions. A PforR will incentivize (a) a sharper focus on the most important results that the GoP wants to achieve, such as increased energy efficiency and air pollution/CO₂ emission reductions; (b) reliance on the GoP's own systems and procedures, thus reinforcing the institutional capacity needed for the program to achieve desired results in the long term, including scalability, inclusion, and sustainability; and (c) a focus on output and outcome monitoring and evaluation (M&E), including through reliable and credible verification systems. Other lending instruments were considered but deemed less suitable, given the need to support institutional strengthening, implementation capacity, and accountability for results.

23. **COVID-19.** The CAPP is not a direct response to COVID-19 because it began in 2018 and has been under implementation for more than three years. However, considerations have been made for potential impacts of COVID-19 on the program, such as increased use of online applications and reviews, virtual trainings to strengthen the engagement of supply-side actors during periods of lockdown/inactivity in the sector, a broader shift to virtual engagement and outreach, an extension in the time allowed for investments under approved applications to be completed, and so on. In fact, the Program has been signaled in the Anti-Crisis Shield of the GoP to respond to the COVID-19 pandemic as an economic stimulus to help minimize the impact of the pandemic on the construction sector and support job creation during the recovery phase while lowering the impacts of rising energy prices for many SFB households, particularly as lockdowns have led to prolonged periods at home. The Program has correspondingly been included in the Draft National Recovery Plan. As such, the Program would fall under Pillars 3 (Ensuring Sustainable Business Growth and Job Creation) and 4 (Strengthening Policies, Institutions, and Investments for Rebuilding Better) in the World Bank's COVID-19 Crisis Response Approach Paper.

II. PROGRAM DESCRIPTION

A. Government program

24. **Objectives and budget.** The CAPP was launched in September 2018 as a 10-year program to improve air quality and reduce GHG emissions by replacing heating systems and improving energy efficiency in SFBs. The program indicators include the number of buildings with improved thermal performance; number of inefficient heat sources replaced with efficient, low emission heat sources in SFBs; reduction in final energy consumption; and reduction of PM₁₀ and PM_{2.5}, benzo- α -pyrene, and CO₂ emissions. The government program was announced as a PLN 103 billion (US\$26.0 billion) program with a budget for subsidies, loans to municipalities and thermo-modernization tax relief of PLN 63 billion (US\$15.9 billion) and loans granted by commercial banks of PLN 40 billion (US\$10.1 billion).

25. **Institutional arrangements.** The CAPP is managed by NFOŚiGW under the MoCE and implemented through the 16 Regional Funds for Environmental Protection and Water Management (WFOŚiGWs). NFOŚiGW is responsible for overall program coordination and implementation and the



development of all program rules, guidelines, and procedures including SFB and equipment eligibility criteria. The 16 WFOŚiGWs are responsible for day-to-day operation of the CAPP, including receipt and processing of applications, disbursement of grant payments against eligible expenses, and reporting to NFOŚiGW. Operating under a financing agreement with NFOŚiGW, each WFOŚiGW enters into grant agreements with eligible beneficiaries (that is, SFB owners). Currently, commercial banks do not participate in the CAPP in a formalized way but may provide commercial loans to SFB owners directly.

26. **Support under the program.** The CAPP uses partial subsidies and tax relief to support SFBs to thermally retrofit their homes and replace outdated, inefficient heating systems with more efficient ones relying on cleaner fuels. The subsidy levels and thresholds were designed with assistance from the World Bank teams that combined distributional analysis with assessments of financing needs. Applications for subsidies can be submitted by beneficiaries on a continuous, year-round basis. An eligible beneficiary is a natural person who (a) is the owner or co-owner of an SFB and (b) has an annual income not exceeding PLN 100,000 (US\$25,250). The program subsidizes

- (a) The cost of investment preparation (energy audit, project documentation/design, and ornithological and chiropterological surveys);
- (b) The replacement of heat sources, connections, installations, and ventilation (that is, replacement of old, solid fuel boilers with district heating, electric heating or heat pumps, gas condensing boilers, eco-coal boilers, wood gasification boilers, or wood pellet boilers; required connections and internal installations; mechanical ventilation with heat recovery; and PV micro-installation); and
- (c) Thermal retrofits of SFBs (for example, building insulation, windows, and doors).

27. For each eligible cost item, the maximum grant amount is capped through both an absolute maximum grant level and a maximum percentage of the incurred costs. The program currently offers two levels of subsidy: (a) a basic subsidy level (30 to 45 percent of costs) for applicants with an annual salary of up to PLN 100,000 (US\$25,250) and (b) an increased level of subsidy (60 to 75 percent of costs) for households with a net monthly income of up to PLN 1,400 (US\$353) per person (for multi-person households) or up to PLN 1,960 (US\$495) per person (for one-person households). The higher level of subsidy was launched on October 21, 2020.

28. In addition, the GoP complements the grants provided by NFOŚiGW through tax relief to owners and co-owners of renovated SFBs, which is managed by the Ministry of Finance (MoF) and uses its treasury resources. The tax allowance enables an applicant to deduct up to PLN 53,000 (US\$13,382) spent on retrofitting investments from their personal income tax (PIT) base. The applicant benefits from not paying tax on the deducted amount; thus, this benefit is larger for richer households facing higher rates of marginal tax.

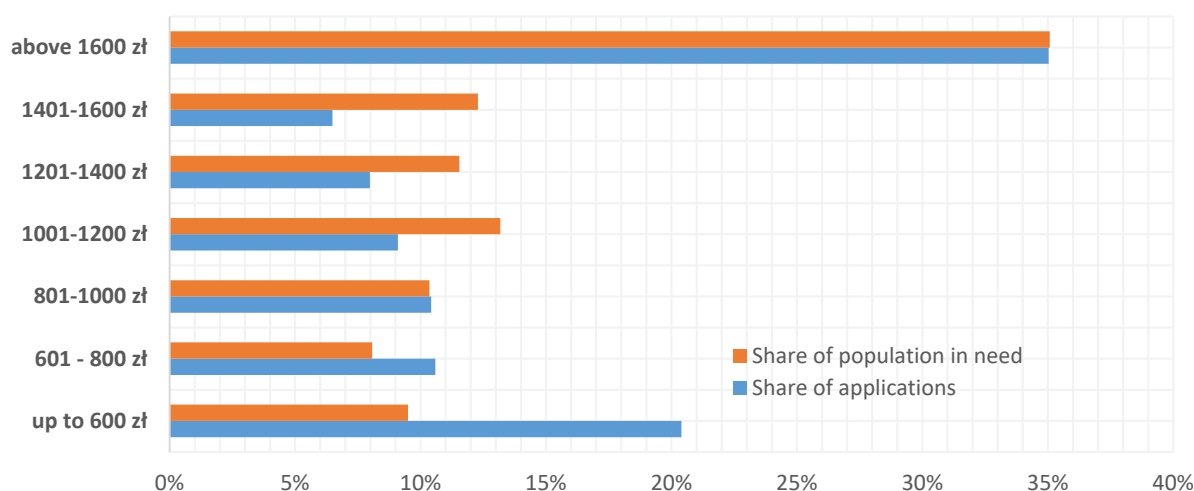
29. **Beneficiaries.** The direct beneficiaries are the 3 million people living in the SFBs that need to upgrade their heating systems. This population lives in households that are poorer than the average (21 percent of beneficiaries are at risk of poverty, compared to a population average of 15 percent) and approximately 60 percent of beneficiaries are from the bottom 40 percent of the income distribution. Under CAPP 1.0, robust demand was present for the lower-income beneficiaries (figure 3), which align to the lowest income and 'Part 2' segment of CAPP 2.0. The demand from lower-income households in this earlier stage of the program reflected both high levels of subsidies for the lowest-income households (those under the bottom two income thresholds received subsidies of 80–90 percent) and the non-monetary benefits of the program in terms of higher levels of thermal comfort and time saved from fuel collection/preparation, as captured in a behavioral assessment of motives for heat source transition. The



program will also benefit the private sector—including equipment and material manufacturers and suppliers, construction firms, installers, energy auditors, commercial banks, utilities, and so on.

30. **Current program status.** As of October 1, 2021, the CAPP has received approximately 325,400 applications for PLN 5.171 billion (US\$1.306 billion) in grants and PLN 383 million (US\$96.7 million) in loans, and 269,400 signed co-financing agreements for PLN 4.378 billion (US\$1.105 billion) in grants and PLN 204 million (US\$51.5 million) in loans. As shown in table 3 and figure 4, demand for the program has remained relatively resilient to the onset of COVID-19 and has seen further expansion linked to reforms implemented in May 2020 and October 2020, which led to a 150 percent increase in application rates between September 2020 and September 2021. With the launch of the commercial bank channels in July 2021, an expanded low-income program, increased outreach, strengthening municipality engagement and the eventual subsiding of the COVID-19 pandemic, a significant and continuous increase in the pace of applications and investments under the CAPP is expected in the coming years.

Figure 3. Estimated Income Distribution for Applications Received under CAPP 1.0



Source: CAPP data, World Bank analysis.

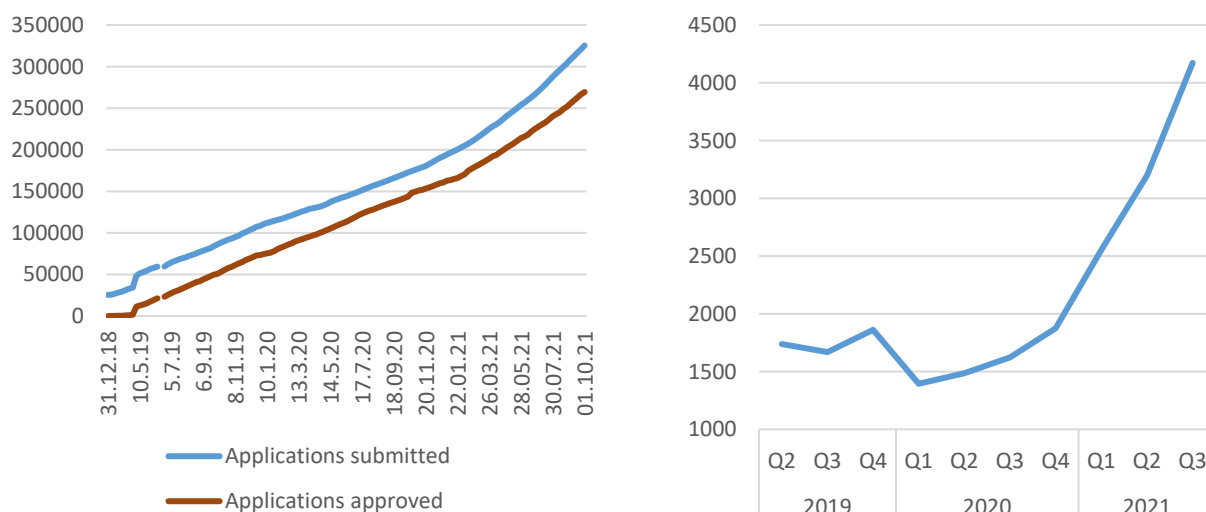
Table 3. Applications Received Per Week and Grant Requests, CAPP 1.0 and CAPP 2.0

	CAPP 1.0 (May 2019 to May 2020 for 1 and 2)	CAPP 2.0 (May 2020 to February 2021)
1. Applications received per week	1,661	1,699
2. Total requests per application	21,110	14,048
2.1 of which grant request	18,355	14,048
2.2 of which loan	2,748	—

Source: World Bank analysis of application data received as of October 1, 2021, from NFOŚiGW.



Figure 4. Number of CAPP Applications Received and Processed (Left), Average Applications Per Week (Right)



Source: World Bank analysis of application data received as of October 1, 2021, from NFOŚiGW.

31. **Since its inception in 2018, the government program has been through various adjustments** including: (a) simplification of the subsidy levels; (b) simplification of the grant application process and acceleration of processing time (for example, online applications, simplified income statement declaration, and reduction of application processing time to 30 days); (c) integration with the 'My Electricity' program that provides subsidies for solar PV; (d) subsidy allowances for thermal renovation for SFB owners who have already replaced their heating systems; (e) retroactive subsidies for investments initiated up to six months before application submission; and (f) launch of Part 2 of the program for lower-income households, allowing them to apply for an elevated subsidy level. The threshold of Part 2 of the program is set at a level that corresponds to approximately the 40th percentile of the income distribution in 2018, and therefore correspond to the bottom 40.

32. Since May 15, 2020, several further adjustments to the program have been agreed and/or announced by NFOŚiGW, and NFOŚiGW is working to complete them.

- **Integration of commercial banks.** Commercial banks will participate in the CAPP with a loan product, under which a subsidy would be provided by WFOŚiGW to be used for partial repayment of the loan extended to a program beneficiary. This loan product would not only provide complementary financing but also enable distribution of the CAPP subsidy through the commercial banks' distribution channels thus providing a 'one-stop shop' to SFB owners. The agreement also includes provisions for a proposed portfolio guarantee issued by the BGK and funded by NFOŚiGW, which would cover 80 percent of the commercial bank's loan portfolio under the CAPP. In February 2021, NFOŚiGW issued a call for commercial banks to express interest in joining the CAPP, and, to date, eight banks have submitted applications. Changes to the CAPP's information technology (IT) system to allow integration of the banks is also under way. Commercial banks launched the distribution of lending products that complement the CAPP subsidies in July 2021. As of October 1, 2021, three commercial banks have launched loan products to provide complementary financing through one-stop-shop structures.



- **Introduction of a national low-income program component.** A low-income program component is under development as part of the CAPP, which would include further financial, administrative, and operational support to the poorest and socially marginalized segment of households. The design will build upon and improve earlier approaches to support this segment of the population: CAPP 1.0 included subsidy levels of 80–90 percent to support the lowest-income segment (those earning less than PLN 800 per person per month) but included no complementary administrative or operational support, while the SSP includes 90–100 percent subsidy levels and municipality-led administrative support but has had low take-up to date.³³ Thus, the new component would address (a) financial constraints for the investments required to upgrade their heating systems and thermal modernization of their homes and (b) the need for more hands-on support in making the transition to cleaner technologies and fuels. The program is expected to be launched in two phases, with the first phase launching enhanced financial mechanisms at the national level and the second phase adding additional operational structures for hands-on support. The program design would be flanked by inter-ministerial collaboration that would allow for program elements, such as income verification and outreach, to be supported by municipality administrations including social assistance centers.
- **Introduction of central CAPP database and online platform.** A central CAPP database and online platform are currently under development to improve program monitoring and reporting. The database and platform are also important prerequisites for the participation of commercial banks and other partners in the program as it would enable communication between the IT systems of the partners. It is expected that the system will be operational by December 2022.
- **List of eligible equipment and material (ZUM).** A list of eligible equipment and materials under the CAPP was not in place when the program was established but has since been developed and is now online. Manufacturers can submit applications for their equipment and material to be included in the ZUM on a continuous basis. The system includes materials and equipment in several categories (for example, heat pumps, gas boilers, wood pellet and wood gasification boilers, coal boilers, electric heating, solar water heating, solar rooftop PV, ventilation systems with heat recovery, insulation materials, doors, and windows), which users can search. In the future, NFOŚiGW intends for the CAPP to only support equipment and material listed in the ZUM.
- **Coal phaseout.** On May 21, 2021, the MoCE announced that support for eco-coal boilers under CAPP would be phased out. Thus, from January 1, 2022, coal boilers would no longer be eligible for any CAPP subsidies.

B. Theory of Change

33. The objectives and results areas of the proposed PforR are fully aligned with those of the CAPP. As described in more detail in table 3, both the CAPP and PforR (a) have the objective of improving air quality and energy efficiency through investments in SFBs, (b) include energy saved, reduced local air pollution, and reduced CO₂ emissions in their key results areas, and (c) have an aligned indicator

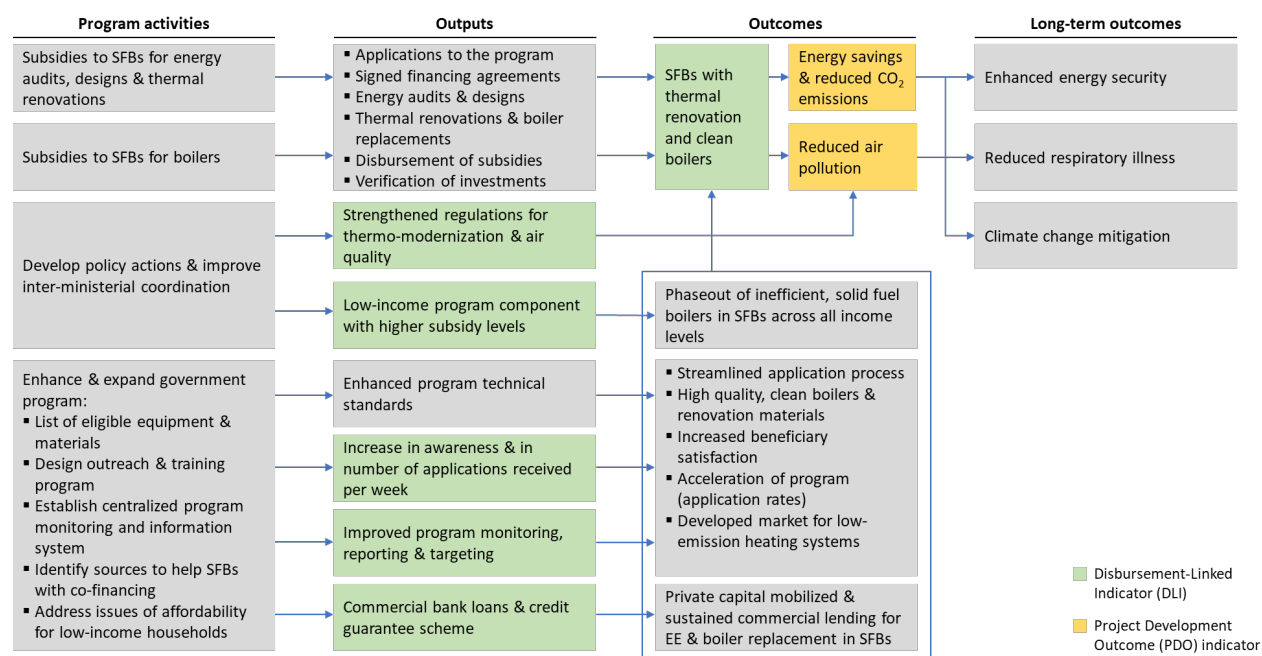
³³ In the two years since inception, the SSP has been adopted by 10 of the 2,477 municipalities due to capacity and financial constraints. The challenges facing low-income populations and revised operational structures that can be considered in the implementation of a strengthened program are documented in World Bank. 2020. *Towards Robust, Scalable, and Inclusive Clean Air Program for All*. Catching-Up Regions 4 Report.



framework. The PforR development objectives are to save energy and reduce air pollution emissions from single-family buildings in Poland, which is aligned with the CAPP. Investments under the PforR support a number of institutional and physical disbursement-linked indicators (DLIs), the latter including DLI 6 (number of SFBs that have undergone thermal renovations) and DLI 7 (number of inefficient, solid fuel boilers replaced with efficient, clean, non-coal heating systems), which both directly lead to energy savings, reduced local air pollution, and reduced CO₂ emissions. Such investments are expected to lead to reduced emissions and energy savings, which will ultimately lead to enhanced energy security, reduced respiratory illness from air pollution, and mitigation of climate change.

34. Based on the CAPP's current formulation, the government program relies on subsidies (including tax waivers) for boiler replacement and thermal renovations and for related preparatory work (for example, energy audits and designs). These subsidies are expected to lead to replacement of inefficient, polluting stoves with efficient, clean models and thermal renovations of the homes to reduce heat losses. The Program includes a range of activities to support implementation of the CAPP, such as a list of eligible equipment and materials for thermal retrofitting and non-coal boiler replacement, outreach activities to increase awareness about the CAPP, development of a centralized program management and information system, efforts to identify and attract commercial financing to support SFBs with co-financing, developing schemes to address affordability issues for low-income households, and other activities to accelerate the CAPP and expand its coverage.

Figure 5. Theory of Change



35. The theory of change (see figure 5) is based upon the mitigation of critical risks to achieving the PforR development objectives, mainly focused on ensuring high participation rates, strengthening inclusion of participation, and sustainability through

- Strengthening regulations for thermo-modernization and air quality (participation rates and sustainability);



- (b) A low-income program component with higher subsidy levels (participation rates and inclusion);
- (c) Ensuring high awareness and interest to increase the number of applications received and approved application rates among SFB owners, including by mobilizing outreach channels through commercial banks (participation rates and inclusion);
- (d) Adequate monitoring and reporting to improve targeting and enable identification of required adjustments to the CAPP (participation rates, sustainability, and inclusion); and
- (e) Access to affordable commercial financing to meet SFB owner co-financing needs (participation rates and inclusion).

36. These elements are expected to contribute to acceleration of the CAPP, a developed market for low-emission heating systems, sustained commercial lending for thermal renovation and boiler replacement in SFBs, and a phaseout of inefficient, solid fuel boilers in SFBs across all income levels. SFBs with thermal renovations and clean boilers will, in turn, lead to a range of outcomes including energy savings, reduced CO₂ emissions, and reduced air pollution. The positive long-term outcomes include enhanced energy security, reduced respiratory illnesses, and climate change mitigation.

C. PforR Program Scope

37. The World Bank's proposed PforR objectives, targets, and scope have been developed to closely align with those of the CAPP. The scope of the PforR is defined as a five-year time slice of the CAPP (including the complementary tax relief scheme under the MoF) but excluding support for eco-coal boilers. Therefore, the two key differences are the following: (a) while the CAPP does include provisions for eligible SFBs to purchase new, eco-design coal boilers through 2021, the PforR would not support them; and (b) while the CAPP is a 10-year program, the PforR would be limited to a five-year duration. Over the life of the PforR (that is, March 2022 to March 2027), it is estimated that about 813,000 SFBs would be served to support thermal renovations, non-coal boiler replacements, or both, at an estimated total cost of US\$5.7 billion. The proposed PforR would also take into account major planned enhancements to the CAPP, such as the inclusion of commercial banks and the launch of a low-income component, as they are introduced and become fully operational.

38. The Program beneficiaries will be the same: SFB owners who need thermal renovations of their homes and replacements of their old, solid fuel boilers with the exception of those opting for new eco-coal boilers; citizens who benefit from cleaner air; equipment and service providers who benefit from increased demand for their products and services; banks who benefit from increased clientele; and loan applications and suppliers of cleaner fuel options (for example, utilities supplying electricity, gas and district heating, biomass suppliers, and so on). The direct beneficiaries are poorer than average citizens and approximately 60 percent of those served by the program are expected to be from the bottom 40 percent of the income distribution scale.

39. Some of the main gaps under the CAPP, which the Government and NFOŚiGW have acknowledged, would be included as DLIs to enhance the CAPP's scope and inclusion focus and, thus, its impact. These key enhancements, which are elaborated in the discussion of the assessments and the DLIs and Program Action Plan (PAP), include (a) the design and launch of a low-income component; (b) the finalization and launch of a banking lending scheme, which may include a guarantee facility to support lending to less creditworthy SFB owners; (c) enhanced outreach which may include the introduction of 'program operators', who help recruit SFB owners and can assist them throughout the application and

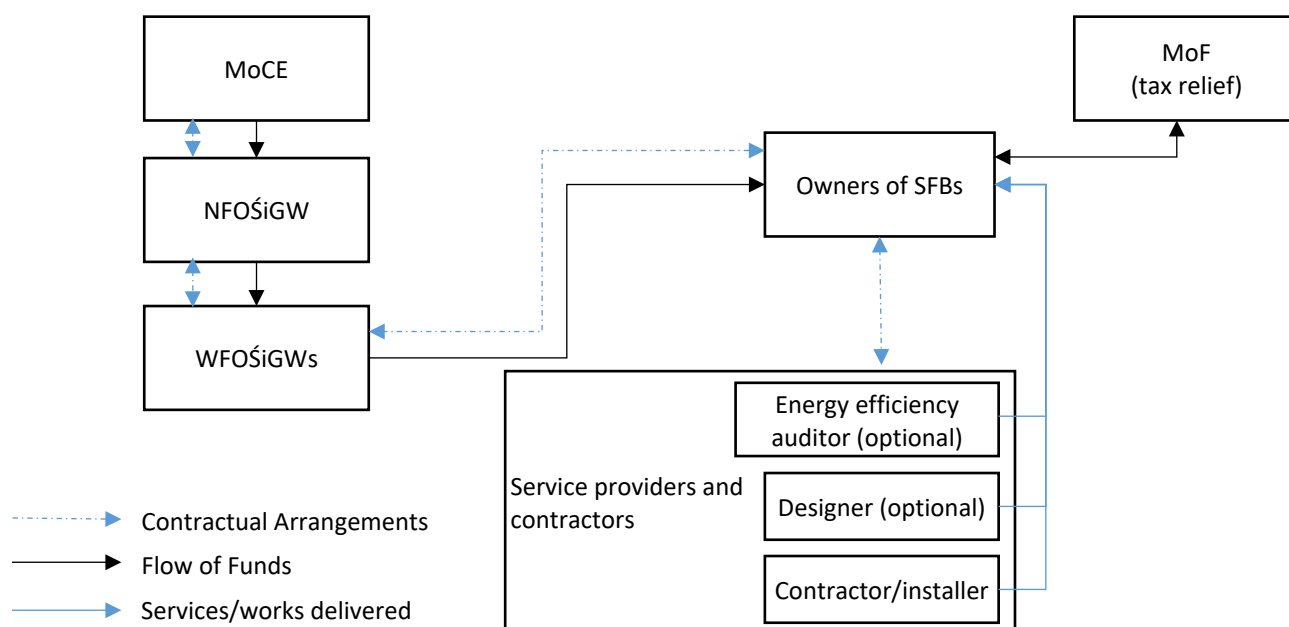


implementation process, various tools and guides, and training; and (d) a full centralized database and online platform to support CAPP monitoring and reporting.

40. Institutionally, the PforR would fit within the existing institutional arrangements under the CAPP (see figure 6), with the parallel tax relief under MoF. However, some institutional adjustments will be needed, such as the inclusion of commercial banks and the formalization of the roles and responsibilities of municipalities. Due to the nature of the Program, no centralized procurement is planned, so most of the works and equipment contracts would be small (under US\$20,000) and procured by SFB owners directly.

41. The proposed PforR would support investments in about 813,000 SFBs under the CAPP over five years, contributing directly to increased energy efficiency (1,125 billion MJ in energy savings); reduced GHG emissions (63 million tons of CO₂); and lowered air pollution (433,000 tons PM₁₀, 369,000 tons PM_{2.5}). While the World Bank would only provide about 5 percent of the total Program budget over the five-year period, the World Bank's value added would be critically important to help the CAPP increase its implementation pace by 50 percent annually, going from 1,674 applications per week in early 2021 to 5,514 in 2024, by convening stakeholders; catalyzing reform; and bringing international knowledge and expertise to align and strengthen the regulatory, institutional, and procedural reforms and address implementation bottlenecks needed to achieve the CAPP results.

Figure 6. Institutional Arrangements of CAPP



42. The three assessments (technical, fiduciary, and environment and social) assessed the CAPP and identified potential areas for strengthening. Based on these findings, disbursement-linked results (DLRs) were selected to (a) strengthen the policy framework (regulatory reform to strengthen local air quality monitoring and enforcement and introduce a scalable low-income component); (b) enhance the institutional arrangements and capacities for Program implementation (through a consolidated monitoring system, integration of commercial banks, and a national outreach campaign); and (c) support physical results (number of SFBs with completed thermal renovations and boiler replacements). The PAP reinforces the focus on results by seeking enhancements in the areas of program governance, planning



and execution, M&E, capacity building, and social and environmental aspects. DLIs/DLRs were determined based on their ability to seek transformational impacts, be measurable and verifiable, be nonreversible, and offer clearer links with the ultimate energy savings and emission reduction results. The PAP activities focused more on process changes that require ongoing monitoring and improvements but are still needed to ensure Program effectiveness and efficacy. Some of the main enhancements to the CAPP, as reflected in the DLIs/DLRs and PAP, are the following:

- (a) **Strengthening air quality monitoring and enforcement.** The PforR includes policy enhancements (DLI 1), which introduce a central registry for emissions in buildings (CEEB) that will formalize local data collection on heating systems; improve air quality assessments and management through improved outreach and enforcement; and, while the Program is national in scope, allow for targeting further outreach and resources at regions where inefficient solid fuel boilers are more common and air quality levels are the worst. The PAP includes actions to address weaknesses in the air quality enforcement system, including the strengthening of outreach mechanisms through municipalities, which are responsible for air quality enforcement but typically have limited resources, through for example, training and financial support.
- (b) **Enhancing private capital mobilization.** DLI 4 supports a paradigm shift in the CAPP with the incorporation of commercial banks as one-stop shops to enable SFB owners to access the CAPP grants and co-financing from banks simultaneously, which solves a major constraint in SFB owner co-financing and is expected to mobilize US\$1.5 billion while strengthening outreach of the CAPP and application processing capacity. The PforR also includes policy enhancements (DLI 1) that support the issuance of guarantees to help make loans more accessible to SFBs and enable more commercial banks to join the CAPP.
- (c) **Bolstering the inclusion aspects.** The design and launch of a scalable low-income program (DLI 2) would provide critical financial and handholding support to the poorer and socially vulnerable SFBs under the CAPP and was requested by the GoP given the World Bank's global expertise in this area. Energy bills account for 11 percent of expenditures for the lowest-income segment, while nearly one-third of these households are unable to afford to heat their homes to achieve adequate thermal comfort. A detailed distributional assessment of household finances signals that this population requires higher subsidy levels (in the magnitude of 90 percent) to avoid being left behind. The PforR includes policy amendments (DLI 1) that support the institutional consolidation of low-income support structures to promote scale and cohesion in the support provided. The PforR also includes enhanced monitoring of progress and beneficiary experiences and satisfaction (DLI 3, PAP); strengthened co-financing for households that are unable to secure loans from commercial banks (PAP, item 2); and governance structures to strengthen interministerial coordination (PAP 1), including through interministerial dialogue on social assistance or related energy poverty programs that can support potentially higher energy bills in vulnerable SFBs and transitions to cleaner fuels.
- (d) **Enhancing implementation effectiveness and pace.** Improvements in Program planning; updated technical standards; improved monitoring and oversight; enhanced environment and social systems; and strengthened communication channels and outreach (DLIs 3 and 5, PAP) will help mobilize demand and enhance the infrastructure to reach the ambitious target of increasing implementation pace annually by 50 percent in the first three years to ensure that the CAPP is able to serve 3 million SFBs in 10 years as planned.



- (e) **Leveraging funding.** The Program establishes institutional foundations and enhancements to better streamline implementation, ensure achievement of results, and manage risks—with greater efficacy (PAP). Over the overall lifespan of the CAPP implementation, it is expected to attract additional GoP funding of US\$14.3 billion, US\$6.2 billion from local banks and EUR 3–4 billion that the GoP is seeking from the EC and/or other international financiers.

43. With the proposed PforR, the GoP would also secure the World Bank’s continued technical and advisory assistance on the design aspects, implementation support, risk management, and a results-oriented incentive framework allowing for transparent monitoring across the government institutions and to support the GoP’s broader energy transition efforts.

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

44. The PDOs are to reduce energy use and air pollution emissions from heating sources in Single Family Buildings.

45. Key Program results indicators include

- **PDO 1 (Core):** Projected energy or fuel savings (MJ). The indicator measures progress toward reducing energy consumption in SFBs through stove replacement and thermal renovations over the lifetime of the investments.
- **PDO 2 (Custom):** Projected lifetime reduction of particulate matter emissions (ton PM₁₀ and PM_{2.5}). This indicator measures progress toward reducing particulate matter emissions resulting from stove replacement and thermal renovations in SFBs over the lifetime of the investments.

Table 4. Alignment of PforR with Government Program

	Government program	Program Supported by the PforR	Reasons for Nonalignment
Objective	To improve air quality and reduce GHG emissions by exchanging heat sources and improving energy efficiency in SFBs	To reduce energy use and air pollution emissions from heating sources in SFBs.	None
Duration	2018–2029	2022–2027	Government program already ongoing. Supporting five-year time slice of program.
Geographic coverage	Nationwide	Nationwide	None
Technology coverage	Heating. All technologies (heat pumps, biomass, district heating, gas, and coal through 2021) Thermal. All eligible materials (insulation, windows, and doors)	Heating. All technologies except coal-based heating appliances Thermal. All eligible materials (insulation, windows, and doors)	World Bank decision not to finance new coal boilers.
Results areas	Energy saved, reduced local air pollution, and reduced GHG emissions	Energy saved, reduced local air pollution, and reduced GHG emissions	None



	Government program	Program Supported by the PforR	Reasons for Nonalignment
Program indicators and DLIs	(a) Reduction of final energy consumption (energy saved) (b) Reduction of PM ₁₀ dust emissions (reduced local air pollution) (c) Reduction of benzo- α -pyrene emissions (reduced local air pollution) (d) Reduction of CO ₂ emissions (reduced GHG emissions) (e) Number of buildings with improved thermal performance (d) Number of inefficient heat sources replaced with efficient, low emission heat sources in residential buildings	(a) Projected energy or fuel savings (PDO indicator, energy saved) (b) Projected lifetime reduction of particulate matter emissions (PDO indicator, reduced local air pollution) (c) Projected lifetime emissions reductions as a result of the energy savings (reduced GHG emissions) (d) Number of SFBs that have undergone thermal renovations (DLI) (e) Number of inefficient, solid fuel boilers replaced with efficient, clean, non-coal heating systems (DLI)	For PforR, only non-coal boilers will be supported.
Overall financing	PLN 103 billion (US\$26.0 billion) to serve 3 million SFBs	PLN 22.6 billion (US\$5.7 billion) to serve 813,445 SFBs (600,000 SFB renovations, 630,000 boiler replacements)	Government program is for 10 years for 3 million SFBs; the PforR is for a five-year period and excludes support for coal boilers, which would lead to about 813,000 SFBs being served.

Table 5. Program Financing

Source	Amount (US\$, millions)	Percentage of Total
Counterpart Funding	3,965.51	69.39
Borrower/Recipient	2,993.60	52.39
Local Beneficiaries	971.91	17.01
International Bank for Reconstruction and Development (IBRD)	291.30	5.10
Commercial Financing	1,457.66	25.51
Total Program Financing	5,714.47	

E. Disbursement-Linked Indicators and Verification Protocols

46. DLIs and results (DLRs), listed in table 6, are proposed as key results linked to the Program, and disbursements would be triggered by the achievement of these seven DLIs. The proposed DLI framework is structured around three areas: policy and regulatory enhancements (EUR 45 million), Program design and operational enhancements (EUR 61 million), and Program physical results (EUR 144 million). Actions in the first two areas would be identified to improve the Program's ability to achieve its ultimate objective, be effective, and ensure sustainability. The following key considerations were taken into account in their selection: (a) the DLIs signal and monitor critical milestones for the achievement of the PDO (DLIs 6 and 7); (b) they provide incentives to reward performance by ensuring mobilization of commercial financing



and accessibility to the poorest households (DLIs 1, 2, and 4); and (c) they address specific risks or constraints to achieving the results, including long-term sustainability of the program and institutional development (DLIs 3, 4, and 5).

47. The policy- and program-level DLIs (DLIs 1 to 5) aim at institutional adjustments, strengthening inclusion, improving delivery mechanisms, mobilizing commercial financing, and enhancing M&E structures and results orientation—areas where the World Bank’s PforR structure can demonstrate value added through structuring incentives for results—and are likely to have an impact beyond the five-year PforR period on the broader, 10-year government program (CAPP). The physical DLIs 6 and 7 support completion of thermal renovations and non-coal boiler replacements, respectively. Considerations were made to combine DLIs 6 and 7 but were left as separate DLIs to reflect the possibility under the CAPP to carry out thermal renovations and boiler replacements in a phased manner. While combining thermal renovations with boiler replacement is desirable and incentivized under the CAPP (about 59 percent of all CAPP applications are for both), several constraints need to be considered: (a) requiring SFB owners to do thermal renovation and boiler replacement concurrently would increase the up-front investment costs and thus could become a barrier (given that 60 percent of SFB owners are in the bottom 40 percent of the income distribution scale); (b) some SFBs may have already completed thermal renovations and thus only need to apply for CAPP funds to replace their coal boilers (approximately 55 percent of SFB owners reported having insulated their homes); (c) some SFBs (about 12 percent of all CAPP applications) may have already replaced their old boilers and only require CAPP funds for thermal renovations;³⁴ and (d) thermal renovations may not be cost-effective in some old SFBs because of their structural soundness or related issues. However, the outreach campaign will explain the benefits of linking the two measures, which would provide reduced pollution and energy use while helping SFB owners to better manage their energy bills.

Table 6. Program DLIs/DLRs

Indicator/Result	Amount (EUR, million)	Description of Indicators	Completion Deadline
Policy-level DLIs			
DLI 1 Adoption of the Act of 28 October 2020 Amending the Act on Supporting Thermo-modernization and Renovation and Certain Other Acts as published in the Borrower’s Journal of Laws, item 2127, (“the Act”) in respect solely to the amendments in the Act that specifically pertain to: (i) the establishment of the Central Registry of Emissions for Buildings	20	Adoption of legislative amendments to propagate greater uptake for the CAPP and the low-income program, including (a) the establishment of the CEEB to formalize air quality data collection and monitoring, outreach, inspections, and enforcement of solid fuel burning and allow for better regional targeting of program resources; (b) the provision of financial resources to the BGK to issue guarantees to help make loans more accessible to SFBs and enable more commercial banks to join the CAPP; and (c) the transfer of the SSP to the MoCE to allow the CAPP to serve low-income SFB owners.	January 1, 2021 (Prior result – completed January 1, 2021)

³⁴ The CAPP requires that old, solid fuel boilers be replaced. Thus, SFB owners who do not replace their old boiler but apply for thermal renovations only are not eligible for the CAPP funding.



Indicator/Result	Amount (EUR, million)	Description of Indicators	Completion Deadline
(CEEB); (ii) the provision of financial resources to BGK to issue guarantees; and (iii) the transfer of the Stop Smog Program to MoCE			
DLI 2 Adoption and operationalization at the national level of the low-income program under CAPP	25	Design, adoption, and operationalization of the Program or program component targeting low-income households, acceptable to the World Bank, with appropriate subsidy levels, mechanisms for eligibility verification, implementation support, and monitoring to ensure high participation rates. The DLI has two DLR targets: DLR 2.1 will be met when NFOŚiGW has announced the first phase of the low-income program on the CAPP website and included the provisions for the low-income program in the publicly available program website; the World Bank considers that the first phase of the low-income program (subsidy levels, mechanisms for eligibility verification, and monitoring) is acceptable to the World Bank; and at least a total of 100 applications from SFBs for the first phase of the program have been submitted under the CAPP nationally.	March 31, 2022
	<i>DLR 2.1: 5</i>		
	<i>DLR 2.2: 20</i>	DLR 2.2 will be met when NFOŚiGW has announced the launch of the second phase of the low-income program on the CAPP website and included the provisions for the updated low-income program in the publicly available CAPP documents; the World Bank considers that the updated low-income program (subsidy levels, mechanisms for eligibility verification, extended implementation support, and monitoring) is acceptable to the World Bank; and thereafter at least 100 applications from SFBs have been submitted under the CAPP nationally.	March 31, 2023
Program-level DLIs			
DLI 3 Publication and dissemination by NFOŚiGW of a consolidated CAPP progress report based on the centralized CAPP MIS and submission of the said report to the Coordination Committee	20	Development and launch of a centralized program management information system (MIS) that brings together key information from applications from WFOŚiGWs, including applications submitted/approved; measures and technologies installed at completion stage; and results achieved at the regional, district, and local levels. The MIS would allow for consolidated CAPP progress to be done. The DLI will be met when the MIS is operational and is used to generate and publish an initial progress report on CAPP to be submitted to a suitable Coordination Committee and the World Bank and will be available on the CAPP website.	June 30, 2023
DLI 4 Mobilization of commercial financing	21	Establishment of a financial mechanism with at least three eligible participating financial institutions (that is, commercial or cooperative banks) to combine subsidy	June 15, 2022



Indicator/Result	Amount (EUR, million)	Description of Indicators	Completion Deadline
under CAPP, with a one-stop shop provided by eligible financial institutions for loans and subsidy payments		payments and loans to eligible SFB owners under a single window under the CAPP. The DLI will be met when at least PLN 50 million in loans have been committed by the eligible financial institutions to SFB owners.	
DLI 5 Increased awareness of CAPP based on expanded program outreach campaign	20	Launch an expanded national-level public campaign on the CAPP, with range of media tools, guides, websites, training, and tools to facilitate application preparation and implementation for all Program participants. This could be based on the enhancement of the campaign activities currently being prepared under the shared competence of NFOŚiGW (providing funding for the campaign) and MoCE (design and implementation of the campaign). The outreach efforts should include developing an awareness baseline, testing of messages, and impact monitoring with outcome indicators. The DLI has five DLR targets. DLR 5.1 will be met when the rolling 3-month average of number of applications received per month under the CAPP in 2022 is greater than 10,000.	December 30, 2022
	<i>DLR 5.1: 4</i>		
	<i>DLR 5.2: 4</i>	DLR 5.2 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 12,000.	June 30, 2023
	<i>DLR 5.3: 4</i>	DLR 5.3 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 16,000.	June 30, 2024
	<i>DLR 5.4: 4</i>	DLR 5.4 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 25,000.	June 30, 2025
	<i>DLR 5.5: 4</i>	DLR 5.5 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 30,000.	June 30, 2026
Physical Progress DLI			
DLI 6 Number of SFBs that have completed thermal renovations with Eligible Equipment and Materials under the CAPP	72 <i>(Up to 12.12 as prior results)</i>	Number of eligible SFBs that have completed eligible thermo-modernization renovation (for example, installation of insulation, window/door replacement) with eligible materials from annex 2, 2A, or the approved ZUM, completed according to CAPP rules and paid invoice. The scalable indicator is the number of SFBs with thermal renovations completed (disbursement formula: EUR 120.00 per SFB).	Scalable DLI, with final results due by March 31, 2027
DLI 7 Number of inefficient and solid fuel boilers replaced with efficient, clean, non-coal heating systems with Eligible Equipment and Materials under the	72 <i>(Up to 14.51 as prior results)</i>	Number of eligible single-family residential building heating systems that have been removed and dismantled, and replaced with more efficient, cleaner, non-coal units (covered under the eligible equipment in annex 2, 2A, or ZUM) completed according to CAPP rules and paid invoice. The scalable indicator is the number of SFBs with non-coal boiler heating systems replaced (disbursement formula: EUR 114.29 per SFB).	Scalable DLI, with final results due by March 31, 2027



Indicator/Result	Amount (EUR, million)	Description of Indicators	Completion Deadline
CAPP			

48. Some of the DLRs will trigger full disbursement (DLIs 1, 3, and 4); some will disburse in tranches based on milestones (DLIs 2 and 5); and some (DLIs 6 and 7) will be scalable, that is, disbursed on a proportional basis based on the results achieved (EUR 120 and EUR 114.29 per SFB, respectively). For results that were achieved after the Program Concept Note (March 28, 2019) but are achieved before signing of the Loan Agreement, payments could be made based as prior results, which are expected for DLI 1 and a portion of DLIs 6 and 7. A credible verification agent (CVA) will need to be appointed under the Program to verify results on the achievement of DLRs based on agreed verification methods. The CVA will have specialized technical expertise and qualified personnel, satisfactory to the World Bank, and the terms of reference (TOR) for the CVA has been agreed with all parties. The draft TOR with verification protocols has been agreed with the World Bank. The full details of the DLIs, including the verification protocols, can be found in annex 2.

III. PROGRAM IMPLEMENTATION

A. Institutional and Implementation Arrangements

49. The Republic of Poland, through the MoF, would be the Borrower of the proposed PforR loan. The MoCE, via NFOŚiGW, will be responsible for implementation of the proposed operation for the subsidy part of the CAPP under the PforR; the MoF will be responsible for the tax relief part of the PforR. For the subsidy part of the PforR, NFOŚiGW shall support MoCE in the day-to-day implementation and coordination. WFOŚiGWs have the day-to-day responsibilities as the primary interface with SFB owners and applicants. The main institutions involved, and their roles and capacities, are as follows:

- (a) **MoF.** The MoF will represent the Borrower for the PforR loan, manage the national budget, and administer the complementary tax allowances under the Program.
- (b) **MoCE.** The MoCE is responsible for conducting the GOP's policy of sustainable development while preserving native natural resources and the Polish landscape, including its climate and energy policies. Under the CAPP, the MoCE is the administrative body responsible for the CAPP's legal and regulatory setup in cooperation with NFOŚiGW and conducts some of the program communications and outreach.
- (c) **NFOŚiGW.** This public fund, under the MoCE, is tasked to finance and implement various environmental programs including the CAPP. Under the CAPP, NFOŚiGW is responsible for (i) overall Program coordination and implementation; (ii) development of all Program rules, guidelines, and procedures including SFB and equipment eligibility criteria; (iii) developing financing agreements with WFOŚiGWs; (iv) recruitment of participating financial institutions and negotiating their framework agreements; (v) Program communications and application platforms; (vi) Program monitoring, oversight, evaluation, and reporting; and (vii) financial mobilization, management, and disbursements.
- (d) **WFOŚiGW.** WFOŚiGWs represent 16 public agencies under the supervision of regional councils and regional governors. Their main functions under the CAPP include (i) receipt and processing of program applications, (ii) disbursement of grant payments against eligible



expenses, (iii) ex post inspections and oversight, and (iv) reporting to NFOŚiGW. Operating under a financing agreement with NFOŚiGW, each WFOŚiGW enters into grant agreements with eligible SFB owners. They also maintain cooperation agreements with participating municipalities. WFOŚiGWs typically establish a separate unit with 15–30 full-time staff responsible for the administration of CAPP—application evaluation, agreement preparation, implementation, accounting, and supervision/oversight and may have three to four local offices to deal with applications in their region locations.

- (e) **Municipalities (*Gminy*).** Municipalities serve as local points of access for SFB owners, verify SFB eligibility based on income (for Part 2 beneficiaries), and provide general Program information to potential applicants. About half of the municipalities have signed agreements with NFOŚiGW regarding the CAPP outreach, but all municipalities are required to verify incomes.
- (f) **Private service providers.** These companies (for example, energy auditors, consultants, equipment providers, and contractors) provide services for energy audits, designs, and deliver/install heating systems and thermal modernization works. There are many licensed firms that can support the Program—energy auditors, designers, equipment suppliers, contractors, and installers.
- (g) **Participating commercial banks.** Once they are in place, banks will act as one-stop shops for SFB owners who apply for loans/subsidies under the CAPP. Under a cooperation agreement with NFOŚiGW, banks will review the loan applications from SFB owners directly, channel subsidies from the relevant WFOŚiGWs, process and disburse parallel loan applications, and report aggregate Program data to NFOŚiGW and WFOŚiGWs.

50. **Technical assessment findings.** The Program has a strong strategic rationale as it tackles critical issues of air quality, energy security, and climate change mitigation due to high energy consumption and pollution from old heating systems in older SFBs. The Program is well-aligned with the EU priorities as noted in the suite of transposed energy efficiency directives, strategy documents (for example, NECP), and air quality standards and in the domain of tackling energy poverty. Many EU countries allocate public funding/subsidies to the residential sector, given the substantial market barriers associated with the high up-front investment costs, long payback periods, and high transaction costs. Investment subsidies have been virtually ubiquitous for housing renovation and energy efficiency programs in other Central and Eastern European countries. However, the governance mechanism for air quality, energy, and environmental policies and programs could be strengthened through a high-level interministerial body to coordinate related policies, strategies, and programs; identify and address policy gaps; and coordinate financial resources, indicators, and implementation capabilities across programs.

51. The borrower's institutional capacities are generally adequate considering the current volumes of applications. However, if the Program is to achieve the desired scale and pace of implementation, capacities will need to be strengthened. It would also be advisable to ensure that common mistakes, renovation deficiencies, lessons, and so on are collected and disseminated as early as possible so these experiences can be incorporated. The CAPP needs to expedite negotiations with banks to enable them to start offering loans to SFB owners. This includes the completion of the online platform to provide a simpler and integrated online application process, access to ZUM and other tools, and a centralized Program monitoring system. The CAPP also needs to introduce a new provision for higher subsidy levels for low-income SFB owners, many of whom are unable to access the co-financing needed to join the Program. The revisions to the CAPP included relaxing restrictions of solid fuel boilers, which should be reinstated with a simpler method for assessing the viability to connect to nearby gas networks. The recent decision



to phase out subsidies of eco-design coal boilers is welcome, and CAPP will now need to urgently accelerate the low-income program to keep the Program inclusive in nature, that is, serving the lower-income SFB owners who may lack the means and infrastructure accessibility for cleaner fuel options.

52. **Fiduciary assessment findings.** The Fiduciary Systems Assessment (FSA) assessed the subsidy part under the CAPP and thermo-modernization tax relief, which are currently operational. Based on the assessment and agreed upon actions to strengthen the system, which are reflected in the PAP, and other mitigation measures, the CAPP's fiduciary systems are considered adequate to meet the World Bank's requirements for the PforR. Due to the inherent nature of claiming tax relief, the risk of noncompliance, including unintentional and intentional errors, is higher for the thermo-modernization tax relief component than the subsidy scheme, as the latter has a more robust ex ante and ex post controls and verifications. The assessment included the identification of risks and recommended mitigation measures in the areas of Program governance, financial reporting and audits, internal controls, and financial management (FM) capacity.

53. **Environmental and Social Systems Assessment (ESSA) findings.** The ESSA recommends the following actions to implement an environmentally and socially sound Program: (a) broaden the scope of the CAPP ex post review to confirm adherence to environmental and social aspects (for example, waste management, bird/bat survey, and occupational health and safety) through the adoption of an environmental and social checklist for WFOŚiGWs to support the ex post review; (b) strengthen the existing Program outreach efforts; (c) formalize the role of municipalities under the CAPP; (d) establish an emissions registry for SFBs; and (e) systematize grievances and feedback mechanisms at the national and regional levels.

B. Results Monitoring and Evaluation

54. M&E of the progress toward achievement of the Program's objectives will be based on the government program's existing data collection systems, currently managed by NFOŚiGW. At the central level, NFOŚiGW and WFOŚiGW perform basic monitoring of the Program activities and outputs. On a weekly basis, NFOŚiGW collects data from WFOŚiGWs based on agreed parameters, for example, number of registered SFBs, received/approved applications, disbursed grants, separated by income segment and region (*voivodeship*), and so on. The CAPP also has a list of indicators and targets.³⁵ NFOŚiGW maintains a Program website and register of the received and eligible applications, signed contracts, and amounts committed and disbursed. Key CAPP results are issued in reports to the MoCE and others as they relate to energy efficiency targets under the NECP/long-term building renovation strategy (LTRS) and so on. The World Bank team will supervise implementation progress semiannually, including the results indicators defined in annex 1.

55. To strengthen M&E under the Program and support the long-term sustainability of its results, NFOŚiGW is now making plans to develop a consolidated online platform which will include a centralized Program monitoring system building on the databases maintained by WFOŚiGWs, banks, and others. All indicators will be monitored through this centralized monitoring system. In addition, it is proposed that NFOŚiGW administer an annual beneficiary satisfaction survey to the CAPP applicants to collect information on their demographics (age, gender, income level, and location); satisfaction with the Program; positive impacts because of the Program (for example, cleaner indoor air, better indoor temperature, improved health, and lower energy bills); and any adverse impacts and feedback. The World

³⁵ CAPP document version 2.



Bank has also recommended that the online platform be used to collect information on common deficiencies from ex post inspections, periodic midterm reviews, impact assessments, and so on, which can then be incorporated into the CAPP's outreach and training efforts.

C. Disbursement Arrangements

56. Disbursements will be made on the basis of achieved and verified DLRs, following the World Bank's review based on the verification protocols and the World Bank's determination on disbursement levels. Annex 2 provides the list of DLIs, the disbursement amounts for each of the DLRs, and the protocols for their verification. After the World Bank formally considers the DLR met, NFOŚiGW through the MoF can then submit withdrawal applications for the disbursement of the relevant amount. If the Program consistently outperforms the targets, the loan can be fully disbursed before the formal end of the operation.

57. As noted previously, some of the policy- and program-level DLIs (for example, DLIs 1-4) will trigger full disbursement once achieved and verified, while others (DLIs 6, and 7) will be scalable, that is, disbursed on a proportional basis based on the results achieved. For DLI 5, disbursements are proposed to be annual, (EUR 4 million each year) based on achievement of agreed annual impact targets for the outreach efforts. For DLIs 6 and 7, the World Bank would disburse based on a report by the CVA that the works have been completed with eligible equipment and materials and that all invoices have been paid. Disbursements would be made as requested by the MoF/NFOŚiGW on a proportional basis (i.e., EUR 120 per SFB for DLI 6 and EUR 114.29 per SFB for DLI 7). For results that were achieved after the Program Concept Note (March 28, 2019) but are achieved before loan signing, payments could be made based as prior results which are expected for DLI 1 and a portion of DLIs 6 and 7 (estimated at about EUR 46.6 million).

58. **Advanced payment.** An advanced payment following the effectiveness of the Legal Agreement of up to 25 percent of the loan (EUR 62.5 million) would be made against the DLIs. Advances could be made for the overall Program or against specific DLIs. Advance payments can provide flexibility for the Government to carry out its activities under the Program in the event that verification process of the DLIs is delayed. Advance payments will be converted to disbursement upon verification of achievement of DLIs, thus freeing up space for new advances up to the limit. However, if an advance is granted and the results are ultimately not achieved, the Government will be required to repay these funds to the World Bank.

59. **Flow of funds.** The funds can flow either as reimbursement, based on verified DLIs, or an advance of up to 25 percent of the loan. As currently proposed by the MoF, all IBRD funds would flow to the Government's foreign currency account at the National Bank of Poland (NBP).

D. Capacity Building

60. The Program will support activities targeted at increasing implementation capacity to ensure that the Program's results will be achieved and supporting their long-term sustainability. As part of implementation support, PAP, and set of DLIs, the World Bank will support institutional development to include:

- (a) Introduction of rolling program plans to better monitor interim progress, set annual targets, and forecast resource requirements (PAP, item 8);
- (b) Enhancement of the existing Program outreach campaign to provide information on the CAPP with measurable indicators to assess impacts and target lagging areas (DLI 5);



- (c) Enhancement of Program oversight and risk mitigation through a modified sampling of ex post reviews, introduction of a centralized oversight function by NFOŚiGW, training on common mistakes and installation/renovation deficiencies, and so on (PAP 2 and 5);
- (d) Development of a consolidated online platform to streamline Program monitoring (DLI 3);
- (e) Development and implementation of commercial financing, through commercial banks that will act as one-stop shops for loans and subsidy payments under the CAPP (DLI 4); and
- (f) Development of a low-income program (DLI 2), including support to monitor heating costs impacts to feed into interministerial dialogue around needed reforms for social assistance or related programs to reduce energy poverty and support heating bills (PAP 1) and enhanced co-financing approaches to enable participation by low-income SFB owners who are unable to secure loans from commercial Banks (PAP 3).

61. The World Bank supports NFOŚiGW in the development of the rolling program plans; development and analysis of inclusive beneficiary satisfaction surveys, program outreach, oversight, and the online platform; and development of the low-income program through review of TOR, review of draft plans, sharing of samples from other countries, and other advice as requested. The World Bank is also exploring possible continued technical assistance funded by the EC. Such technical assistance could help operationalize the low-income component, finalize the component with commercial banks, explore risk sharing mechanisms, build capacity of the CAPP stakeholders, among other tasks.

IV. ASSESSMENT SUMMARY

A. Technical (including program economic evaluation)

62. The Program has a strong strategic rationale as it tackles critical issues of air quality, energy security, and climate change mitigation due to high energy consumption and pollution from old heating sources in older SFBs. The Program is well-aligned with the EU priorities, as noted in the suite of transposed energy efficiency directives; strategy documents (for example, NECP); and air quality standards. However, to strengthen the governance mechanism for air quality, energy, and environmental policies and programs, the assessment noted the need to enhance the interministerial coordination arrangements to align related policies, strategies, and programs; identify and address policy gaps; and coordinate financial resources, indicators, and implementation capabilities across programs (addressed in the PAP).

63. On the technical aspects, including planning, some issues have been identified in the early implementation period and NFOŚiGW is seeking to make a number of important changes that should improve the pace of implementation. However, the assessment concluded that there are a few aspects that could be improved, including (a) strengthening Program planning to include three-year rolling plans with interim targets, funding needs, staffing requirements, and so on and periodic monitoring of deviations to ensure that it is able to reach the 3 million SFB target within 10 years (PAP 8); (b) addressing funding gaps among the lowest-income SFB owners through a combination of additional subsidies and strengthened co-financing mechanisms for lower-income households that are unable to secure loans from commercial banks (DLI 2, PAP 3); (c) considering options to better integrate the tax relief and subsidy schemes, to allow for cross-checking applications, harmonized ex post verifications, and so on; and (d) expediting the commercial bank component to allow banks to serve as one-stop shops to SFB owners for loans and grants (DLI 4).



64. The overall execution of the CAPP is gaining pace and the May 2020 revisions, once they are all implemented, will further strengthen implementation. Some additional recommendations have been made in the assessment to further enhance Program effectiveness, quality, and consistency. These include (a) improved budget planning to better forecast financial resource needs, applications processing, ex post verifications, staffing, and so on (PAP 8); (b) enhanced Program and renovation oversight, including instituting more robust sampling for spot checks, identifying common issues and deficiencies/lessons learned for broader dissemination, and greater centralized oversight of WFOŚiGWs by NFOŚiGW (PAP 5); (c) improved Program M&E, including the planned central MIS, periodic or midterm Program evaluations, satisfaction surveys, and so on (DLI 3, PAP 5 and 7); and (d) strengthened Program outreach efforts to include multimedia information to prospective SFB owners, metrics for assessing impacts (baseline and annual targets), testing of messages, identifying target groups, and annual budgets (DLI 5).

65. **Coal use.** While eco-design coal boilers are temporarily eligible under the CAPP through 2021, the PforR will only support non-coal boiler upgrades. Under CAPP 1.0, 20 percent of the lowest-income households adopted eco-coal boilers, while 25 percent shifted to biomass and 40 percent shifted to gas. Further, NFOŚiGW entered into an MoU with the national gas utility on September 27, 2021 to promote gas-based heating where appropriate. If historical patterns continue, 80 percent of the lowest-income households would continue to be served through the PforR. However, the recent decision by MoCE to phaseout subsidies for coal boilers under CAPP from January 1, 2022 will lead to the eventual alignment of the CAPP with the PforR and significantly help ensure the permanent phaseout of coal for heating purposes in SFBs.

66. **Banks.** Although eligible and interested banks (including commercial and cooperative financial institutions) will not be on-lending proceeds of the IBRD loan, but rather their own resources, it is important that the proposed banking component follows sound banking principles and does not otherwise distort the market. In 2019, NFOŚiGW established working groups with the PBA and several banks to develop the procedures and negotiate the draft agreement for the integration of the banks into the CAPP. On April 30, 2020, an MoU was signed between NFOŚiGW and PBA outlining the steps needed to allow for bank involvement through a 'one-stop shop' whereby SFB owners could apply for the CAPP subsidy and bank loan in a single application. Eligible banks would need to meet basic criteria (for example, licensed financial institutions in good standing under the Polish Financial Supervision Commission (*Komisja Nadzoru Finansowego*, KNF). KNF is a body competent for financial supervision, including banking supervision, on the basis on the Law on Financial Market Supervision and other regulations. Polish banking rules are aligned with the EU banking regulations in terms of capital adequacy, liquidity, good governance and capacity, credit appraisal and management standards, and so on. In terms of the financing agreement, market principles apply, that is, the Program would be open to all eligible banks, lending would be provided at market rates, and so on. To date, seven commercial and/or cooperative banks have expressed interest and three have now entered into financing agreements with NFOŚiGW under the CAPP.

67. Under the agreements, SFB owners would submit a single application to participating banks. The banks then forward the subsidy application to the NFOŚiGW portal where it can be processed by the relevant WFOŚiGW. Once the application is approved, the banks would then provide the full investment amount as an uncollateralized cash loan to the SFB owner, at market rates, up to PLN 100,000 for up to 12 years. Once the investment is completed and invoices have been submitted, the WFOŚiGW would then disburse the subsidy payment to the SFB loan account at the bank, reducing the amount of loan to be repaid by the SFB owner. The WFOŚiGW would maintain responsibility for ensuring compliance with Program procedures and ex post reviews, addressing environmental and social issues, and so on. Therefore, the staffing and capacity for these aspects of the Program would be maintained within the



WFOŚiGWs. Interested banks have sought a parallel loan portfolio guarantee instrument to be capitalized by NFOŚiGW through the BGK,³⁶ which is now under development. The current plan is that NFOŚiGW would provide the CAPP funds to the BGK to underwrite portfolio guarantees to all participating banks that lend to the CAPP beneficiaries at about 70–80 percent without a guarantee fee to the banks. This is expected to help draw additional banks into the Program and thus increase competition, and expand the CAPP's distribution channel through the commercial bank branches, while helping banks extend loan tenures and lend at slightly better terms, strengthening participation in the CAPP. The BGK guarantee has been deemed necessary to generate sufficient interest for commercial and cooperative banks to participate. Because participation has been open to all interested eligible banks and credit appraisal standards would need to be met (for example, banks cannot lend to uncreditworthy SFB owners), market distortions should be minimal. It is expected that the guarantee scheme and banking agreements could be concluded and launched by the end of June 2021.

68. **Program expenditure framework.** The implication of the country's fiscal context on the Program and vice versa should not threaten continuity of Program implementation. The planned expenditures are adequate to achieve the Program results for the current volumes and requested grant size of applications for the proposed, five-year time slice of the government program (that is, 813,445 SFBs served, total cost of PLN 22.6 billion or US\$5.7 billion). This includes about PLN 9.5 billion (US\$2.4 billion) in subsidies, within the PLN 2 billion that NFOŚiGW has allocated each year. Thus, the NFOŚiGW financial resources allocated to the Program are adequate. However, for the broader, 10-year government program (PLN 103 billion or US\$26.0 billion), allocation of adequate funding is naturally not certain, particularly if the program is scaled up. It should be noted that the analysis is based on relatively low volumes of SFB boilers replacement/renovation and past trends may not hold going forward. The GoP has signaled the availability of up to approximately PLN 2 billion annually to support the CAPP and is also seeking funding of about EUR 3 billion from the EC's RRF over 2022–2027. The Government is also considering a follow-on application for EU Cohesion funding to support the longer-term CAPP implementation (during the current European semester ending in 2027), which may include a request for additional technical assistance. Such additional funding sources would be helpful to bridge potential funding gaps in the outer years.

69. **Program economic analysis.** The total investment cost (inclusive of taxes) for serving these 813,000 SFBs under the CAPP is estimated at PLN 22.6 billion (US\$5.7 billion), which includes PLN 22.2 billion (US\$5.6 billion) in renovation works (covering both boilers and thermal retrofit measures) and PLN 0.43 billion (US\$0.11 billion) in Program administration costs, which are estimated as 4 percent of administered grants/tax credit or approximately 2 percent of the total investment amount. Based on actual Program data to date, the average cost per SFB is about PLN 27,295 (US\$6,892). For the economic analysis, the total Program cost (investment and Program administration cost) exclusive of taxes are used and the following Program benefits are quantified: economic value of energy saved, air quality improvement, PM₁₀/PM_{2.5} reduction, CO₂ emission reduction, and building maintenance time savings. There are a number of additional benefits for improvements of the building (increased comfort levels,

³⁶ The *Bank Gospodarstwa Krajowego*, or BGK, is the Polish state-owned national development bank. Its main tasks are to support and service export transactions, issue governmental guarantees, and support housing. Founded in 1924, the BGK has worked with a wide range of financiers including the World Bank (for example, Poland Energy Efficiency Project, 2004–2012); EIB; Council of Europe Development Bank; Nordic Investment Bank; EBRD; EC; and others.



extended lifetime of the building, increased property value, and increased safety) which were not quantified in this economic analysis; however, they can be considered as qualitative benefits.³⁷

70. The base case scenario of the economic analysis for the entire Program (assuming renovation of 813,000 buildings) resulted in an economic net present value (ENPV) of PLN 39.8 billion (US\$10.0 billion) and an economic internal rate of return (EIRR) of 42.2 percent. The base case scenario excluding CO₂ benefits shows that the EIRR is 35 percent, which is viable. Sensitivity analyses were also conducted with changes in the investment costs, energy cost savings, and PM₁₀/PM_{2.5} benefits (table 7). Even in the most pessimistic scenario, when the investment costs increase by 20 percent and the energy cost savings and PM₁₀/PM_{2.5} benefits decrease by 20 percent, the ENPV is still positive, and the EIRR does not fall below 5 percent. However, efforts to improve cost estimates and energy savings projections and market development efforts to help reduced equipment and material costs through increased competition will help ensure that these scenarios are avoided, and the economic benefits can be maximized.

Table 7. Sensitivity Analysis for Economic Appraisal of PforR Investments

	Investment Costs Change (%)	Energy Savings Change (%)	PM ₁₀ /PM _{2.5} Benefits Change (%)	Investment Costs (PLN, billions)	Energy Cost savings (PLN, billions)	ENPV (PLN, billions)	EIRR (%)
Base case	—	—	—	18.4	0.028	39.8	42.2
Base case (without CO₂)	—	—	—	18.4	0.028	32.3	34.6
Pessimistic scenario (without CO ₂)	+20	–20	–20	22.08	0.022	20.3	20.3
Moderate scenario (without CO ₂)	+10	–10	–10	20.34	0.025	36.3	26.7
Optimistic scenario (without CO ₂)	–10	+10	+10	16.56	0.030	38.3	45.0

B. Fiduciary

71. The FSA assessed the subsidy component under CAPP and thermo-modernization tax relief part which are currently operational. Thus, the commercial bank component was not included in the scope of the FSA. The World Bank's fiduciary team assessed whether the Program's fiduciary systems provide reasonable assurance that financing proceeds will be used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. Based on the assessment and agreed upon actions to strengthen the system, which are reflected in the PAP, and other mitigation measures, the CAPP's fiduciary systems are considered adequate to meet the World Bank's requirements for the PforR. Due to the inherent nature of claiming tax reliefs, the risk of noncompliance, including unintentional and intentional errors, is higher for the thermo-modernization tax relief component than the subsidy scheme, as the latter has a more robust ex ante and ex post controls and verifications. As a result, the overall fiduciary risk assessed for the reflecting the likelihood of the residual risk materializing and the impact on the achievement of the PDO is Moderate.

72. To address identified areas for improvement, the following risks and mitigation actions are recommended:

³⁷ The main assumptions used to carry out the economic analysis include (a) 4 percent discount rate, (b) 15-year life for boilers and 20-year life for windows/doors and insulation, (c) an exchange rate of PLN 1 = US\$0.2522, (d) an economic value of PLN 157 per kg for PM_{2.5} and PLN 10.45 per kg for PM₁₀, (e) an economic value of US\$40 per ton of CO₂, and (f) the average saved time per day of 30 minutes at a rate of PLN 4,294.67 per month.



- (a) **Governance.** Governance of the PforR is divided into the subsidy component of the CAPP implemented by NFOŚiGW and the 16 independent, regional WFOŚiGWs, and the thermo-modernization tax relief component will be administered by the MoF. However, there is no governing body responsible for the entire Program.

Mitigation measures include convening a high-level intergovernmental Coordination Committee to review progress, identify bottlenecks, and recommend actions that require intergovernmental action (for example, social assistance or related programs for energy poverty, ZUM, ASRs, CEEB, coal phaseout, and so on) (PAP 1).

- (b) **Program financial reporting and external audits.** The financial reporting and auditing framework of the CAPP is dispersed among NFOŚiGW, WFOŚiGWs, and the MoF. On a weekly basis, NFOŚiGW collects Program data, including some basic financial information, from WFOŚiGWs to prepare Program monitoring reports using Excel. However, at present, this information is not publicly disclosed or subject to regular Program audit arrangements. The aggregated information on the thermo-modernization tax relief is available after gathering and processing information from tax returns.

Mitigation measures include preparation of consolidated CAPP financial reports to be signed off by the NFOŚiGW Management Board and, in parallel, a report will be submitted on the thermo-modernization tax relief component by MoF to the Coordination Committee and the World Bank, and both will be audited by an independent auditor acceptable to the World Bank, which would include the Polish Supreme Audit Office (NIK).

- (c) **Internal controls/audit.** Although there is a mechanism to allow oversight of beneficiary projects based on the financial agreements that NFOŚiGW signs with each WFOŚiGW, there has not been a sufficient track record to assess the applications and results of such mechanisms in practice due to the early stage of the CAPP implementation and the ongoing Covid-19 pandemic.

Mitigation measures include revision of oversight procedures under the CAPP to include adjustments in (i) sampling of ex post site visits, (ii) sharing of common deficiencies across regions, (iii) environmental and social checklist, (iv) strengthening of central oversight functions; and (v) a midterm evaluation (PAP 5).

- (d) **FM capacity.** As the Program makes efforts to ramp up the pace of implementation to meet end-of-Program targets (from about 8,000 applications/month to at least 25,000), there is a risk of timely and accurate collecting, processing, and monitoring of Program information, including financial and accounting, as the volumes of transactions increase in various implementing entities and locations. Additional risk relates to the impact and duration of COVID-19, which can materialize in reduced work in offices and access to accounting systems and documents, meetings, site visits, and so on.

Mitigation measures include implementation of secure IT tools for various functions of NFOŚiGW and participating entities, including electronic flow of documents; accounting; and financial and project management, including monitoring and reporting. It is also recommended that the CAPP develop and maintain three-year rolling plans.

73. **Procurement exclusions.** Given the nature of the Program and its moderate risk, it is not envisaged that the Program will finance any contract for works, goods, and consulting services above the



World Bank's Operational Procurement Review Committee (OPRC) thresholds.³⁸ Given the several implementing institutions and the nature of the Program, the Program will not finance any OPRC-level contracts.

C. Environmental and Social

74. An ESSA has been conducted as part of Program preparation. The environmental and social impacts are expected to be limited, site-specific, reversible, and mitigable. Physical works financed under the Program are under DLIs 6 and 7 and include thermal modernization of buildings; installation of renewable energy sources; and replacement of old boilers with more efficient, low emission models. None of the anticipated Program activities are expected to have significant irreversible adverse impacts on the environment and/or affected people. However, it is recognized that the implementing institutions will require some enhancements to their environmental and social management systems, particularly with respect to the ex post reviews. The environmental and social risks of the Program are rated Moderate.

75. **Potential environmental risks.** Potential environmental risks identified through the ESSA relate to (a) improper waste management due to the disposal/recycling of old boilers and construction and demolition waste (for example, old insulation materials, windows, and external doors) (PAP); (b) impacts on bat and bird habitats located under the roofs/in attics of SFBs to be retrofitted (PAP); (c) adverse effects on houses of historical value or objects, such as tiled stoves of certain value (PAP); and (d) health and safety of workers engaged in construction/installation works and household members during works (PAP).

76. **Potential social risks.** The potential social risks identified in the ESSA relate primarily to (a) impacts on vulnerable groups and possible increase of social inequalities due to limited technology capabilities of low-income groups, especially with regard to the online application process (DLI 2); (b) a concern that a change in fuel, from cheap firewood or coal to more expensive alternatives, may affect the recurring energy burden for lower-income households (PAP 1); (c) the limited responsiveness of grievance redress processes (PAP 7); and (d) insufficient Program outreach (DLI 5). With regard to the CAPP procedures, the application process relies heavily upon access to technology (computers and internet), accessibility to the website, and the ability to properly fill in the application. Elderly persons not familiar with using computers and low-income households without access to the internet are at greater risk of non-participation under the CAPP. Agreements with municipalities to support application submission have been established and are being rolled out and expanded to mitigate this risk. As implementation of the CAPP interventions are based on voluntary application requests, it is unlikely that the CAPP will cause undue burden on lower-income households as they would be less likely to request the CAPP inputs. In terms of potential impacts on energy bills, the team has recommended an expansion of, and cooperation with, current social assistance or related energy poverty programs to cover energy burdens in vulnerable SFBs, including those associated with switching to cleaner fuels, which would be subject to dialogue under the enhanced interministerial governance structure (PAP 1). Finally, a lack of consistent information throughout Poland, or incorrect information, may also deter participation or cause persons to make poorly informed decisions.

77. The ESSA recommends the following actions to implement an environmentally and socially sound Program:

³⁸ The OPRC thresholds for moderate risk projects are US\$115 million for works; US\$75 million for goods, IT, and non-consulting services; and US\$30 million for firm consultants.



- (a) Broadening the scope of the CAPP ex post review to confirm adherence to environmental and social aspects through the adoption of an environmental and social checklist for WFOŚiGW to support the ex post review
- (b) Providing supplement training modules for WFOŚiGW staff, banks, supply side actors, and SFB owners, including implementation guides, environmental and social issues, and so on to reduce mistakes, share lessons, and so on
- (c) Strengthening the existing Program outreach efforts
- (d) For the overall CAPP, promoting transition from coal to cleaner fuels, including gas-based heaters
- (e) Supporting further municipal participation in the CAPP.

78. Two additional actions are suggested: (a) establishment of an emissions registry for SFBs, which would allow municipalities in particular to better target support to low-income beneficiaries and strengthen enforcement of ASRs and (b) formalization of the process by which grievances and feedback received from multiple channels are monitored, reviewed, and amalgamated, which will ensure that comments received from stakeholders inform the CAPP planning and implementation.

79. **Climate co-benefits.** The Program is expected to yield substantial climate benefits, in terms of reduced use of dirtier solid fuels (traditional firewood and coal) with cleaner ones (natural gas, district heating, biomass, and electric heat pumps) both from the replacement of boilers and heating and from the thermal renovations which result in lower heat loads. Because all the investments relate to fuel switching and energy efficiency, the Program will result in substantial energy savings (estimated at 1.125 trillion MJ) and corresponding reductions in CO₂ emission (63 million metric tons) and has been preliminarily assessed as having 100 percent climate co-benefits.

Gender

80. The Program will aim to reduce the gender gap in knowledge and awareness of energy efficiency, with the ambition of channeling that awareness into strengthened decision-making within households around investments. It will thus contribute to reducing the gender gap in awareness and knowledge, thereby increasing beneficiaries' voice and agency, one of the four pillars of the World Bank Group Gender Strategy 2016–2023. Analysis conducted for the proposed operation reveals a potential gap in Program uptake due to differences in knowledge, awareness, and agency. The analysis concluded that male and female household decision-makers in Poland have similar access to basic information on the CAPP and energy efficiency investments. However, a quantitative study conducted in late 2020³⁹ as part of biennial surveys for communications programming examines gender and social differences in knowledge and decisions related to CAPP, including attitudes towards climate change, views on air quality, the environment and actions that can be taken to improve the situation, knowledge of CAPP and plans to invest in thermal modernization and heat source replacement. While women show attitudes that are more conducive towards pro-environmental behaviors that are favorable towards heat source replacement and thermal modernization, they are less likely than men to plan to take actions towards energy-saving investments and thermal modernization. This mirrors results from a 2015 qualitative study conducted in eight Europe and Central Asia countries on energy efficiency reforms which revealed that there is a gap between men and women regarding awareness and knowledge of energy efficiency and

³⁹ <https://www.gov.pl/web/klimat/badania-swiadomosci-ekologicznej>



their ability to take actions to improve energy use in their households⁴⁰. Men are generally better informed about topics related to energy efficiency investments and consequently are more involved in making decisions about which energy sources to use. This gap puts women, particularly those in female-headed households, at a disadvantage, as they are less likely to apply and benefit from the Program. Furthermore, as women are typically more likely to spend extensive periods at home, performing household activities related to maintaining the heat source, they are more exposed to harmful pollutants and poor indoor air quality. Having the knowledge about the investment options available will enable female-headed households to purchase cleaner, more energy-efficient heating technologies. Furthermore, female-headed households have slightly lower levels of affordability than male-headed households. The Program will reduce these affordability gaps through tiered subsidy levels of the CAPP that provide greater support to those with more limited incomes per capita.

81. During the first year of the Program, the findings from the study described above will inform the design of the education and awareness outreach campaign (DLI 5) on energy efficiency and conservation at the household level that will include recommendations on energy investment and behavior changes that help save energy. The outreach campaign will be calibrated to the differentiated knowledge that men and women currently have of implementing energy-efficient investments, to ensure that they are equally informed about the investment options and their benefits, how to apply, and how to implement the improvements, and are therefore motivated to apply to the CAPP.

82. The delivery of messages and outreach events should also be adjusted to maximize outreach (for example, choosing the location and timing of outreach channels to enable the greatest number of women to participate). The design of the education and awareness campaign should also be informed by studies of the attitudinal shifts by demographic to further target the campaign messages and channels appropriately. During the life of the Program, regular qualitative or quantitative assessments should be conducted to analyze the effectiveness of the campaign in reaching men and women and inform adjustments to the outreach campaign (if needed). The assessments should probe the impact and effectiveness of increasing awareness and knowledge about energy-efficient technologies and the investment options provided by the Program. The Results Framework includes the following quantitative intermediate results indicator: share of female headed households that implement energy efficiency measures (boiler, window replacement, thermal insulation) in their homes (based on beneficiary survey).

Citizen Engagement

83. The CAPP has multiple structured interfaces established to facilitate engagement with beneficiaries, the public, and stakeholders in a systematic and structured manner through the use of publicly available information, feedback mechanisms, and consultative processes. These include a centralized website with program announcements and information materials, a centralized email address for submitting feedback and queries, beneficiary portals with linked guidelines to support application submission managed by each WFOŚiGW with contact forms that allow for the submission of feedback or questions, and dedicated hotlines. As of October 1, 2021, a total of 2051 municipalities, out of a total of 2,477 municipalities, have concluded an agreement with the Program to support outreach, information provision, and application submission, although the mechanism for two-way interactions through municipalities is limited.

⁴⁰ Reboisio Calderon, P. Michelle, and Sophia V. Georgieva. 2015. *Toward Gender-informed Energy Subsidy Reforms: Findings from Qualitative Studies in Europe and Central Asia*. Washington, DC: World Bank.



84. The CAPP has sought to engage citizens and stakeholders in program reforms. NFOŚiGW conducted consultations with multiple municipalities, regions, and nongovernmental organizations (NGOs) in preparation for improving the CAPP application process and more broadly as part of the May 2020 reforms. Consultations with citizens were conducted with the support of municipalities and NGOs, with input and feedback on the Program design gathered through public meetings and focus groups, which included vulnerable groups. The Program also engaged in learning through closely monitoring pilot programs, particularly outreach channels and low-income beneficiaries, with reports produced and placed online that describe the results of the pilots from both a Program and beneficiary feedback perspective. These engagement approaches were taken to facilitate learning and fed into adjustments in the Program.

85. Citizen engagement will be strengthened by (a) enhancing information campaigns on the benefits of heat source transition and subsidies available, which includes reducing gender gap in knowledge (DLI 5); (b) enhancing beneficiary monitoring through an annual beneficiary satisfaction and social impact survey, disaggregated by gender, age groups and income levels; and (c) public townhall consultations, which will ensure active participation of all groups and include presentations of the annual beneficiary satisfaction and social impact survey. The annual beneficiary survey will allow NFOŚiGW to gather information from Program applications on their satisfaction with the Program, perceptions of impacts of the Program, and relevant feedback to facilitate Program improvement. While this survey has limited means for two-way feedback with beneficiaries or affected persons, collecting these data would help share lessons learned on the experiences of various social groups (that is, age groups, disabled, women, income levels, or vulnerable groups) in the Program and identify bottlenecks that have been experienced. This can be used to encourage further engagement with social partners and vulnerable groups and inform the CAPP on ways to improve Program delivery.

86. The World Bank will provide technical assistance to NFOŚiGW in designing the surveys and developing timely feedback mechanisms to inform the Program and improve two-way communication opportunities. Townhall meetings will allow for formal and inclusive discussions that encourage active participation of all groups around Program progress, beneficiary feedback, and actions taken in response to feedback and will enable two-way channels of engagement with citizens. Given the geographically disbursed nature of SFB households and the few organizations that represent groups of individual household members, the World Bank has recommended that townhalls be conducted both virtually and physically when feasible, for example, through a virtual townhall format that allow persons to participate from home either using computers or phone lines formats. The PAP thus includes an action to strengthen beneficiary monitoring and two-way citizen engagement processes (PAP 7).

Grievance Redress Mechanism

87. Individual persons and organizations can submit complaints to the Environmental Protection Department of the municipality office, the Regional Directorate for Environmental Protection, or the Municipal Police if the regulations are violated. In practice, in most Polish cities, activists and organizations frequently use these channels concerning birds' protection. The CAPP maintains a central phone line at NFOŚiGW, but WFOŚiGWs play the central role in terms of sharing information about the CAPP and receiving complaints about the Program operations. Dedicated phone lines, email and letter contact information, and office staff at the regional level serve as channels for beneficiaries and other affected persons. It is through these avenues that grievances or feedback can be submitted.

88. To ensure that grievances are answered, and feedback is taken into consideration, WFOŚiGWs produce annual reports prepared for NFOŚiGW. However, there is no formalized requirement to describe



grievances submitted and addressed, and feedback received within each region, which would allow NFOŚiGW to analyze feedback and ensure that grievances are properly resolved. The CAPP applications include a description of the appeals procedure in the Regulations for the Call for Applications for CAPP Co-financing and is available online (<https://www.gov.pl/web/gov/skorzystaj-z-programu-czyste-powietrze>). It is expected that most grievances would come from applicants who seek to appeal a rejected application. The application is assessed in accordance with formal criteria. If the application is rejected, the applicant is informed in writing along with a justification. An applicant has 10 days to initiate the appeal process. Within the following 10 days of receiving an appeal, WFOŚiGW staff must reassess the application and make a final decision.

V. GRIEVANCE REDRESS SERVICES

89. Communities and individuals who believe that they are adversely affected as a result of a Bank supported PforR operation, as defined by the applicable policy and procedures, may submit complaints to the existing program grievance redress mechanism or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the GRS, please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit <http://www.inspectionpanel.org>.

VI. KEY RISKS

90. The overall project risk is rated Moderate. As an EU member state, the risk of major economic or energy policy changes is low. However, other sector issues, such as energy pricing, coal phaseout, constraints in support programs to support fuel bills in energy poor SFBs, including social assistance or related programs, and so on remain under active discussion and thus present more moderate risks. Technical and institutional aspects as they relate to the CAPP are Substantial given the size, scope, and complexities of the Program. Fiduciary and safeguard risks are moderate given the institutional experience with implementation of past government programs by the main implementing partners.

91. **The macroeconomic risks are rated Moderate**, as the COVID-19 pandemic and the resulting global economic crisis have increased uncertainties regarding the future growth path. Furthermore, the large economic package announced by the Government to mitigate the economic and social impact of the COVID-19 crisis have reduced fiscal space and increased the need for fiscal consolidation once the economic recovery is on solid footing. A key challenge going forward is to mitigate the social and economic impact of the COVID-19 pandemic; and set the basis for sustained, inclusive, and green recovery. To fund its National Resilience and Recovery Plan, Poland requested EUR 23.9 billion in grants and EUR 12.1 billion of preferential loans under the "Next Generation EU", which is yet to be approved. The NRRP would be implemented by 2023, with disbursements finalized by 2026. The delay of the NRRP poses a downside risk to a resilient and robust recovery. Compliance with national and EU fiscal rules might require moderate fiscal consolidation over the medium term once the recovery is sufficiently robust. The Public Finance Act includes a 55 percent of GDP cautionary threshold for the public debt which, if breached, would normally entail a consolidation program and no deficit for the central and local governments for the following year.



The debt to which the national debt rule applies increased from 41.8 percent of GDP in 2019 to 44.5 percent of GDP in 2020, still well below the 55 percent GDP threshold. While this represents a significant increase in public debt, levels of public debt have remained below the 60 percent of GDP constitutional debt limit (applied to the debt measures using the domestic definition), which prohibits any public borrowing once this threshold is breached, and the 55 percent cautionary GDP threshold. Mitigating factors of these risks include Poland's diversified economy and its sound policy framework. Increased spending efficiency is needed to rebuild fiscal buffers for future countercyclical policies and prepare for the growing fiscal burden arising from the demographic change. Over the medium term, labor market tightening, worsened by the aging population, poses a challenge to the Program due to competition for limited supply-side actors. The PAP and DLIs thus include outreach and training actions that include supply-side actors to help build capacity and continue to support the development of this sector.

92. **Risks associated with sector strategies and policies are Moderate.** While air quality has been a recent priority of the Government, the decentralized nature of ASRs and spotty enforcement do pose risks for the Government's efforts going forward. Given these weaknesses, the CAPP has specifically been developed as a mechanism to encourage SFB owners to switch to cleaner fuels with regulatory enforcement. The transition away from coal has also been a high-profile debate given the huge employment in coal mining and related sectors. While a full transition is beyond the scope of the Program, backsliding to dirtier fuels in the future is possible, but the new proposal by the MoCE to ban coal heating in urban areas by 2030 and rural areas by 2040 would mitigate this risk. A related issue concerns energy prices, which while again outside the scope of the Program, will affect SFB owners' choices for technology and fuel switching under the Program. The PAP thus includes interministerial dialogue on social assistance or related energy poverty programs that can support potentially higher energy bills in vulnerable SFBs and transitions to cleaner fuels. As noted in the technical assessment, the resource requirements over the 10-year Program create inherent risks for future funding gaps particularly in the outer years (beyond the PforR scope). Engagement with the EC, other donors, and commercial banks (DLI 4) remain critically important mitigation measures.

93. **The technical design risk is rated Substantial** given the size of the government program (approximately US\$26.0 billion over 10 years); range and number of implementing entities (NFOŚiGW, 16 WFOŚiGWs, the MoF, commercial banks, contractors, suppliers, and so on); complexities with respect to number of transactions (3 million over 10 years); and variation in subsidy amounts for different income levels, technologies, and renovations. NFOŚiGW has already made a number of changes to help mitigate the technical risks, such as simplification of the application process, introduction of ZUM, development of online calculators, initiation of Program outreach efforts, phaseout coal, and so on. The Program also includes measures, such as the consolidated online monitoring platform, to bring together Program information and reporting data (DLI 3), expanded Program outreach (DLI 5) and training (PAP 2), enhanced Program controls and oversight (PAP 5), and so on. which will collectively help mitigate these risks. However, close supervision in the early years, increased public consultations to solicit feedback on implementation challenges, and increased coordination and cooperation with local governments will also be needed to help ensure that the technical design elements are carried out and adjusted based on implementation realities.

94. **The institutional capacity for implementation and sustainability is also rated Substantial** as the capacity of the implementing entities may be constrained, and the pace of implementation and capacity of partners and contractors may be limited. The pace of implementation has been quite low in the first two years of the CAPP (approximately 8,000 applications per month) so the processing has been manageable. However, as the pace increases to 25,000–30,000 per month, which would be needed to



serve all eligible 3 million SFB owners by the end of the government program, the ability of the implementing agencies to effectively generate demand, process applications, and ensure proper quality of this volume remains to be tested. A critical component to increasing capacities to increase application processing and deal with the flow rests with the inclusion of commercial banks into the CAPP (DLI 4), so SFB owners can apply for the subsidies and loans simultaneously. Program outreach (DLI 5); strengthening of Program monitoring (DLI 3); improved Program planning and oversight (PAP 8, 5); additional training on implementation issues (PAP 2); support for municipal participation (PAP 8), and so on will help mitigate these risks. Achievement of the broader Program objectives is also contingent upon sufficient funding of the Program, particularly in the latter years (beyond the PforR period) as implementation rates increase. Although COVID-19 has reduced fiscal space within the public budget, the CAPP remains financed by the NFOŚiGW revenues, which have been more stable. However, close dialogue with the EC and other government bodies will be helpful to ensure that new funding sources are secured in the coming years.

95. **The fiduciary risk is rated Moderate.** On the procurement side, the Public Procurement Law (PPL) is not applicable to all the CAPP subsidies as the beneficiaries are physical persons, and the amount of the subsidy per SBF is below the threshold. Currently, there is no procurement planned by NFOŚiGW and WFOŚiGWs under the Program. On the FM aspects, key FM risks and mitigation actions relate to dispersed financial reporting and auditing frameworks among multiple implementing entities, and the existing CAPP monitoring reports prepared by NFOŚiGW are not subject to financial audit and made available to the public. Financial information on thermo-modernization tax reliefs is available with a time lag in other statistical reports. PAP 8 includes measures to increase the financial accounting capacity to serve additional volumes of transactions by assigning additional staff and implementing a consolidated financial report.

96. **The environmental and social risks are rated Moderate.** The environmental risk of the Program is assessed as Moderate, given that the interventions involve small civil works on the existing SFBs. The risks and impacts may be associated with improper management of construction/demolition waste and scrap boilers; bat and bird habitats located under the roofs and in attics of SFBs; houses or objects of historical value, such as tiled stoves; and health and safety, which includes workers and household members during works. None of the anticipated Program activities are expected to have significant irreversible adverse impacts on the environment and affected people. It is, therefore, possible to identify and mitigate negative impacts through the implementation of existing national and local policies and regulations, capacity building, and enhancements to the environmental and social management systems.

97. The climate and natural disaster risks of the Program are rated Low, with the greatest risks attributable to flooding. The potential future rise in flood frequency and intensity across northern and central Poland may depreciate the heat source investments made by households in affected parts of the country. A non-negligible share with installations in the basement would be adversely affected. Efforts to increase flood protection of communities living in flood-prone areas are under way, including the World Bank-financed Odra-Vistula Flood Management Project (P147460), which aims to strengthen institutional capacity to mitigate the impact of floods more effectively and support specific investments in flood protection. Zoning and land use laws are already in place to offer partial protection through positioning settlement away from heavily flood-prone areas. While buildings and engineering standards are in place for new buildings, PAP 2 includes enhanced training actions for supply-side actors, which would include greater resilience of investments in flood-prone areas. Furthermore, the expected increase in average temperatures across Poland may reduce some of the expected energy savings of the Program, as the annual demand for heating may decline as a consequence.



ANNEX 1. RESULTS FRAMEWORK MATRIX

Results Framework

COUNTRY: Poland

Clean Air Through Greening Residential Heating Program

Program Development Objective(s)

The Program Development Objectives are to reduce energy use and air pollution emissions from heating sources in Single Family Buildings.

Program Development Objective Indicators by Objectives/Outcomes

Indicator Name	DLI	Baseline	End Target
Adoption of sustainable heating and energy efficiency investments in single family buildings			
Projected energy or fuel savings (CRI, Mega Joules (MJ))		0.00	1,125,000,000,000.00
Reduce emissions that contribute to air pollution in Poland			
Projected lifetime reduction of particulate matter 10 emissions (ton PM10) (Metric ton) (Metric ton)		0.00	433,000.00
Projected lifetime reduction of particulate matter 2.5 emissions (ton PM2.5) (Metric ton)		0.00	369,000.00



Intermediate Results Indicator by Results Areas

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
DLIs				
DLI 1: Adoption of the Act of 28 October 2020 Amending the Act on Supporting Thermo-modernization and Renovation and Certain Other Acts (Text)	DLI 1	Amendment is not adopted.		Adoption of the Act of 28 October 2020 amending the Act on Supporting Thermo-Modernization and Renovation and Certain Other Acts as published in the Borrower’s Journal of Laws, item 2127, that specifically pertain to: (i) the establishment of the Central Registry of Emissions for Buildings (CEEB); (ii) the provision of financial resources to BGK to issue guarantees; and (iii) the transfer of the “Stop Smog Program” to MoCE.
DLI 2: Adoption and operationalization at the national level of the low-income program under CAPP (Text)	DLI 2	No nationally available low-income program in place.	DLR 2.1: NFOŚiGW has announced the first phase of the Low-Income Program on the CAPP website, and at least 100 applications by SFBs to the first phase of the Program have been submitted under the CAPP nationally	DLR 2.2: NFOŚiGW has announced the second phase of the Low-Income Program on the CAPP website, and thereafter at least 100 applications by SFBs have been submitted under the CAPP nationally
DLI 3: Publication and dissemination by NFOŚiGW of a consolidated CAPP progress report based on the centralized CAPP MIS and submission of the said report to the Coordination Committee (Text)	DLI 3	No centralized program management information system (MIS) in place.		Publication and dissemination by the NFOŚiGW of a consolidated CAPP progress report based on the Centralized CAPP Monitoring and Information System and submission of said report to the Coordination Committee.
DLI 4: Mobilization of commercial financing under CAPP, with a one-stop shop provided by eligible financial institutions for loans and subsidy	DLI 4	No formal commercial bank lending or one-stop shop window in place.		Mobilization of commercial financing under the CAPP, with the establishment of a



Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
payments (Text)				financial mechanism with at least 3 Eligible Financial Institutions for the provision of loans and payment of subsidies granted by WFOŚiGWs to eligible SFB owners and at least PLN 50 million worth of loans committed by the Eligible Financial Institutions to SFB owners.
DLI 5: Increased awareness of CAPP based on expanded program outreach campaign (Text)	DLI 5	Rolling 3-month average of number of applications per month received under CAPP is less than 8,000	Rolling 3-month average of number of applications per month received under CAPP in CY2022 is greater than 10,000. Rolling 3-month average of number of applications per month received under CAPP is greater than 12,000. Rolling 3-month average of number of applications per month s received under CAPP is greater than 16,000. Rolling 3-month average of number of applications per month received under CAPP is greater than 25,000.	Rolling 3-month average of number of applications received per month under the CAPP is greater than 30,000.
DLI 6: Number of SFBs that have completed thermal renovations with Eligible Equipment and Materials under the CAPP (Number)	DLI 6	0.00		600,000.00
DLI 7: Number of inefficient and solid fuel boilers replaced with efficient, clean, non-coal heating systems with Eligible Equipment and Materials under the CAPP (Number)	DLI 7	0.00		630,000.00
Program monitoring				
Number of CAPP applications submitted (Number)		0.00		1,460,000.00
Number of applications submitted under Part 1 of CAPP (Number)		0.00		660,000.00



Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Number of applications submitted under Part 2 of CAPP (Number)		0.00		510,000.00
Number of applications submitted under Part 3 of CAPP (Number)		0.00		290,000.00
Number of CAPP applications approved (Number)		0.00		1,220,000.00
Number of beneficiaries in SFBs in which boilers were replaced and/or thermal renovation measures applied (exclusive of SFBs with coal boiler upgrades only) (Number)		0.00		2,800,000.00
Mobilization of private sector financing				
Cumulative loan amount provided by commercial banks participating in CAPP (Amount(USD))		0.00		1,500,000,000.00
Number of commercial banks participating in CAPP (Number)		0.00		3.00
Climate indicators				
Projected lifetime emissions reductions as a result of the energy savings (ton CO2e) (Metric ton)		0.00		63,000,000.00
Number of regions that have adopted anti-smog resolutions (Number)		14.00		16.00
Gender and citizen engagement				
Share of beneficiaries that are female headed households that implement energy efficiency measures (boiler, window replacement, thermal insulation) in their homes. (Percentage)		0.00		15.00
Percentage of SFB owners that are beneficiaries of CAPP who report that engagement processes were effective and met their needs (Percentage)		0.00		50.00
Number of (virtual or in-person) town hall		0.00		4.00



Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
consultations held to elicit feedback from social partners and the public (Number)				



Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Projected energy or fuel savings		Biannual	NFOS program monitoring	The projected lifetime energy savings are estimated based on the number of single family buildings with stove replacements (by efficient, clean, non-coal boilers) and/or thermal renovations under the program.	NFOS
Projected lifetime reduction of particulate matter 10 emissions (ton PM10) (Metric ton)	This indicator measures progress towards reducing particulate matter (diameter of 10 microns or less) emissions resulting from stove replacement (by efficient, clean, non-coal boilers) and/or thermal renovations in single family buildings over the lifetime of the investments.	Biannual	NFOS program monitoring	The projected lifetime reduction of particulate matter emissions are estimated based on the number of single family buildings with stove replacements (by efficient, clean, non-coal boilers) and/or thermal renovations under the program.	NFOS
Projected lifetime reduction of particulate matter 2.5 emissions (ton PM2.5)	This indicator measures progress towards reducing particulate matter (diameter of 2.5 microns or less) emissions resulting from stove replacement	Biannual	NFOS program monitoring	The projected lifetime reduction of particulate matter emissions are estimated based on the number of single family buildings with stove	NFOS



	(by efficient, clean, non-coal boilers) and/or thermal renovations in single family buildings over the lifetime of the investments.			replacements (by efficient, clean, non-coal boilers) and/or thermal renovations under the program.	
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Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
DLI 1: Adoption of the Act of 28 October 2020 Amending the Act on Supporting Thermo-modernization and Renovation and Certain Other Acts	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 2: Adoption and operationalization at the national level of the low-income program under CAPP	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 3: Publication and dissemination by NFOŚiGW of a consolidated CAPP progress report based on the centralized CAPP MIS and submission of the said report to the Coordination Committee	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 4: Mobilization of commercial financing under CAPP, with a one-stop shop provided by eligible financial institutions for loans and subsidy payments	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 5: Increased awareness of CAPP based on expanded program outreach campaign	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 6: Number of SFBs that have completed thermal renovations with Eligible Equipment and Materials under the CAPP	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description
DLI 7: Number of inefficient and solid fuel boilers replaced with efficient, clean, non-coal heating systems with Eligible Equipment and Materials under the CAPP	See DLI description	See DLI description	See DLI description	See DLI description	See DLI description



Number of CAPP applications submitted	Total number of CAPP applications submitted by potential beneficiaries.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Number of applications submitted under Part 1 of CAPP	Total number of applications submitted under Part 1 of CAPP by potential beneficiaries.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Number of applications submitted under Part 2 of CAPP	Total number of applications submitted under Part 2 of CAPP by potential beneficiaries.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Number of applications submitted under Part 3 of CAPP	Total number of applications submitted under Part 3 of CAPP by potential beneficiaries.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Number of CAPP applications approved	Number of CAPP applications approved.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Number of beneficiaries in SFBs in which boilers were replaced and/or thermal renovation measures applied (exclusive of SFBs with coal boiler upgrades only)	Number of beneficiaries living in SFBs in which (i) inefficient, solid fuel boilers were replaced with efficient, clean, non-coal heating systems and/or (ii) thermal renovation measures were applied.	Biannual	NFOS program monitoring	WFOS report data to NFOS through program monitoring system	NFOS
Cumulative loan amount provided by commercial banks participating in CAPP	Cumulative loan amount provided by commercial banks participating in CAPP	Biannual	NFOS program monitoring	Commercial banks provide the data through the NFOS monitoring system.	NFOS
Number of commercial banks participating in CAPP	Number of commercial banks participating in CAPP	Biannual	NFOS program monitoring	Number of commercial banks that have signed	NFOS



				agreements with NFOS and provide loans to CAPP beneficiaries under the program.	
Projected lifetime emissions reductions as a result of the energy savings (ton CO2e)	Projected lifetime emissions reductions as a result of the energy savings	Biannual	NFOS program monitoring	Projected lifetime emissions reductions are estimated based on the lifetime energy savings achieved through the boiler replacement (by clean, efficient, non-coal boilers) and/or thermal renovations in single family buildings.	NFOS
Number of regions that have adopted anti-smog resolutions	Number of target regional governments that have adopted anti-smog resolutions that include restrictions on emissions from the burning of solid fuels for space heating in single-family homes, penalties for noncompliance and mechanisms for monitoring and enforcement.	Biannual	Public bulletins, parliamentary /city council resolutions.	NFOS reporting	NFOS
Share of beneficiaries that are female headed households that implement energy efficiency measures (boiler, window replacement, thermal insulation) in their homes.	Share of female headed households that implement energy efficiency measures (boiler, window replacement, thermal insulation) in their homes.	Annually	Beneficiary surveys	Beneficiary surveys	NFOS



	This indicator should measure the impact of CAPP's outreach and media campaigns that consider gender in their design.				
Percentage of SFB owners that are beneficiaries of CAPP who report that engagement processes were effective and met their needs	Percentage of SFB owners that are beneficiaries of CAPP who report that engagement processes were effective and met their needs. Beneficiary satisfaction will be defined as the share of beneficiaries fully or moderately satisfied with the financial support and procedures of receiving financial support from CAPP.	Annually	Beneficiary surveys	Beneficiary surveys	NFOS
Number of (virtual or in-person) town hall consultations held to elicit feedback from social partners and the public	Number of town hall consultations held to elicit feedback from social partners and the public	Annually	NFOS	NFOS program monitoring	NFOS



ANNEX 2. DISBURSEMENT LINKED INDICATORS, DISBURSEMENT ARRANGEMENTS AND VERIFICATION PROTOCOLS

Disbursement Linked Indicators Matrix				
DLI 1	Adoption of the Act of 28 October 2020 Amending the Act on Supporting Thermo-modernization and Renovation and Certain Other Acts			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Text	20,000,000.00	0.35
Period	Value		Allocated Amount (USD)	Formula
Baseline	Amendments are not adopted.			
Prior Results	Adoption of the Act of 28 October 2020 amending the Act on Supporting Thermo-Modernization and Renovation and Certain Other Acts as published in the Borrower's Journal of Laws, item 2127, that specifically pertain to: (i) the establishment of the Central Registry of Emissions for Buildings (CEEB); (ii) the provision of financial resources to BGK to issue guarantees; and (iii) the transfer of the "Stop Smog Program" to MoCE.		20,000,000.00	NA
CY2022	NA		0.00	NA
CY2023	NA		0.00	NA
CY2024	NA		0.00	NA



CY2025	NA		0.00	NA
CY2026	NA		0.00	NA
CY2027	NA		0.00	NA
DLI 2	Adoption and operationalization at the national level of the low-income program under CAPP			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Text	25,000,000.00	0.44
Period	Value		Allocated Amount (USD)	Formula
Baseline	No nationally available low-income program in place.			
Prior Results	NA		0.00	NA
CY2022	DLR 2.1: NFOŚiGW has announced the first phase of the Low-Income Program on the CAPP website, and at least 100 applications by SFBs to the first phase of the Program have been submitted under the CAPP nationally		5,000,000.00	NA
CY2023	DLR 2.2: NFOŚiGW has announced the second phase of the Low-Income Program on the CAPP website, and thereafter at least 100 applications by SFBs have been submitted under the CAPP nationally		20,000,000.00	NA
CY2024	NA		0.00	NA



CY2025	NA		0.00	NA
CY2026	NA		0.00	NA
CY2027	NA		0.00	NA
DLI 3	Publication and dissemination by NFOŚiGW of a consolidated CAPP progress report based on the centralized CAPP MIS and submission of the said report to the Coordination Committee			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Intermediate Outcome	No	Text	20,000,000.00	0.35
Period	Value		Allocated Amount (USD)	Formula
Baseline	No centralized program monitoring and information system in place.			
Prior Results	NA		0.00	NA
CY2022	NA		0.00	NA
CY2023	Publication and dissemination by the NFOŚiGW of a consolidated CAPP progress report based on the Centralized CAPP Monitoring and Information System and submission of said report to the Coordination Committee.		20,000,000.00	NA
CY2024	NA		0.00	NA
CY2025	NA		0.00	NA
CY2026	NA		0.00	NA



CY2027	NA		0.00	NA
DLI 4	Mobilization of commercial financing under CAPP, with a one-stop shop provided by eligible financial institutions for loans and subsidy payments			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Text	21,000,000.00	0.37
Period	Value		Allocated Amount (USD)	Formula
Baseline	No commercial financing provided under CAPP.			
Prior Results	NA		0.00	NA
CY2022	Mobilization of commercial financing under the CAPP, with the establishment of a financial mechanism with at least 3 Eligible Financial Institutions for the provision of loans and payment of subsidies granted by WFOŚiGWs to eligible SFB owners and at least PLN 50 million worth of loans committed by the Eligible Financial Institutions to SFB owners.		21,000,000.00	NA
CY2023	NA		0.00	NA
CY2024	NA		0.00	NA
CY2025	NA		0.00	NA
CY2026	NA		0.00	NA
CY2027	NA		0.00	NA



DLI 5	Increased awareness of CAPP based on expanded program outreach campaign			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Outcome	No	Text	20,000,000.00	0.35
Period	Value		Allocated Amount (USD)	Formula
Baseline	Rolling 3-month average of number of applications per month received under CAPP is less than 8,000			
Prior Results	0.00		0.00	NA
CY2022	Rolling 3-month average of number of applications per month received under CAPP in CY2022 is greater than 10,000		4,000,000.00	NA
CY2023	Rolling 3-month average of number of applications per month received under CAPP is greater than 12,000		4,000,000.00	NA
CY2024	Rolling 3-month average of number of applications per month s received under CAPP is greater than 16,000		4,000,000.00	NA
CY2025	Rolling 3-month average of number of applications per month received under CAPP is greater than 25,000		4,000,000.00	NA
CY2026	Rolling 3-month average of number of applications per month received under CAPP is greater than 30,000		4,000,000.00	NA



CY2027	NA		0.00	NA
DLI 6	Number of SFBs that have completed thermal renovations with Eligible Equipment and Materials under the CAPP			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Number	72,000,000.00	1.27
Period	Value		Allocated Amount (USD)	Formula
Baseline	0.00			
Prior Results	101,000.00		12,120,000.00	EUR 120.00 per SFB
CY2022	40,000.00		4,800,000.00	EUR 120.00 per SFB
CY2023	77,800.00		9,336,000.00	EUR 120.00 per SFB
CY2024	95,800.00		11,496,000.00	EUR 120.00 per SFB
CY2025	114,800.00		13,776,000.00	EUR 120.00 per SFB
CY2026	132,800.00		15,936,000.00	EUR 120.00 per SFB
CY2027	37,800.00		4,536,000.00	EUR 120.00 per SFB
DLI 7	Number of inefficient and solid fuel boilers replaced with efficient, clean, non-coal heating systems with Eligible Equipment and Materials under the CAPP			
Type of DLI	Scalability	Unit of Measure	Total Allocated Amount (USD)	As % of Total Financing Amount
Output	Yes	Number	72,000,000.00	1.27
Period	Value		Allocated Amount (USD)	Formula



Baseline	0.00		
Prior Results	127,000.00	14,514,286.00	EUR 114.29 per SFB
CY2022	51,000.00	5,828,571.00	EUR 114.29 per SFB
CY2023	75,600.00	8,640,000.00	EUR 114.29 per SFB
CY2024	94,600.00	10,811,429.00	EUR 114.29 per SFB
CY2025	114,600.00	13,097,143.00	EUR 114.29 per SFB
CY2026	133,600.00	15,268,571.00	EUR 114.29 per SFB
CY2027	33,600.00	3,840,000.00	EUR 114.29 per SFB



Verification Protocol Table: Disbursement Linked Indicators

DLI 1	Adoption of the Act of 28 October 2020 Amending the Act on Supporting Thermo-modernization and Renovation and Certain Other Acts
Description	Adoption of legislative amendments to propagate greater uptake for the CAPP and the low-income program, including (a) the establishment of the CEEB to formalize air quality data collection and monitoring, outreach, inspections, and enforcement of solid fuel burning and allow for better regional targeting of program resources; (b) the provision of financial resources to the BGK to issue guarantees to help make loans more accessible to SFBs and enable more commercial banks to join the CAPP; and (c) the transfer of the SSP to the MoCE to allow the CAPP to serve low-income SFB owners.
Data source/ Agency	Government of Poland
Verification Entity	CVA
Procedure	The CVA will verify that the amendment to the Act on supporting thermo-modernization and renovation and some Other Acts of Law have been adopted and published in the Legal Gazette (Journal of Laws of 2020, item 2127) and that the amendments include (i) the establishment of the Central Registry of Emissions for Buildings (CEEB); (ii) the provision of financial resources to BGK to issue guarantees to commercial banks; and (iii) the transfer of the Stop Smog Program to MoCE to allow CAPP to serve low-income SFB owners.
DLI 2	Adoption and operationalization at the national level of the low-income program under CAPP
Description	Design, adoption, and operationalization of the Program or program component targeting low-income households, acceptable to the World Bank, with appropriate subsidy levels, mechanisms for eligibility verification, implementation support, and monitoring to ensure high participation rates. The DLI has two DLR targets. DLR 2.1 will be met when NFOŚiGW has announced the first phase of the low-income program on the CAPP website and included the provisions for the low-income program in the publicly available program website; the World Bank considers that the first phase of the low-income program (subsidy levels, mechanisms for eligibility verification, and monitoring) is acceptable to the World Bank; and at least a total of 100 applications from SFBs for the first phase of the program have been submitted under the CAPP nationally.
Data source/ Agency	NFOŚiGW, World Bank
Verification Entity	CVA



Procedure	<p>DLR 2.1: The CVA will (i) confirm that NFOŚiGW has announced the low-income program on the CAPP website and included the provisions for the low-income program (subsidy levels, eligibility of beneficiaries) in the publicly available CAPP documents, based on agreements with the World Bank; and (ii) verify that a total of 100 applications have been submitted in 3-4 voivodeships by requesting from NFOŚiGW a list of submitted applications and conducting a paper-based comparison between this list and signed application forms, confirming eligibility of the applications.</p> <p>DLR 2.2: The CVA will: (i) confirm that NFOŚiGW has announced the second phase of the low-income program on the CAPP website and included its provisions in the publicly available CAPP documents; (ii) seek confirmation from the World Bank that the second phase of the low-income program (subsidy levels, mechanisms for eligibility verification, extended implementation support and monitoring) is acceptable to the Bank; and (iii) confirm at least 100 applications (dated after the launch of the second phase) have been submitted under the CAPP nationally.</p>
DLI 3	Publication and dissemination by NFOŚiGW of a consolidated CAPP progress report based on the centralized CAPP MIS and submission of the said report to the Coordination Committee
Description	Development and launch of a centralized program management information system (MIS) that brings together key information from applications from WFOŚiGWs, including applications submitted/approved; measures and technologies installed at completion stage; and results achieved at the regional, district, and local levels. The MIS would allow for consolidated CAPP progress to be done. The DLR will be met when the MIS is operational and is used to generate and publish an initial progress report on CAPP to be submitted to a suitable Coordination Committee and the World Bank, and made available on the CAPP website.
Data source/ Agency	NFOŚiGW, Coordination Committee
Verification Entity	CVA
Procedure	The CVA will verify that (i) NFOŚiGW has generated, using the centralized MIS, an initial progress report with key information (i.e., number of applications submitted and approved; measures and technologies installed at completion stage; and results achieved including for results framework at the regional, district and local levels), (ii) NFOŚiGW has published the progress report on its website, and (iii) NFOŚiGW has submitted the progress report to the Coordination Committee.
DLI 4	Mobilization of commercial financing under CAPP, with a one-stop shop provided by eligible financial institutions for loans and subsidy payments
Description	Establishment of a financial mechanism with at least three eligible participating financial institutions (that is, commercial or



	cooperative banks) to combine subsidy payments and loans to eligible SFB owners under a single window under the CAPP. The DLI will be met when at least PLN 50 million in loans have been committed by the eligible financial institutions to SFB owners.
Data source/ Agency	NFOŚiGW, Financial Institutions participating in CAPP
Verification Entity	CVA
Procedure	The CVA will verify that (i) at least three financing agreements with eligible financial institutions (i.e., commercial or cooperative banks) have been signed by reviewing copies of the signed financing agreements from NFOŚiGW and (ii) at least PLN 50 million in loans have been committed by the participating banks. For the latter, the CVA will review progress reports submitted by the banks to NFOŚiGW and randomly select a sample of (e.g., 10-15 loans), for which the CVA will cross-reference information from copies of loan agreements.
DLI 5	Increased awareness of CAPP based on expanded program outreach campaign
Description	Launch an expanded national-level public campaign on the CAPP, with range of media tools, guides, websites, training, and tools to facilitate application preparation and implementation for all Program participants. This could be based on the enhancement of the campaign activities currently being prepared under the shared competence of NFOŚiGW (providing funding for the campaign) and MoCE (design and implementation of the campaign). The outreach efforts should include developing an awareness baseline, testing of messages, and impact monitoring with outcome indicators. The DLI has five DLR targets. DLR 5.1 will be met when the rolling 3-month average of number of applications received per month under the CAPP in 2022 is greater than 10,000. DLR 5.2 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 12,000. DLR 5.3 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 16,000. DLR 5.4 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 25,000. DLR 5.5 will be met when the rolling 3-month average of number of applications received per month under the CAPP is greater than 30,000.
Data source/ Agency	NFOŚiGW
Verification Entity	CVA
Procedure	The CVA will verify the 3-month rolling average of “number of CAPP applications received per month” based on progress reports from NFOŚiGW and verification of the reported numbers on a sample basis (e.g., 0.5%). For the sample, the CVA will review applications for authenticity (for example applicant signature) and consistency with the progress reports submitted



	by NFOŚiGW.
DLI 6	Number of SFBs that have completed thermal renovations with Eligible Equipment and Materials under the CAPP
Description	Number of eligible SFBs that have completed eligible thermo-modernization renovation (for example, installation of insulation, window/door replacement) with eligible materials from annex 2, 2A, or the approved ZUM, completed according to CAPP rules and paid invoice. The scalable indicator is the number of SFBs with thermal renovations completed (disbursement formula: EUR 120.00 per SFB).
Data source/ Agency	NFOŚiGW, WFOŚiGWs, select beneficiary SFBs
Verification Entity	CVA
Procedure	The CVA will request progress reports from NFOŚiGW and verify the reported “number of SFBs that have undergone thermal renovations” based on an approved statistical sampling approach for each batch of verified renovated SFBs which should be about 1% of total completed SFBs in 3 to 4 WFOŚiGWs each year. Completed installations are those for which the final invoice payment has been made. Each year, the sample should cover 3 to 4 different WFOŚiGW so that by the end of the PforR, all WFOŚiGW have been covered in the samples. For the sample, the CVA will conduct a paper-based review and cross-reference sampled information from application forms, approval documents, invoices, and ex-post review documentation if available, and conduct site visits at select SFBs (about 50 SFB visited each year) for visual confirmation that renovation works were completed. The CVA will also confirm that the materials in the approval documents are eligible as per Annex 2, 2A or the ZUM list.
DLI 7	Number of inefficient and solid fuel boilers replaced with efficient, clean, non-coal heating systems with Eligible Equipment and Materials under the CAPP
Description	Number of eligible single-family residential building heating systems that have been removed and dismantled, and replaced with more efficient, cleaner, non-coal units (covered under the eligible equipment in annex 2, 2A, or ZUM) completed according to CAPP rules and paid invoice. The scalable indicator is the number of SFBs with non-coal boiler heating systems replaced (disbursement formula: EUR 114.29 per SFB).
Data source/ Agency	NFOŚiGW, WFOŚiGWs, select beneficiary SFBs
Verification Entity	CVA
Procedure	The CVA will request progress reports from NFOŚiGW and verify the reported “number of inefficient, solid fuel boilers



replaced with efficient, clean, non-coal, heating systems” based on an approved statistical sampling approach for each batch of verified renovated SFBs which should be about 1% of total completed SFBs in 3 to 4 WFOŚiGW each year. Completed installations are those for which the final invoice payment has been made. Each year, the sample should cover 3 to 4 different WFOŚiGW so that by the end of the PforR, all WFOŚiGW have been covered in the samples. For the sample, the CVA will conduct a paper-based review and cross-reference sampled information from application forms, approval documents, invoices, and ex-post review documentation if available, and conduct site visits at select SFBs (about 50 SFB visited each year) for visual confirmation that boiler replacements were completed. The CVA will also confirm that the installed boilers are non-coal units and eligible as per Annex 2, 2A or the ZUM list. For this purpose, NFOŚiGW will provide the CVA a list of ineligible boilers, or with clear instructions to determine the eligibility of boilers under the PforR.



ANNEX 3. (SUMMARY) TECHNICAL ASSESSMENT

Introduction

1. Despite significant efforts to reduce polluting air emissions, Poland has 36 of the 50 cities with the highest annual mean concentration of fine particulate matter in the EU.⁴¹ Annual ambient concentrations of PM_{2.5} in Polish cities often exceed the maximum levels allowed under the EU law and the more stringent WHO air quality guideline value (25 micrograms per cubic meter of air, $\mu\text{g}/\text{m}^3$ and $10 \mu\text{g}/\text{m}^3$, respectively). PM_{2.5} has been shown to cause disease and death associated with lung cancer, chronic obstructive pulmonary disease, ischemic heart disease, stroke, and respiratory illness.⁴² A 2018 World Bank report estimated that the cost of ambient air pollution amounts to about US\$31–40 billion, equivalent to 6.4–8.3 percent of GDP in 2016.
2. While Poland has made substantial progress in reducing air quality pollutants from large-scale industry and power plants mainly in the form of SO₂ and NO_x, PM₁₀ and PM_{2.5} and benzo(a)pyrene in the winter due to space heating remain a serious problem. The residential sector is the largest source of ambient PM_{2.5} pollution in most areas in Poland although the existing national inventories likely underestimate emissions from this sector. Burning of polluting solid fuels such as coal, coal waste, biomass, and waste for heating purposes in small, inefficient boilers and individual stoves in SFBs is the main source of ambient PM_{2.5} pollution in the residential sector, contributing about 80 percent of total emissions.
3. The World Bank conducted two air quality management assessments, which found that ambient concentrations of particulate matter are significantly higher during winter months and during evening hours and weekends, because of the burning of highly polluting solid fuels (for example, coal, biomass, and waste) in small inefficient boilers for heating SFBs. Tackling this sector has been the most challenging. As a result, it is now the highest priority to prevent further mounting of social, health, and economic costs of pollution in the country. Additional important contributors to ambient air pollution include energy, transport, transboundary, industry, and agricultural sources; however, pollution from these sectors is more evenly, spatially, and temporally distributed. The energy sector continues to be an important source of SO₂ and NO_x, and transport continues to be a source of NO_x, although SO₂ and NO_x have decreased by 80 percent and 30 percent, respectively, since 1990 and are no longer considered to be widespread problems across the country. In southern Poland, transboundary sources contribute to PM_{2.5}, reaching more than 60 percent in the *Śląskie voivodeship*.
4. In recent years, the GoP has increased its commitment to improving air quality, as articulated in Poland's National Air Quality Plan, including the adoption of a Clean Air Program with 15 actions agreed by the Council of Ministers in 2018 and the appointment of a Plenipotentiary of the Prime Minister for Clean Air. These actions include the introduction of standards for solid fuels and solid fuel boilers, improved air quality monitoring, education campaigns, vehicle inspection programs, tax and subsidy provisions for cleaner fuels and electric vehicles, and so on. In June 2020, the newly formed MoCE announced a green investment package of PLN 7.8 billion (US\$2.09 billion) to support clean energy, including renewable energy, cogeneration, energy efficiency, electric vehicles, and other measures. Measures to reduce emissions from transportation are articulated in the Clean Transport Package and include support for green public transportation and a focus on electric vehicles: by 2023, Poland's state-

⁴¹ WHO. 2018. WHO Global Ambient Air Quality Database (update 2018).

⁴² EEA. 2019. *Healthy Environment, Healthy Lives: How the Environment Influences Health and Well-being in Europe*. EEA Report No. 21/2019.



owned Electromobility will introduce two electric vehicle models to support the Government's plans to have 1 million electric vehicles on the road by 2025. Regional air quality plans articulated in 2020 include actions to improve air quality at the subnational level. In 14 of the 16 regions, ASRs that allow regions to restrict the use of certain fuels and heating systems have been put in place, and two more are planned in the coming year. The first ASR deadline is approaching in 2022.

5. In addition, the GoP launched the CAPP (referred as 'the Government program' hereafter) in September 2018 to "improve air quality and reduce greenhouse gas emissions by exchanging heat sources and improve energy efficiency in single family housing." The program is a 10-year, PLN 103 billion (US\$26 billion⁴³), initiative aimed at supporting SFB owners to thermally retrofit their homes and replace old, inefficient heating systems with more efficient ones with cleaner fuels. The Government program relies on partial subsidies as the main funding support and has recently approved an expansion to include access to commercial financing, additional provisions for lower-middle-income residents, and improved Program monitoring. In addition, the MoF introduced a 'retrofitting tax allowance' to complement the CAPP.⁴⁴ The Government is now planning to supplement the program's public financing sources and has expressed interest in a World Bank loan to support the CAPP over a five-year implementation period (that is, 2022–2026). EU funds, under the RRF and Cohesion funds, are also being sought.

6. In October 2018, the Government initiated the SSP,⁴⁵ largely as a pilot initiative, to support lower-income SFB owners. The SSP is financed from the national thermo-modernization fund through the municipalities, with higher subsidy rates, and co-financing provided by municipalities. However, agreements for the SSP have only been signed with five municipalities as of the date of this assessment. To support program consolidation and alignment with the CAPP, the SSP was transferred to the MoCE on January 1, 2021.

7. This technical assessment is based on the original design of the program, along with changes that were approved on May 15, 2020,⁴⁶ and that were made operational at the time of assessment in May–July 2020, updated October 2021. The assessment discusses but excludes proposed or approved changes of the program, which were not yet operational at this time, including (a) integration of commercial banks to provide a dedicated loan product in the CAPP and use of the banks' distribution channels ('one-stop shop'); (b) introduction of the central CAPP database and online platform; (c) updated ZUM; (d) legislative changes and agreements with municipalities to increase the level of subsidies for Part 2 beneficiaries; and (e) inclusion of the SSP. This technical assessment has been conducted following the World Bank's PforR financing arrangements and their performance has been assessed in the following areas: strategic relevance, technical soundness, institutional arrangements, expenditure framework, Results Framework and DLIs, and economic justification.

A. Program's Strategic Relevance

8. Poland has made impressive achievements in decoupling energy growth from economic growth but must now deal with serious local and global environmental threats due to its heavy reliance on coal. While its GDP increased sevenfold since the 1990s, its energy intensity declined by 56 percent. However,

⁴³ US\$1 = PLN 3.9646 is the exchange rate used in this assessment.

⁴⁴ Relief granted pursuant to Article 26h of the PIT Act of July 26, 1991, and Article 11 of the Act of November 20, 1998, on flat-rate income tax on certain income earned by natural persons, which has been effective since January 2019.

⁴⁵ Program initiated by Act of December 6, 2018, amending the Act on supporting thermo-modernization and renovation and certain other acts.

⁴⁶ CAPP document version 2.



it remains one of the five most energy-intensive member states in the EU, with its energy intensity almost double that of the EU-27 average (232 kg of oil equivalent per EUR 1,000 of GDP versus 121 kg of oil equivalent⁴⁷). Its GHG emissions intensity of energy consumption is the eighth highest in the EU-27, with 278 g of CO₂ versus 160 g of CO₂ per US\$ (2010 PPP),⁴⁸ while in per capita terms, Poland's GHG emissions are sixth highest in EU-27. Households are the second largest energy users, with about 26.5 percent of total final energy consumption, or around 19.9 Mtoe per year.⁴⁹

9. The Polish building stock comprises more than 6.3 million structures, of which about 308,000 are nonresidential (public and commercial), 535,000 are multifamily apartment buildings, and the remaining 5 million (83 percent of the building stock) are SFBs. About one-third of the SFBs are located in urban areas and two-thirds are in rural areas. The majority, around 80 percent, of the residential SFBs were constructed before 1990, when even basic energy efficiency measures, such as insulation, were rarely used. The final energy consumption for space heating and domestic hot water for these buildings is high (69 percent and 15 percent, respectively) and ranges from 125 to 300 kWh/m² or more. About 84 percent of SFBs in Poland use coal as the main fuel for their heating, amounting to 3.5 million coal-fired boilers (which collectively consume more than 9 billion tons of coal per year). About 28.8 percent of SFBs have boilers that are more than 10 years old, with 3 million of these installations being manually fed boilers, an outdated and inefficient technology which exacerbates the local air pollution.

10. Households living in SFBs, particularly those using solid fuel heat sources, are more likely to be at risk of poverty⁵⁰ and are disproportionately likely to be energy deprived. Households living in SFBs in Poland are more likely to be at risk of income poverty than those living in multifamily buildings: in 2018, 18 percent of the population living in SFBs were at risk of poverty compared to 12 percent of those living in multifamily buildings, and 60 percent of those in the bottom 40 percent of the income distribution live in SFBs. There is furthermore a strong relationship between energy poverty and smog in Poland. Using the low-income-high-cost concept of energy deprivation or energy poverty, energy poverty rates are particularly high among households living in SFBs and using solid fuel to heat their dwellings.⁵¹

Barriers

11. While the replacement of these outdated boilers with more modern, efficient ones along with thermal improvements of SFBs (for example, insulation and window replacement) would yield substantial benefits, several barriers have made this transition challenging, including (a) high up-front costs of thermal retrofits and boiler replacement, (b) potentially higher recurring energy bills, (c) weak and/or inconsistent local air pollution regulations and enforcement, (d) limited access to other infrastructure for heating, (e) overlapping government programs, (f) lack of awareness and know-how, and (g) supply-side market constraints.

12. The Government has tried to address a number of these and related market barriers by making energy efficiency and emissions reduction priorities a cornerstone of its energy policy. In line with the EU's energy and climate targets for 2030, Poland established a 10-year integrated NECP⁵² for 2021–2030, which

⁴⁷ Eurostat, 2017 data checked on July 13, 2020.

⁴⁸ World Bank statistics 2016.

⁴⁹ IEA 2018.

⁵⁰ Using the national 'at risk of poverty' concept, where the poverty line is defined as 60 percent of the national median adult equivalized income.

⁵¹ Kiełczewska, Aneta, Piotr Lewandowski, and Jakob Sokołowski, 2018, *Defining and Measuring Energy Poverty in Poland*. Institute for Structural Research, Policy Note, publication number 01/2019.

⁵² Poland's National Energy and Climate Plan for 2021–2030. <https://www.gov.pl/web/klimat/national-energy-and-climate-plan-for-the-years-2021-2030>.



includes a target of 23 percent renewable energy and improving energy efficiency by 23 percent (from 2007 levels). On December 11, 2020, the EU member states, including Poland, agreed on a joint NDC (EU NDC Update), which includes a reduction in GHG emissions by 55 percent (of 1990 levels). The EU has also strengthened its requirements to ensure that its various directives are implemented, such as the obligation to develop a long-term strategy (LTRS) for the renovation of domestic stocks of residential and nonresidential buildings, public and private, in accordance with Directive 2010/31/EU (Energy Performance in Buildings) amended in 2018, which is under preparation. Finally, in January 2021, Poland issued its 2040 energy policy that commits to increase renewable energy generation from 15 percent to 23 percent (by 2030) and 39 percent (by 2040); reduce energy use by 23 percent and GHG emissions by 30 percent of 1990 levels (by 2030); phase out coal in the residential heating sector, through a ban of coal use in urban areas (2030) and rural areas (2040); phase out coal mining by 2049; and reduce coal-based power generation from 74 percent today to 56 percent (2030) and 11–28 percent (2040).

13. In addition to aligning its legal and regulatory framework to the energy efficiency EU directives, it has worked to establish a suitable institutional framework to support developing the necessary secondary legislation. The NECP specifies that one of the basic measures to reduce GHG emissions in buildings should include the gradual increase of energy standards and thermal insulation and a regulatory push to increase the use of renewable energy for new buildings and buildings under renovation. High demand for energy in buildings is due to low historic energy performance, and standards for existing buildings should be regularly revised based on the cost-optimal reports, which are incomplete,⁵³ and better enforced.

14. In addition to energy policy, the Government has also sought to strengthen its regulatory framework on air pollution. The National Air Protection Program (NAPP) developed and adopted on September 9, 2015, aims to achieve acceptable levels of particulate matter and other harmful substances in the air according to the applicable law. In accordance with Article 96 of the Act of April 27, 2001, Environmental Protection Law (Journal of Laws of 2017, item 519, as amended) the regional council may, by way of resolution, prevent the negative impact on human health or the environment and introduce restrictions or prohibitions in the scope of installations and allowed fuels for heating. Short-term action plans (local air protection plans) prepared by local governments, which consist of short-term actions aimed at reducing the risk of exceeding normative values for limit values, target values or alert thresholds and are an additional tool under the amendment to the act {Environmental Protection Law of September 10, 2015). These plans may be elaborated separately or as part of an air quality program and are adopted through resolution of the *voivodeship* council. Finally, revisions to the Thermo-modernization and Renovation Act will affect the operation and implementation of both the SSP and CAPP to define roles of local governments implementing schemes to support low-income SFB owners, launch a CEEB, and put in place a portfolio guarantee under the BGK to support the entry of commercial banks into the CAPP.

B. CAPP Description

Program Objectives and Implementation Arrangements

15. The objectives of the CAPP are to improve air quality and reduce GHG emissions by exchanging heat sources and improving energy efficiency in SFBs.⁵⁴ The CAPP includes and tracks a number of

⁵³ For Poland, the cost-optimal report is incomplete for existing buildings and there are no estimated cost-optimal energy performance levels for SFBs. Used primary energy conversion factors values are unjustified, which gives unreliable results. https://ec.europa.eu/energy/topics/energy-efficiency/energy-performance-of-buildings/energy-performance-buildings-directive/eu-countries-2018-cost-optimal-reports_en?redir=1.

⁵⁴ <http://czystepowietrze.gov.pl/wp-content/uploads/2020/04/Program-Priorytetowy-Czyste-Powietrze.pdf>.



indicators to measure progress toward the objective. The CAPP was launched in September 2018 and is planned to be implemented until 2029 with (a) commitments signed (signing contracts with the CAPP beneficiaries) by December 31, 2027, and (b) funds disbursed by September 30, 2029. Applications can be submitted by beneficiaries on a continuous, year-round basis. The Program was announced as a PLN 103 billion initiative (CAPP and SSP) with a budget for subsidies, loans to municipalities, and thermo-modernization tax relief of PLN 63.3 billion (US\$16 billion) and loans of PLN 40 billion (US\$10 billion) granted by commercial banks. At the time of this assessment, commercial banks do not participate in the CAPP in a formalized way but may provide commercial loans to SFB owners.

16. The Program is managed by NFOŚiGW under the MoCE and is implemented through the 16 WFOŚiGWs.

- (a) NFOŚiGW is responsible for (i) overall Program coordination and implementation; (ii) development of all Program rules, guidelines, and procedures including SFB and equipment eligibility criteria; (iii) developing financing agreements with the regional WFOŚiGWs; (iv) Program communications and application platforms; (v) Program monitoring, oversight, evaluation, and reporting; and (vi) financial mobilization, management, and disbursements.
- (b) The 16 WFOŚiGWs are responsible for (i) receipt and processing of applications from beneficiaries, (ii) disbursement of grant payments against eligible expenses, (iii) ex post inspections and oversight, and (iv) reporting to NFOŚiGW. Operating under a financing agreement with NFOŚiGW, each WFOŚiGW enters into grant agreements with eligible beneficiaries (that is, SFB owners). WFOŚiGWs also maintain cooperation agreements with participating municipalities. WFOŚiGWs typically establish a separate unit with 15–30 full-time staff responsible for the administration of CAPP and may have three to four local offices to deal with applications in their region locations.

Support Eligibility under the Program

17. The Program uses partial subsidies and tax reliefs to support SFBs in Poland to thermally retrofit their homes and replace outdated and inefficient heating systems with more efficient ones relying on cleaner fuels. An eligible beneficiary is a natural person who (a) is the owner or co-owner of an SFB and (b) has an annual income not exceeding PLN 100,000. The Program subsidizes (i) cost of investment preparation; (ii) replacement of heat source, connections, installations, and ventilation; and (iii) thermal retrofits of SFBs.

- (a) **Cost of investment preparation** includes energy audit, project documentation/design, and ornithological and chiropterological survey (assessment of impact of thermal renovation on bat and bird habitats located under the roof of retrofitted buildings).
- (b) **Cost of replacement of heat sources, connections, installations, and ventilation includes** connection to district heating; replacement of old boiler with a heat pump, gas condensing boiler, oil condensing boiler, coal boiler, wood gasification boiler, wood pellet boiler, or electric heating; gas connection and internal installations; central heating installation and hot utility water installation; mechanical ventilation with heat recovery; and PV micro-installation.
- (c) **Cost of thermal retrofit of SFBs includes** building insulation, windows, and doors.

18. If an investment under the Program includes replacement of the heat source, the old boiler must be dismantled. If an SFB is connected to the gas network, a solid fuel (firewood, coal) boiler is not eligible.



Level of Subsidies

19. For each eligible cost item, the maximum grant amount is capped through both an absolute maximum grant level and a maximum percentage of the incurred costs. The Program foresees two levels of subsidy:

- (a) **Basic subsidy level** (Part 1 for middle- and higher-income households; up to 100 percent of costs of energy audit; up to 50 percent of costs of connection to district heating and solar PV installations; up to 45 percent of costs of heat pumps, wood pellet boilers, and gas connection/boiler room; and up to 30 percent of other costs) for applicants with an annual salary of up to PLN 100,000.
- (b) **Increased level of subsidy** (Part 2 for lower-income households; up to 100 percent of costs of energy audit, up to 75 percent of costs of connection to district heating and gas connection/boiler room, up to 50 percent of costs of solar PV installations, and up to 60 percent of other costs) for households with a net monthly income of up to PLN 1,400 per person (for multi-person households) or up to PLN 1,960 per person (for one-person households). The increased level of subsidy was launched on October 21, 2020.

Tax Relief

20. The GoP complements the CAPP through a tax relief to owners and co-owners of renovated SFBs, which is managed by the MoF and uses its treasury resources. The GoP has amended the law on PIT to introduce a 'retrofitting tax allowance', which became effective in January 2019. The tax allowance enables an applicant to subtract up to PLN 53,000 spent on retrofitting investments from their PIT base. The applicant benefits from not paying tax on the deducted amount; thus, this benefit is larger for richer households facing higher rates of marginal tax. The tax credit can be used by taxpayers filing their taxes according to the tax scale (17 percent or 32 percent), taxpayers paying a flat rate of 19 percent, and taxpayers who pay tax through a lump sum from registered revenues. The tax credit can be claimed over the course of six years up to a maximum of PLN 53,000. Households can claim the entire credit in one year or spread their claim over six years. As such, the tax relief can be used even by lower-income households (Part 2 and low-income beneficiaries) who may spread out their claims over a longer time frame.

Current Program Status

21. As of October 1, 2021, the CAPP has received approximately 325,400 applications for PLN 5.171 billion (US\$1.3 billion) of grants (with PLN 383 million or US\$95.6 million of loans) and has signed 269,400 co-financing agreements for PLN 4.378 billion (US\$1.1 billion) of grants (with PLN 204 million or US\$51 million of loans).

Program Changes

22. Since its inception in 2018, the Program went through various adjustments including (a) simplification of the subsidy levels; (b) simplification of the grant application process and acceleration of processing time (for example, for online applications, only an income statement declaration is required for the basic level of subsidy, processing time for applications reduced to 30 days); (c) integration with the 'My Electricity' program to provide subsidies for solar PV under one application; (d) possibility of receiving subsidies for thermal renovation for beneficiaries who have already replaced their heating systems; (e) retroactive subsidies for investments initiated up to six months before application submission; and (f) launch of Part 2 of the Program for lower-income households on October 21, 2020, allowing them to apply for an elevated subsidy level.



23. Several further adjustments to the Program have been agreed and announced by NFOŚiGW on May 15, 2020,⁵⁵ and NFOŚiGW is working to complete these adjustments: (a) integration of commercial banks including a one-stop shop for banks to provide both the subsidies and loans under one window (to be established in June 2021), (b) introduction of a centralized database and online platform to process applications and support Program monitoring and reporting (to be established in 2022), (c) update of ZUM (completed in February 2021), and (d) phaseout of subsidies for coal boilers under CAPP (by end 2021).

Transition of the SSP to NFOŚiGW

24. In December 2018, the GoP amended the TRF Act to create the SSP to support low-income SFB owners in municipalities that had adopted the ASRs. Under this act, the Ministry of Development and Technology (MoDT) through the TRF (managed by the BGK) provides municipalities with financial resources to implement boiler replacement and thermal retrofit investments for the energy poor. The TRF finances up to 70 percent of the eligible costs (which are capped at PLN 53,000), the municipality finances 20–30 percent of the eligible cost, and the beneficiary contributes between 0 and 10 percent depending on the financial capacity. The SSP was launched in February 2019 and was designed as a pilot to provide support to about 24,000 SFBs until the end of 2024. As of February 26, 2020, seven municipalities⁵⁶ covering 1,027 SFBs joined the SSP, and no investments had been completed. The responsibility for the SSP was transferred from the MoDT to NFOŚiGW under the MoCE in December 2020. This transfer required legislative changes to the act supporting the TRF, which was approved in November 2020 and put into force in December 2020. The revised act includes further changes to operation and implementation of both the SSP and CAPP to facilitate their scale-up and the launch of a CEEB.

C. Program's Technical Soundness

Program Strategic Rationale and Framework

25. **The Program has a strong strategic rationale** as it tackles critical issues of air quality, energy security, and climate change mitigation due to high energy consumption and pollution from old heating sources in older SFBs. The Program is well-aligned with the EU priorities, as noted in the suite of transposed energy efficiency directives, strategy documents (for example, NECP, LTRS), and air quality standards. Many EU countries allocate public funding/subsidies to the residential sector, given the substantial market barriers associated with the high up-front investment costs, long payback periods, and high transaction costs. Investment subsidies have been virtually ubiquitous for housing renovation and energy efficiency programs in other Central and Eastern European countries.

26. **The Program's strategic framework and governance mechanisms could be improved.** A high-level intergovernmental Coordination Committee and the Management Board of the NFOSIGW can improve the governance mechanism of the CAPP. First, a clear link between air pollution, energy, and other environmental strategies (NECP and LTRS) and the CAPP should be established by a suitable

⁵⁵ Most of these changes are aligned with the recommendations made by the World Bank under the Catching-up Regions Energy Efficiency - Phase 3 work supported by the EC, which called for simplification of the CAPP application process and forms, consolidation of income segments, and inclusion of commercial banks to strengthen distribution channels and leverage Program financial resources from commercial bank loans. These recommendations were based on extensive consultations with NFOŚiGW, municipalities, and commercial banks and included a behavioral diagnostic through which key challenges of SFBs were identified. Four working groups have been established to develop each of these operational enhancements.

⁵⁶ These municipalities are Skawina, Sucha Beskiszka, Pszczyna, Niepołomice, Tuchów, Sosnowiec, and Rybnik. The total amount of financing for these seven municipalities amounted to PLN 54.4 million, including PLN 37.4 million from the state budget.



Coordination Committee, and indicator target values⁵⁷ aligned, to coordinate financial resources and implementation capabilities. The Coordination Committee could also take up cross-cutting policy issues, such as how to strengthen and support the achievement of regional ASRs, improve local enforcement, enhance air quality management, expand social assistance or other related energy poverty programs to include provisions for poor SFB owners that transition to cleaner fuels, and so on. The NFOŚiGW Management Board could review and approve three-year CAPP rolling plans; identify and resolve Program implementation issues; review consolidated Program reporting and financial reports/audits covering NFOŚiGW/WFOŚiGWs/banks/MoF's tax relief; approve key changes of the Program; and recommend policy issues that hinder Program implementation for discussion with the high-level Coordination Committee, other line ministries, the Clean Air Plenipotentiary, and so on.

27. **PforR scope.** It is proposed that the scope of the World Bank Program be defined as the full CAPP, which is currently operational including the complementary tax relief scheme under MoF, with two key differences: (a) while the CAPP does include provisions for eligible SFBs to purchase a new, eco-design coal boiler through 2021, the PforR excludes support them and (b) while the CAPP is a 10-year Program, the PforR would be limited to a five-year duration. Over the life of the PforR (that is, 2022–2026), it is estimated that about 813,445 SFBs would be served (thermal renovations, boiler replacement or both).

Program Planning and Design

28. The Program was designed with an objective to “improve the energy efficiency of existing single-family housing resources through thermal modernization and upgrading of heating furnaces.” The CAPP was announced as a 10-year, PLN 103 billion program to serve the estimated 3 million SFBs that rely on polluting fuels for space heating. Although the Program was designed to support SFBs in Poland to thermally retrofit their homes and replace heat sources that are inefficient, do not meet building codes, or are not compliant with ASRs (in regions of Poland which have passed such resolutions), the planning of the Program did not appear to ensure that the Program funding would be sufficient to serve all 3 million SFBs within the 10-year Program period. Nor, at the time, was there analysis done on the ability of the target SFBs to mobilize the co-financing required to undertake the recommended investments.

29. To date, Program applications planning has largely been based on the historical statistics of applications submitted and processed. To date, on average, each month 8,186 applications are submitted, 6,666 applications are signed, and 2,927 are completed. These numbers have been quite stable since the beginning of the Program. However, based on the growing number of applications signed and considering that each application takes about 30 months from submission to closure, the Program funding needs are likely to increase considerably, up to PLN 1.2 billion (US\$300 million) each year. If the pace of applications increases to 25,000 per month to serve all 3 million SFBs within 10 years, the Program funding would need to increase to PLN 3.7 billion (US\$0.92 billion) each year.

30. It did not appear that the Program planning documents clearly determined the total number of SFBs that needed to be served, their funding needs and abilities, the pace of the Program to achieve the end targets, total funding needs, and so on to ensure that the Program was fully successful. Based on the World Bank's analysis, the Program may require considerably more funding, about PLN 147 billion (US\$37.1 billion), to fully serve all 3 million SFBs and would need to serve at least 25,000 SFBs per month to meet the target within the 10-year period. The Program planning framework also does not involve defined interim targets to measure progress against the Program's end goals for monitoring deviations on

⁵⁷ For example, the CAPP final energy consumption reduction indicator of 37,500,000 MWh per year is 863 times the same energy savings target under the 2021–2030 NECP (43,440 MWh).



an annual or multiannual basis. Further, because the Program has been under implementation for about two years, with implementation below the required pace, there is no estimation of the overall CAPP targets' achievement over time and what is the remaining pace of implementation and funding sources that would be required to achieve overall Program objectives by the end of the Program (June 2029) as originally planned.

Summary of Gaps and Recommendations for Program Planning and Design

31. Overall, the CAPP is well justified, addresses critically important public policy goals, and is reasonably well formulated. As with all programs, some issues have been identified in the early implementation period and NFOŚiGW is seeking to make a number of important changes that should improve the pace of implementation. However, the assessment concluded that there are a few aspects that should be addressed as follows:

- **Improved policy planning and coordination.** The assessment found inconsistencies between the NECP/renovation strategy (LTRS) and the CAPP, including alignment of indicator targets, coordination of policies, and so on to coordinate financial resources and implementation capabilities. It is recommended to convene a suitable high-level intergovernmental Coordination Committee to coordinate the CAPP policy issues and links with other programs and strategies related with air pollution, energy, and environment; identify and help address policy gaps; and coordinate financial resources, indicators, and implementation capabilities across programs. The NFOŚiGW Management Board could review three-year CAPP rolling plans, resolve program implementation issues, review consolidated program reporting and financial reports/audits of the CAPP components, and recommend policy issues that hinder program implementation for discussion with the high-level inter-governmental Coordination Committee.
- **Program planning framework.** The assessment concluded that the Program may require additional funding to fully serve all 3 million SFBs and would need to serve at least 25,000 SFBs per month to meet the target within the 10-year period. It is recommended that the Program develop three-year rolling plans with interim targets to measure progress against the Program's end goals and monitor deviations on an annual or multiannual basis. Further, because the Program has been under implementation for about two years, with implementation below the required pace, these interim targets, funding levels, staffing needs, and so on need to be reassessed to ensure that end targets can be met.
- **Funding gaps among lower-income SFB beneficiaries.** A distributional assessment identified three groups of beneficiaries who may have funding gaps, which would need different levels of grants and appropriate delivery mechanisms to facilitate their participation: (i) low-income households (monthly incomes under PLN 800–PLN1,000), which would require higher subsidy levels and (ii) uncreditworthy Part 1 SFB owners (monthly incomes of PLN 1,400–PLN 2,000), which also may be unable to access bank loans. It is recommended that appropriate remedies and implementation mechanisms be developed and operationalized to boost participation rates among the lower-income owners.
- **Subsidy levels.** The use of both measure-level and household-level subsidies increase the administrative burden and potential for errors. The household-level limits also create disincentives for some owners to undertake multiple measures because they risk reaching the SFB cap. It is recommended that the CAPP remove the SFB limits and rely on subsidy limits by measure.



- **Tax relief.** It is recommended that, to clarify which SFB owners have applied for CAPP subsidies and e tax relief, applications include a checkbox to tick if they are applying for both benefits. To strengthen the verification of eligible expenditures, it is recommended that the National Revenue Administration (NRA) apply the same CAPP tools developed for ex post inspections and eligible expenditure verifications.
- **Commercial bank participation.** The Program needs to fully operationalize and scale-up the CAPP banking component to enable them to lend to SFB owners. This includes the completion of the online platform to provide a simpler and integrated online application process, access to ZUM and other tools, the guarantee mechanism, and a Program monitoring system. (As of October 1, 2021, three commercial banks have launched loan products to provide complementary financing through one-stop-shop structures.)

Execution of Program Activities

SFBs Projects Applications Management- and Control-related Activities

32. **Submission of applications.** Applications from eligible SFB owners are submitted electronically through the beneficiary portal established on each WFOŚiGW website and must be followed by signed applications by mail. To accelerate the volume of applications, streamline submission/review, and improve access to co-financing, a number of enhancements to the Program have been approved and are in various stages of being introduced. These include simplified applications; an integrated online portal; one-stop shop with banks; simplified income verification processes; and Program eligibility information and tools (for example, ZUM and grant calculator⁵⁸). For Part 2 beneficiaries there is an agreement in place by which the municipalities (*gminy*) will issue the income certificates for which they will be paid PLN 100 for each income verification. The application process for Part 2 beneficiaries was announced on October 21, 2020, followed by the adoption of legal amendments regarding income verification and certificate of income issued by the municipalities. While the detailed deadlines, method of submission, and processing of applications are set in the rules of procedure for the call for proposals, they need to be updated to reflect the approved modifications to the CAPP including the introduction of commercial banks.

Summary of Gaps and Recommendations for Program Execution

33. The overall execution of the CAPP is relatively strong and the May 2020 revisions, once they are all implemented, will further strengthen implementation. Some additional recommendations have been made to further enhance program effectiveness, quality, and consistency.

- **Improved budget planning.** As the number of applications increase, it is recommended that NFOŚiGW adopt a better budget planning system and predictability to estimate financial resources needs and availability. The multi-annual financial and key indicator plan can be prepared and updated annually on a rolling-up basis to assess the Program's progress and achievement of interim targets.
- **Simplify and standardize energy audits and designs.** To ensure that energy audits and technical designs are of consistent quality, when requested; are of low cost; and promote the most cost-optimal measures, standardization and simplification of energy audit templates and designs could be useful. The Program could also provide simple visual aids, model energy audits/designs and or guidelines, training of contractors, and so on to help guide decision-making.

⁵⁸ The grant calculator is available on NFOŚiGW and all WFOŚiGW websites: <https://czystepowietrze.gov.pl/kalkulator-dotacji/>.



- **Implementation guidelines.** To address the lack of technical knowledge, it is recommended that the CAPP prepare simple videos and guides to help SFB owners through the renovation process, share common deficiencies and lessons, and consider prequalifying program contractors.
- **Improvements for program and renovation oversight.** To improve the risk management and sampling procedures under the Program, it is recommended that the Program specify procedures on the sampling based on the identified risks and develop a system for analyzing these spot checks and identify common issues, installation deficiencies, lessons learned, and so on for dissemination. The NFOŚiGW financing agreements could be strengthened to allow for some centralized oversight by NFOŚiGW to beneficiaries and each WFOŚiGW to check compliance with their application approval, financial, monitoring, and oversight functions.
- **Central MIS.** To collect Program information, payment sources, results achieved, lessons learned, and so on, it is recommended that NFOŚiGW establish a centralized MIS to collect all key information from WFOŚiGWs. Such a system should be linked with the grant payment execution to allow relevant indicators to be collected with electronic payment applications. It is also recommended that the Program consider periodic midterm program evaluations to document both process and impact assessments and make recommendations for Program modifications/enhancements.
- **Program outreach.** Planned outreach efforts could be strengthened to include a variety of media tools and outlets, metrics for assessing impacts (baseline and annual targets), testing of messages, identifying target groups, and so on. The outreach efforts should have annual budget provisions to complete these tasks.

D. Institutional Arrangements

Institutional Environment and Capacity

34. **Program stakeholders.** The main Program stakeholders are the GoP (represented by the MoF and MoCE), NFOŚiGW, WFOŚiGWs, local authorities (*gminas*), SFB owners, and private service providers (for example, equipment suppliers, installers, energy auditors, and program operators). Once the Program is revised, the participating commercial banks will become important stakeholders as a one-stop shop for beneficiaries to apply for the CAPP and access both Program subsidies and loans.

35. **Institutional arrangements.** The MoCE, through NFOŚiGW, is the main implementing agency and is responsible for overall coordination among the other government entities. However, WFOŚiGWs have the day-to-day responsibilities as the primary interface with SFB owners and applicants. The main institutions involved, and their roles and capacities, are as follows:

- (a) **MoF.** The MoF will be the borrower of the PforR loan, and manages the national budget and administers the complementary tax allowances under the CAPP.
- (b) **MoCE.** The MoCE is responsible for conducting the GoP's policy of sustainable development while preserving native natural resources and the Polish landscape, including its climate and energy policies. Under the CAPP, the MoCE is the administrative body responsible for the CAPP's legal and regulatory setup in cooperation with NFOŚiGW and conducts some of the Program communications and outreach. However, the role of MoCE under the Program needs to be clarified and strengthened, so they can plan the proper administrative roles for planning and oversight. One role, as recommended in the previous section is to strengthen



the existing NAPP Steering Committee to ensure that the CAPP and national policies and programs are well aligned.

- (c) **NFOŚiGW.** This public fund, under the MoCE, is tasked to finance and implement various environmental programs including the CAPP. Under the CAPP, NFOŚiGW is responsible for (i) overall Program coordination and implementation; (ii) development of all Program rules, guidelines, and procedures including SFB and equipment eligibility criteria; (iii) development of financing agreements with WFOŚiGWs; (iv) recruitment of participating commercial banks and negotiating their framework agreements; (v) Program communications and application platforms; (vi) Program monitoring, oversight, evaluation, and reporting; and (vii) financial mobilization, management, and disbursements. The governance bodies of NFOŚiGW are the Supervisory Board and the Management Board. While NFOŚiGW's responsibilities under the CAPP are clear, it needs to allocate resources and strengthen capacities for program multiannual budget planning, system controls, centralized monitoring, and outreach and training.
- (d) **WFOŚiGWs.** WFOŚiGWs represent 16 public agencies under the supervision of regional councils and regional governors. Their main functions under the CAPP include (i) receipt and processing of program applications, (ii) disbursement of grant payments against eligible expenses, (iii) ex post inspections and oversight, and (iv) reporting to NFOŚiGW. Operating under a financing agreement with NFOŚiGW, each WFOŚiGW enters into grant agreements with eligible SFB owners. WFOŚiGWs typically establish a separate unit with 15–30 full-time staff in three to four local offices responsible for the administration of the CAPP—application evaluation, agreement preparation, implementation, accounting, and supervision/oversight. WFOŚiGWs generally have the capacity to perform desk verifications of the CAPP applications based on checklists and defined eligibility criteria. WFOŚiGWs are incurring the CAPP administrative costs for additional staff and external inspectors, which are covered by their own resources. WFOŚiGWs appear capable to perform their current tasks as defined under the CAPP but are able to provide limited assistance support to final beneficiaries, have limited capacity for Program promotional activities, or address the needs of low-income SFBs. However, as the pace of applications increase, the capacity of WFOŚiGWs may become strained and the staffing levels appropriately adjusted.
- (e) **Municipalities (*Gminy*).** Municipalities serve as local points of access for SFB owners, verify SFB eligibility based on income, and provide general program information to potential applicants. Around one-quarter of municipalities have signed agreements with NFOŚiGW regarding the CAPP implementation. After changes in the CAPP, the role of municipalities was reduced to advising the residents for sending the application to WFOŚiGW. However, many do not have sufficient, trained staff to undertake more formal program functions. Given that local governments have good knowledge of the needs of low-income SFB owners in their jurisdictions, greater involvement of municipalities should be considered where sufficient interest and capacities exist. Such additional tasks could include advisory support to help SFB owners understand the Program, complete applications, support general outreach, provide feedback and lessons from the field, enhance ASR enforcement, and so on. However, if additional functions are considered, clearer staff roles and responsibilities and additional resources for staff training and budget and staff would be required.
- (f) **Private service providers (auditors/designers, consultants, equipment providers, and contractors/installers).** These companies provide services for energy audits and designs and



deliver heating systems and thermal modernization works. There are many licensed firms that can support the Program—energy auditors, designers, equipment suppliers, contractors, and installers. In April 2020, NFOŚiGW added 12 modules of online training for contractors and other stakeholders on the CAPP website.⁵⁹ The energy auditor and designer requirements and licensing appear to be robust. However, the experience, quality, and capacity of participating companies can vary significantly. It is important to establish more formal and systematic communication and trainings, experience sharing events with energy auditors/designers, sharing of common mistakes and lessons learned from early renovations, and so on to regularly update their knowledge so that they remain engaged in the Program. As feasible, the Program should require qualified contractors to provide equipment warranties, works guarantees, and so on to ensure quality.

- (g) **Participating commercial banks.** Once they are in place, banks will act as one-stop shops for SFB owners who apply for loans/subsidies under the CAPP. Under agreements with NFOŚiGW, they will review and administer loan applications from SFB owners directly, channel subsidies from the relevant WFOŚiGWs, process and disburse parallel loan applications, monitor disbursements and repayments, and report aggregate Program data to NFOŚiGW and WFOŚiGWs. Banks have the capacity to undertake the functions proposed under the revised Program. However, some provisions for Program outreach, training of bank staff, sharing of market data, guides, risk sharing schemes, and so on may be helpful to encourage more banks to join the CAPP and facilitate their participation.

Legal and Regulatory Environment

36. The national policy framework with respect to energy efficiency and air pollution has been aligned with that of the EU. The 2015 NAPP aims to achieve acceptable levels of particulate matter and other harmful substances in the air according to the applicable law. Regional councils are authorized to prevent the negative impact on human health or the environment and introduce restrictions or prohibitions in the scope of installations and allowed fuels for heating. However, the regional regulations remain incomplete, with only 14 out of 16 *voivodeships* adopting ASRs, and enforcement has been generally weak and knowledge about the resolutions and options to comply are relatively low. It remains a voluntary mechanism, with no national standard and limited enforcement or restrictions on the most polluting solid fuels. Even in the regions that have adopted ASRs, knowledge on the resolution has been uneven and enforcement needs to be strengthened. The creation and launch of a central emissions registry is also critically important to allow for improved targeting of resources across *voivodeships* and municipalities, improve monitoring, and enable improved ASR enforcement in the future. Integrating information from the central emissions registry with up-to-date information on the CAPP would expand the ability of all actors to monitor progress and react appropriately. This will be particularly important in those *voivodeships* with ASR deadlines approaching, most notably in Silesia and Małopolska. Other areas, such as expansions to social assistance or other energy poverty related schemes to provide for energy subsidies for SFB owners who are unable to afford basic heating, or switch to cleaner more expensive heating, should be considered.

⁵⁹ #AkademiaCzystegoPowietrza is a series of free webinars for installers, energy advisers, and construction companies. The online webinars are a joint initiative of the MoCE, NFOŚiGW, and Polish Smog Alarm. <http://czystepowietrze.gov.pl/akademiaczystegopowietrza/>.



E. Expenditure Framework

37. To date, the average requested grant amount is PLN 18,233 compared to an approved amount of PLN 17,968 and grant amount paid of PLN 12,083 (for fully and partially completed projects). The requested amount may increase in the future due to higher available grant percentages and the gap between the approved and paid amounts may narrow; however, the composition of households applying to CAPP 2.0 is also likely to shift as lower-income households are diverted to the program that caters to low-income households, the SSP. Based on an analysis of historical trends and grant limit restrictions, there is insufficient evidence to indicate that the average grant levels paid under CAPP 2.0 will significantly increase, unless maximum grant limits per project are removed or rates of support are revised. Based on the historical information, the expected disbursed grant amounts per project will only slightly increase with the operationalization of changes introduced on May 15, 2020, and thus the PforR budget is based on an average grant amount of PLN 13,102.

38. **Program budget.** As noted earlier, the World Bank's Program scope is defined as a five-year time slice (2022-2027) of the CAPP, including the complementary tax relief scheme, but excluding eco-coal boilers. Thus, the PforR would serve an estimated 813,445 SFBs (to support thermal renovations, non-coal boiler replacements, or both), which would lead to expenditures for the construction and installation works, with an average grant amount of PLN 13,102 (US\$3,304) per SFB (48 percent of the total investment) and an average total investment amount of PLN 27,295 (US\$6,884) per SFB and would amount to PLN 22.20 billion (US\$5.6 billion). This total investment cost includes SFB preparation, installation, and construction works. In addition, expenditures would include Program management and monitoring (Program administration) making the total Program budget for subsidies, beneficiary co-financing, and administration equal to PLN 22.63 billion (US\$ 5.7 billion) as shown in table 3.1.

39. **Program funding sources.** Table 3.2 includes the various sources of funding for the Program. This includes about PLN 9.47 billion (US\$2.39 billion) from NFOŚiGW's revenues, PLN 1.96 billion (US\$0.50 billion) from the state budget through tax relief, EUR 250 million from an IBRD PforR loan, and the remaining amount from local funding and SFB owner co-financing. Once commercial banks join the CAPP, they would contribute a portion of the beneficiary co-financing. The planned expenditures are adequate to achieve the Program results for the current volumes and requested grant size of applications for the proposed five-year time slice of the government program excluding support for eco-coal boilers. It should be noted that the analysis is based on relatively low volumes of SFB boilers replacement/renovation (approximately 100,000 per year) and past trends may not hold going forward. However, if the Program is scaled up along the recommendations made in this assessment (that is, introduction of a new low-income program with higher subsidy levels, guarantee schemes to allow commercial banks to join the CAPP, expanded national outreach campaign, and so on) then some supplemental funding would be needed. The Government recognizes this and any approved additions to the Program would have to come with identified future funding sources.



Table 3.1. Program Budget by Categories of Expenditure and Funding Sources⁶⁰

No.	Categories of Expenditures	PforR (5 years) Expenditure (PLN, millions)	PforR (5 years) Expenditure (US\$, millions)
1	Total investment (SFB projects preparation, construction, and installation works)	22,203	5,600
1.1	Białystok	896	226
1.2	Gdańsk	1,359	343
1.3	Katowice	2,897	731
1.4	Kielce	1,337	337
1.5	Kraków	2,508	633
1.6	Lublin	1,371	346
1.7	Łódź	1,451	366
1.8	Olsztyn	799	202
1.9	Opole	519	131
1.10	Poznań	1,744	440
1.11	Rzeszów	1,318	333
1.12	Szczecin	553	139
1.13	Toruń	1,489	375
1.14	Warszawa	2,503	631
1.15	Wrocław	957	241
1.16	Zielona Góra	503	127
2	Administration costs	426	108
2.1	NFOŚIGW	26	6
2.2	WFOŚIGW	315	80
2.3	Municipalities	85	22
	Total [1] + [2]	22,629	5,708

Table 3.2. Program Budget by Funding Sources

No.	Funding Sources	PforR (5 years) Expenditure (PLN, millions)	PforR (5 years) Expenditure (US\$, millions)
1	NFOŚIGW financing for SFBs grants	9,467	2,388
2	World Bank loan	1,190	291
3	Beneficiaries own or borrowed co-financing expenditures	11,546	2,912
3.1	Loans borrowed by beneficiaries	5,773	1,456
3.2	MoF thermo-modernization tax relief	1,963	495
4	Program administering bodies' own funds to cover program administration costs	426	108
	Total [1] + [2] + [3] + [4]	22,629	5,700

⁶⁰ Key assumptions used in tables 3.3 and 3.4: average investment per SFB = PLN 27,084 (US\$6,831); average grant = PLN 13,000 (US\$3,279); number of SFBs served in five years = 813,445; thermo-modernization tax relief 17 percent of SFBs investments value not covered by the CAPP; administration costs of 4 percent of subsidies and tax relief budget. All figures are in 2020 Polish zloty and US dollar.



40. **Budget structure and classification for entire CAPP.** The total expenditures of the entire 10-year CAPP, including tax relief, are estimated as PLN 101.26 billion (US\$25.5 billion, about 4.3 percent of GDP) as noted in table 3.3. The majority of the expenditures (PLN 58.63 billion or US\$ 14.79 billion) are accounted for by subsidies while thermo-modernization tax relief from the state budget is expected to be about PLN 6.23 billion (US\$1.57 billion), and beneficiary co-financing is estimated at PLN 36.66 billion (US\$9.25 billion). The balance of PLN 4.78 billion (US\$1.21 billion) is estimated to cover Program administrative expenditures provided by own sources of the bodies included in Program administration. It should be noted that these figures are based on estimates. While estimates of full budget were originally constructed in the second and third phases of the CuRI, these budgets were based on households applying for the full amount of the subsidy. The budget estimates provided above are based on the actual amounts disbursed since Program inception. These are needed for the expenditure analysis but have not been available, nor has NFOŚiGW indicated a full budget breakdown for the entire Program or indicative breakdowns by funding or expenditure category.

Table 3.3. Total CAPP Expenditures by Funding (10-year forecast)^a

No.	Funding Sources	10 Years Expenditure (PLN, millions)	10 Years Expenditure (US\$, millions)
1	NFOŚiGW/government financing for SFBs grants	58,630	14,789
2	World Bank loan	1,190	291
3	Beneficiaries own co-financing expenditures	36,663	9,248
3.1	Loans borrowed by beneficiaries	30,430	7,675
3.2	MoF thermo-modernization tax relief	6,233	1,572
4	Own resources of program administering bodies to cover program administration costs	3,562	899
5	Administrative costs of lending institutions	1,217	307
	Total [1] + [2] + [3] + [4] + [5]	101,263	25,533

Note: a. Key assumptions used in table 3.3: average investment per SFB = PLN 27,295 (US\$6,884); average grant = PLN 13,102 (US\$3,304) for the CAPP; average grant for low-income households = PLN 47,700 (US\$12,031); number of SFBs served in the CAPP over 10 years = 3,000,000, of which 20 percent are low income; thermo-modernization tax relief of 17 percent of SFBs investments value not covered by the CAPP; administration costs of 4 percent of subsidies and tax relief budget. All figures are in 2020 Polish zloty and US dollar.

41. **Financial sustainability and funding predictability.** The Government has opted to finance the Program with PLN 63.3 billion from NFOŚiGW environment tax revenues, national budget including thermo-modernization tax relief, allocation to the SSP⁶¹, EU funds (under discussion), other public funds, and an estimated PLN 30 billion in private capital in the form of loans granted by commercial banks directly to the SFBs beneficiaries. The overall Program cost is estimated at PLN 101.26 billion, of which PLN 64.86 billion is attributed to subsidies and tax relief. Thus, for the five-year Program, funding appears to be secured; however, for the full 10-year Program, serving all 3 million SFBs, a funding gap may emerge if the Program incorporates many of the additional elements discussed and recommended, such as higher subsidy levels for the poor, an additional municipal loan scheme, outreach, training, centralized monitoring, and so on or if the actual number of SFBs requiring support is higher than estimated.⁶² This is a risk that appears to be outside the World Bank Program but within the full government program.

⁶¹ Program initiated by Act of December 6, 2018, amending the Act on supporting thermo-modernization and renovation and certain other acts.

⁶² 4.1 million SFBs across Poland were estimated to need coal boiler upgrades in World Bank (2018).



Therefore, for the 10-year program period, funding does not appear to be fully secure or predictable at present, particularly as the pace of the Program continues to grow and the scope of the Program continues to evolve. This gap would need to be further assessed and eventually addressed, perhaps by increasing budget support to the Program, mobilizing additional funds from the EU and elsewhere, and/or extending the Program by two to three years beyond the 10-year period or other actions.

42. **Implication of the country's fiscal context.** The risks to the economic and fiscal outlook have increased because of the COVID-19 crisis, even though most analysts expect that the country will prove to be more resilient than other EU countries. GDP contracted by 8.9 percent in Q2 of 2020, compared to 11.9 percent (seasonally unadjusted) in the EU-27.⁶³ According to the Central Statistics Office's preliminary data, real GDP growth rate went down by 2.7 percent in 2020. A moderate recovery is expected over the next couple of years, subject however to important downside risks stemming from uncertainties regarding the duration and evolution of the COVID-19 pandemic and governments' responses. Growth is expected to average 3.5 percent, nevertheless, output is not expected to recover to precrisis level before 2022. A key assumption for this baseline is that the pandemic is contained, and a vaccine is rolled out over the course of 2021. The proposed IBRD loan, which would be financed as a publicly guaranteed debt, would need to be included in the 2021 budget. In fact, the Program has been signaled in the Anti-Crisis Shield to respond to the COVID-19 pandemic as an economic stimulus to help minimize the impact on COVID-19 to the construction sector and support job creation during the recovery phase while lowering the impacts of rising energy prices for many SFB households.

43. **Efficiency of Program planning and expenditures.** The current Program procedures require each WFOŚiGW to continue accepting new applications until the latest program amendments are enacted. Based on the current rate of applications the program would only commit about 120 thousand applications a year, or about PLN 1.5-2.5 billion. Such a pace would only allow the program to serve about 1.2 million SFBs over 10 years, well short of its target of 3 million SFBs within the 10-year program period. To increase the pace of applications, simplified implementation mechanisms through capacity building and training, better outreach campaigns, and higher up-front financing provided from the public funds for the lower-income SFB owners are recommended. Once commercial banks join the Program, their ability to help SFB owners mobilize the co-financing needed to submit their applications and complete their renovations will also help improve Program participation rates. Additional measures (for example, risk sharing mechanisms, training, guides, market data, and so on) could also help attract more resources from the commercial banks.

Summary Recommendations for Program Expenditure Framework

44. **Conclusion.** The risk to the Program stemming from the fiscal situation are assessed as Moderate and mitigated by availability of NFOŚiGW's own resources. The risk from the Program to the fiscal situation are considered to be low. The planned expenditures are adequate to achieve the Program results for the current volumes and requested grant size of applications. The NFOŚiGW financial resources allocated to the Program are adequate, and there are no major historical discrepancies between budget allocations, releases, and actual expenditures. However, for the broader, 10-year government program, allocation of sufficient funding for the outer years is not guaranteed, particularly if the Program is scaled up. It should be noted that the analysis is based on relatively low volumes of SFB boilers replacement/renovation (approximately 100,000 per year) and past trends may not hold going forward.

⁶³ Data for Poland are from flash estimates from Statistics Poland, released on August 14, 2020, while data on the EU are from flash estimates released by Eurostat on July 31, 2020. Both statistics are seasonally unadjusted and provide estimates relative to the first quarter of 2020.



F. Results Framework and Disbursement Linked Indicators

45. The PforR development objectives are to reduce energy use and air pollution emissions from heating sources in single-family buildings. The PforR includes a comprehensive set of activities, from subsidies to technical standards to outreach, to encourage SFB owners to undertake boiler replacements and thermal renovations. Such investments are expected to lead to reduced emissions and energy savings, which will ultimately lead to enhanced energy security, reduced respiratory illness from air pollution, and mitigation of climate change.

46. At the central level, NFOŚiGW and WFOŚiGW perform basic monitoring of the Program activities and outputs. NFOŚiGW collects data from WFOŚiGWs based on agreed parameters: number of registered SFBs, number of received/approved applications, disbursed grants, and so on. The CAPP also has list of indicators and targets. NFOŚiGW maintains a program web page and a register of the received and eligible applications, signed contracts, and amounts committed and disbursed under the Program. However, the Program did not appear to have sufficient analyses to justify the number of eligible SFB owners and other targets developed. The Program also lacks an overall monitoring system mechanism for data collection/reporting and feedback loops for learning and improving Program performance over time.

47. A more robust monitoring and reporting system can facilitate sharing and dissemination of information across the Program. This includes collecting and verifying data from beneficiaries, cleaning and maintaining a wider variety and granularity of program data, collating and reporting, assessing Program impacts and achievement of Program goals, and learning from early implementation to enhance subsequent activities and investments. For example, some of the Program's stated objectives are to improve energy efficiency. However, the Program has not collected data to measure energy savings; energy bill reduction; and improved indoor temperatures (i.e., comfort levels). Given the broad benefits the Program can offer, for example, reduced energy bills, improved comfort levels, reduced air pollution, improved health outcomes, increased property values, and enhanced safety, a more comprehensive set of indicators would help better document the Program's impacts both quantitatively and qualitatively. Further, as noted previously, there are numerous lessons learned from the initial boiler replacements, SFB renovations, grant disbursements, invoicing and payments, and other program administration that should be more systematically collected and assessed, so the Program methodologies, procedures, and guidelines can be continually updated and improved over time. An improved, integrated monitoring and reporting system at the central level, under NFOŚiGW, could be further supported through periodic surveys and evaluations, increased spot checking, periodic evaluations to collect experiences through the country for various training modules, outreach events, and other program communications.

G. Program Economic Evaluation

48. An economic analysis was performed on the Program as a whole (assuming 813,445 SFBs will be renovated with non-coal boilers within 2022–2026 under the CAPP). The analysis is based on a typical reference old building with an average heated area of 131 m², an annual heating load of 168 kWh/m², and an existing solid fuel boiler with 55 percent efficiency (resulting in an annual heating fuel consumption of 305 kWh/m²). Data on the energy savings after installation of different boilers and thermal retrofit measures were derived from the Auditor OZC software program assisting preparation of the energy audits and were based on expert judgement.

49. **Program and investment costs.** The total investment costs for serving these 813,445 SFBs under the CAPP is estimated at PLN 22.63 billion (US\$5.71 billion), which include PLN 22.20 billion (US\$5.60



billion) in renovation works (covering both boilers and thermal retrofit measures) and PLN 0.43 billion (US\$0.11 billion) in Program administration costs, which are estimated as 4 percent of administered grants/tax credit or approximately 2 percent of the total investment amount. Based on actual program data to date, the average investment cost per SFB is about PLN 27,295 (US\$6,884).

50. **Energy savings.** Information on buildings renovated by type of measure were collected from information on implemented applications in the CAPP since its launch. On average, energy savings from heating were estimated at 195 kWh/m² year or 64 percent of the 305 kWh/m² baseline heating fuel consumption.

51. **Economic benefits.** The economic analysis covers the following Program benefits: economic value of energy saved, air quality improvement PM₁₀/PM_{2.5} reduction, CO₂ emission reduction, and building maintenance time savings. There are a number of additional benefits for improvements of the building (increased comfort levels, extended lifetime of the building, increased property value, and increased safety), which were not quantified in this economic analysis; however, they can be considered as qualitative benefits.

52. The main assumptions for the economic analysis include the following:

- **Discount rate.** 4 percent, based on the social value of the EU-funded investment projects
- **Period of assessment.** The analyses were calculated over a 15-year period, based on the useful life of the replaced heating boilers. For other measures (insulation of walls, roof repair/replacement, and replacement of windows) a 20-year useful time was used.
- **Exchange rate.** Analyses were done in Polish zloty at PLN 1 = US\$0.2522.
- **Air pollution (particulate matter) values.** For PM_{2.5}, an economic value of PLN 157 per kg (US\$ 39.6 per kg) and for PM₁₀, a value of PLN10.45 per kg (US\$ 2.63 per kg) were assumed for 2020. Air pollution cost was indexed by an annual 3 percent increase. The share of PM_{2.5} pollution quantity within PM₁₀ was estimated as 46 percent for Poland.⁶⁴
- **CO₂ value.** An economic value of US\$40 per ton was used, based on the World Bank's guidance on using a minimum social value of carbon. CO₂ cost were indexed by an annual 3 percent increase.

53. **Operations and maintenance savings.** Operations and maintenance benefits due to the time saved in the operation of new replaced boiler comparing with the operation of old manual coal/wood fired boiler were also considered. The average saved time per day is estimated conservatively at 30 minutes for purchase/collection, storage, preparation of fuel, and manual operation of coal/wood boiler. The cost of saved time is estimated as average monthly wages and salaries (diminished by obligatory social insurance taxes) PLN 4,294.67 per month (in 2019) with a 3 percent annual increase.

54. **Economic analysis for entire PforR.** The base case scenario of the economic analysis for the entire Program (assuming renovation of 813,445 buildings) resulted in an ENPV of PLN 39.8 billion (US\$10.0 billion) and an EIRR of 42.2 percent. The base case scenario excluding CO₂ benefits shows that the EIRR is 35 percent, which is viable. Sensitivity analyses were also conducted with changes in the investment costs, energy cost savings, and PM₁₀/PM_{2.5} benefits (table 3.4). Even in the most pessimistic scenario, when the investment costs increase by 20 percent and the energy cost savings and PM₁₀/PM_{2.5} benefits decrease by 20 percent, the ENPV is still positive and the EIRR does not fall below 5 percent.

⁶⁴ Based on the World Bank Air Quality Management Report for Poland Figure 3.5. Emissions of PM₁₀, PM_{2.5} (top panel).



55. **Conclusion.** The economic analysis was conducted based on the most accurate and up-to-date program estimates. Based on the results, the Program is economically justified and, thus there is a clear rationale for the public provision of funding to support the Program including the proposed PforR loan. However, the Program will be affected by various scenarios noted in the sensitivity analyses and, therefore, efforts to improve cost estimates and energy savings projections, and market development efforts to help reduced equipment and material costs through increased competition will help ensure that these scenarios are avoided, and the economic benefits can be maximized.

Table 3.4. Sensitivity Analysis for Economic Appraisal of PforR Investments

	Investment Costs Change (%)	Energy Savings Change (%)	PM ₁₀ /PM _{2.5} Benefits Change (%)	Investment Costs (PLN, billions)	Energy Cost savings (PLN, billions)	ENPV (PLN, billions)	EIRR (%)
Base case	—	—	—	18.40	0.028	39.8	42.2
Base case (without CO₂)	—	—	—	18.40	0.028	32.3	34.6
Pessimistic scenario (without CO ₂)	+20	−20	−20	22.08	0.022	20.3	20.3
Moderate scenario (without CO ₂)	+10	−10	−10	20.34	0.025	36.3	26.7
Optimistic scenario (without CO ₂)	−10	+10	+10	16.56	0.030	38.3	45.0

56. **Financial evaluation of boiler upgrades and thermal renovation options.** A financial analysis was carried out to compare the financial feasibility of different heat source replacement technologies (with and without thermal retrofit) for SFB owners. An average SFB with a heated area of 130 m² was assumed and two baseline cases were considered: Case 1 is an old, unrenovated building (old construction, old windows, no thermal insulation) with an annual heating load of 27,000 kWh (or 207 kWh/m²). Case 2 is a partially renovated building (old construction, replaced windows, minimum or partial thermal insulation) with an annual heating load of 17,000 kWh (or 131 kWh/m²). Operational costs for different boiler technologies were based on boiler efficiency, calorific value of fuels, and cost of fuel (table 3.5).

Table 3.5. Operational Cost of Boiler Technologies (cost of heat output)

Fuel (boiler)	Boiler Efficiency (%)	Net Calorific Value of Fuel by Mass kWh/kg	Price of Fuel PLN/unit	Unit of Measure for Price of Fuel	Cost of Heat Output PLN/kWh
Hard coal (old boiler)	55	7.2	887.95	1,000 kg	0.22
Wood 20% moisture content (old boiler)	55	4.1	150.58	m ³	0.09
Hard coal & Wood 20% moisture content (old boiler) ^a	55	—	—	—	0.17
Natural gas (new boiler)	96	10.6	0.193	kWh	0.20
Electricity (new air to water heat pump)	350	n.a.	0.646	kWh	0.18
Wood pelets 10% moisture content (new boiler)	85	4.8	0.906	kg	0.22
Hard coal (new ecodesign boiler)	85	7.5	1,000	1,000 kg	0.16



Note: a. Used in analysis as baseline price based on the coal (58 percent), wood (42 percent) mix which are most common type of fuels.

57. Estimated investment costs for boiler replacements and thermal retrofit measures were based on the CAPP data. An additional cost of PLN 10,000 was added for heat pump installations required to modernize the internal heating system and radiators. Upgrades for each boiler technology were analyzed with and without thermal retrofit. In addition, a combination of an upgrade to a heat pump and installation of solar PV panels, which could (partly) cover the electricity demand required to run the heat pump, was analyzed. Payback periods were determined from the SFB owner's perspective with a 50 percent of grant from the CAPP and an additional grant from the 'My Electricity' program for solar rooftop PV (PLN 5,000). Results for Case 1 and 2 are presented in tables 3.6 and 3.7, respectively. It is important to note that the financial analysis does not consider improvements in comfort (for example, manual feeding of boiler is not required after the upgrade) for the beneficiary. It should be noted that the analysis is based on a range of assumptions; actual results will differ substantially based on house type, location, baseline fuels and costs, and many other factors. Financial benefits are also not the sole motivating factor for the selection of heating systems. Other factors include better levels of comfort, greater convenience, less indoor and outdoor pollution, modern appliances, and so on.

Table 3.6. Financial Analysis of Options for Boiler Replacement and Thermal Retrofits, Case 1

		Total investment cost (PLN)	Investment cost after deduction of grant (PLN)	Energy cost savings (PLN/year)	Payback period for SFB owner (years)
	Baseline Hard coal & Wood (20% moisture content)	0	0	0	-
Boiler replacement only	Condensing gas boiler	13,500	6,750	-847	Not paying back
	Heat pump	35,000	17,500	-419	Not paying back
	Heat pump + rooftop PV 4kW	60,000	22,500	1,650	14
	Pellet Boiler	16,500	8,250	-1,427	Not paying back
	Ecodesign automatic coal boiler	15,000	7,500	333	23
Full thermal retrofit (TR) and boiler replacement	TR+Condensing gas boiler	98,380	49,190	2,402	20
	TR+Heat pump	117,380	58,690	2,574	23
	Full TR+Heat pump+rooftop PV 4kW	147,380	71,190	4,642	15
	TR+Pellet Boiler	102,380	51,190	2,170	24
	TR+Ecodesign automatic coal boiler	100,880	50,440	2,874	18

Table 3.7. Financial Analysis of Options for Boiler Replacement and Thermal Retrofits, Case 2

		Total investment cost (PLN)	Investment cost after deduction of grant (PLN)	Energy cost savings (PLN/year)	Payback period for SFB owner (years)
	Baseline Hard coal & Wood (20% moisture content)	0	0	0	0
Boiler replacement only	Condensing gas boiler	11,000	5,500	-533	Not paying back
	Heat pump	30,000	15,000	-264	Not paying back
	Heat pump + rooftop PV 4kW	65,000	30,000	2,223	13
	Pellet Boiler	15,000	7,500	-899	Not paying back
	Ecodesign automatic coal boiler	13,500	6,750	210	32
Partial thermal retrofit (TR) and boiler replacement	TR+Condensing gas boiler	45,565	22,783	710	32
	TR+Heat pump	64,565	32,283	882	37
	Partial TR+Heat pump+rooftop PV 4kW	89,565	42,283	3,368	13
	TR+Pellet Boiler	49,565	24,783	478	52
	TR+Ecodesign automatic coal boiler	48,065	24,033	1,182	20



ANNEX 4. (SUMMARY) FIDUCIARY SYSTEMS ASSESSMENT

Conclusions

Reasonable Assurance

1. The World Bank's fiduciary team assessed whether the Program's fiduciary systems provide reasonable assurance that financing proceeds will be used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. Based on the assessment and agreed upon actions to strengthen the system, which are reflected in the PAP, and other mitigation measures, the CAPP's fiduciary systems are considered adequate to meet the World Bank's requirements for PforR. The assessment was conducted in period from April 2020 to April 2021 with update in October 2021.
2. **The FSA assessed the subsidy component under CAPP and thermo-modernization tax relief part, which are currently operational.** As the planned commercial bank lending component was still under preparation during the assessment, this component was not included in the scope of this FSA.

Risk Assessment

3. The overall fiduciary risk assessed for the reflecting the likelihood of the residual risk materializing and the impact on the achievement of the PDO is Moderate.
4. Due to the inherent nature of self-assessment by taxpayers and lack of noncompliance of historic data provided by the MoF, the risk of noncompliance, both unintentional and intentional errors, is higher for the thermo-modernization tax relief component than for the subsidy elements, as the latter has robust ex ante and ex post controls and verifications.
5. The key FM risks and mitigations actions are as follows:
 - (a) **Governance.** Governance of the PforR is divided into a subsidy component of the CAPP implemented by the Ministry of Climate and Environment (MoCE) via the National Fund for Environmental Protection and Water Management (NFOŚiGW) and the 16 regional, independent WFOŚiGWs, and a thermo-modernization tax relief component administered by the MoF. However, there is no governing body responsible for the entire Program.
Mitigation measures include convening a high-level inter-governmental Coordination Committee to review progress, identify bottlenecks, and recommend actions that require intergovernmental action (for example, social assistance for energy poverty, ZUM, ASRs, CEEB, coal phaseout, and so on).
 - (b) **Program financial reporting and external audits.** The financial reporting and auditing framework of the CAPP is dispersed among NFOŚiGW, WFOŚiGWs, and the MoF. On a weekly basis, NFOŚiGW collects Program data, including some basic financial information, from WFOŚiGWs to prepare Program monitoring reports using Excel. However, at present, this information is not publicly disclosed or subject to regular Program audit arrangements. The aggregated information on the thermo-modernization tax relief component is available from the MoF after gathering and processing information from tax returns.
Mitigation measures include preparation of consolidated CAPP financial reports including WFOŚiGWs that will be signed off by the NFOŚiGW's Management Board and submitted the Coordination Committee and the World Bank. MoF will submit financial reports on the tax



relief to the Coordination Committee and the World Bank. Both reports will be audited by an independent auditor acceptable to the World Bank, which would include the NIK, and publicly disclosed.

- (c) **Internal controls/audit.** Although there is a mechanism to allow oversight of beneficiary projects based on the financial agreements that NFOŚiGW signs with each WFOŚiGW, but due to the early stage of the CAPP implementation and the ongoing Covid-19 pandemic, to date there has not been a sufficient track record to assess the applications and results of such mechanisms in practice.

Mitigation measures include revision of oversight procedures under CAPP to include adjustments in (i) sampling of ex post site visits, (ii) environmental and social checklist, (iii) sharing of common deficiencies across regions, (iv) strengthening of central oversight functions, and (v) a midterm evaluation.

- (d) **FM capacity.** As the Program makes efforts to ramp up the pace of implementation to meet end-of-Program targets (from about 10,000 applications per month to at least 25,000), there is a risk of timely and accurate collecting, processing, and monitoring of Program information, including financial and accounting, as the volumes of transactions increase in various implementing entities and locations. Additional risk relates to the impact and duration of COVID-19, which can materialize in reduced work offices and access to accounting systems and documents, meetings, site visits, and so on.

Mitigation measures include implementation of secure ICT tools for various functions of NFOŚiGW and participating entities, including electronic flow of documents; accounting; and financial and project management, including monitoring and reporting. It is also recommended that the CAPP develop and maintain three-year rolling plans to define and monitor interim targets, funding levels, staffing, and so on and adjust them to ensure that final program end targets are met and FM capacity for increased transaction volumes is adjusted.

Procurement Exclusions

6. Given the nature of the Program and moderate risk of the Program, it is not envisaged that the Program will finance any contract for works, goods and consulting services above the World Bank's OPRC thresholds.⁶⁵ Given the several implementing institutions and the nature of the Program, the Program will not finance any OPRC-level contracts.

Scope

Scope of FSA and Implementing Agencies Assessed

7. The scope of the Fiduciary System Assessment is based on the existing since 2018 Clean Air Priority Program (CAPP) managed by MoCE, via NFOŚiGW, in cooperation with 16 WFOŚiGWs within the Program boundaries and Program Expenditure Framework defined in the Technical Assessment. The Bank team assessed the existing fiduciary systems of the NFOŚiGW and WFOŚiGWs, MoF, and MoCE for financial management and procurement functions related to CAPP.

⁶⁵ The OPRC thresholds for moderate risk projects are US\$115 million for works; US\$75 million for goods, IT, and non-consulting services; and US\$30 million for firm consultants.



The Government's CAPP

8. **The objective of the Government CAPP.** Improving air quality and reducing GHG emissions by exchanging heat sources and improving energy efficiency in single-family buildings.⁶⁶

9. **The Government CAPP time frame covers 2018–2029** and its scope, eligibility, and procedures are defined in the Program Document adopted by the Management Board of NFOŚiGW in Decision No A/31/1/2018 in June 2018, which is transparently published on the NFOŚiGW website.⁶⁷ The NFOŚiGW 2019 Activity Report⁶⁸ includes a summary description of the CAPP and other information.

10. The Program offers partial subsidy financing for replacing old and inefficient heat sources with solid fuel for modern, cleaner heat sources and for thermal renovations of SFBs (insulation of building partitions and replacement of window and door joinery).

11. **Complementary thermo-modernization tax relief** included in the tax laws and regulations⁶⁹ is offered to eligible personal income taxpayers who are owners and co-owners of renovated SFBs, and it is managed by the MoF through the NRA. This tax relief allows eligible taxpayers to deduct up to PLN 53,000 spent on defined thermo-modernization investments⁷⁰ from their PIT base under condition to complete the investment within three consecutive fiscal years. The maximum amount of PLN 53,000 tax allowance is not connected to particular SFB or household and it is available for each taxpayer being owner or co-owner of SFBs including also both spouses. In case of insufficient incomes in a given year the unused portion of tax deduction can be moved forward and claimed within the next six years. Claimed expenditures have to be reduced by any subsidy or refund obtained from other government programs, including CAPP, to avoid duplication of benefits. On the other side, CAPP subsidies are exempted from PIT.

Review of Public FM Cycle

Planning and Budgeting

Adequacy of Budgets

12. Currently, the CAPP subsidies are financed entirely by NFOŚiGW's funds, which are sufficient to cover existing demand within 2022–2026, which is the time frame for the proposed PforR. However, future funding volumes and sources will need to be confirmed and assessed for the period beyond the PforR (that is, 2027–2029) to ensure sustainability and achievement of Program objectives.

⁶⁶ Through a single-family residential building, pursuant to the Act of July 7, 1994. The Construction Law shall be understood as a free-standing building or a building in a semi-detached, terraced, or group development, serving the needs of housing, constituting a structurally independent unit, in which it is allowed to separate no more than two residential units or one residential unit and a commercial unit with a total area not exceeding 30 percent of the total building area.

⁶⁷ <https://czystepowietrze.gov.pl/>.

⁶⁸ <http://bip.nfosigw.gov.pl/informacja-publiczna/sprawozdania-z-dzialalnosci/sprawozdanie-z-dzialalnosci-nfosigw-za-roku-2019/>

⁶⁹ Relief granted pursuant to Article 26h of the PIT Act of July 26, 1991, and Article 11 of the Act of November 20, 1998, on flat-rate income tax on certain income earned by natural persons, which has been effective since January 2019.

⁷⁰ Decree of the Minister of the Investment and Development dated December 21, 2018 (Journal of Law item 2489) includes the list of types of construction materials, equipment, and services related with implementation of thermo-modernization investments. The thermo-modernization investment is defined in Article 2 point 2 of Act on the Support to the Thermo-modernization and Renovations, and Central Register of Emission for Buildings dated November 21, 2008 (Journal of Law 2021 item 554, with subsequent amendments).



13. Thermo-modernization tax relief that reduces the tax base is available to all eligible taxpayers and the MoF is making estimates of the anticipated tax expenditures, that is, which are reducing tax revenues of the state budget. Estimates should be subject to annual revisions based on microdata.

14. **Budget preparation.** NFOŚiGW, as a state legal entity as defined in the Public Finance Law (Journal of Laws 2021 item 305), is responsible for its own FM, including income obtained from assigned environmental fees, revenues, charges, budget subsidies, EU funding and so on, payments for expenditures, issuing of loans, and provision of grants and subsidies based on an annual financial plan that is attached to the annual State Budget Act.

15. CAPP is financed by the NFOŚiGW funding for which allocations are included in the annual financial plans, which are annexed to the annual State Budget Act in accordance with the budgetary procedures for the public finance sector entities. SFB homeowners are required to cover remaining part of the investments not covered by the subsidies, which can be financed also from commercial bank loans. Each WFOŚiGW prepares annual expenditure forecasts before the start of the fiscal year taking into account the current commitment and expected new project pipeline, and based on this, NFOŚiGW and WFOŚiGWs sign financing agreements with the agreed allocated annual budget. In case of increased demand from the homeowners, there is a possibility to amend the agreement and increase the allocation.

16. **Thermo-modernization tax relief** was effective as of January 1, 2019, and had been preceded by Regulatory Impact Assessment which is required during the legislative process. According to the information related to the personal income tax returns for 2019, 208,000 taxpayers deducted from their income/revenue a total amount of PLN 3,139 million of thermo-modernization expenditures.⁷¹The Macroeconomic Policy Department of the MoF updated estimates of the PIT tax expenditures for 2020–2024 showing a systematic increase from PLN 594 million to PLN 1,058 million. Estimates will be subject to annual revisions based on microdata.

Applicability of Procurement Law under the Program

17. **Due to the status of the beneficiaries (physical persons) to which the CAPP subsidies are provided and the small amount of the subsidies per SFB and the decentralized procurement, the provisions of the PPL are not applicable.**

18. **Legal basis.** The Act of 11 September 2019, which came into force on 1 January 2021 - Public Procurement Law (consolidated text: Journal of Laws of 2019, item 20191). The PPL Act is applied to the award of public contracts by entities, as a general rule, from the public finance sector or other entities (with the scope of action specified in the PPL Act), linked to entities in the public finance sector or entities subjective to the application of the PPL Act.

19. Other entities, especially those from the private sector, are required to apply the PPL Act only if the following conditions are met cumulatively in line with Article 6:

- (a) more than 50% of the value of the contract awarded by this entity is financed from public funds or from the awarding entities referred to in Art. 4 and art. 5 sec. 1 item 1;
- (b) the contract value is equal to or exceeds the EU thresholds;
- (c) the subject of the contract is civil engineering works specified in Annex II to Directive 2014/24 / EU, construction of hospitals, sports facilities, recreation or leisure, school buildings, university buildings or buildings used by public administrations or services related to such construction works.

⁷¹ <https://www.podatki.gov.pl/pit/abc-pit/statystyki/>



20. The CAPP is aimed at owners or co-owners of SFBs with a separate land register and, therefore, are considered private sector entities. In the case of such entities, the PPL shall apply only if the circumstances set out in Article 6. In particular, the value of the contract must be equal to or exceed the so-called 'EU thresholds' which for private entities are:

(a) EUR 214 000 (US\$ 254,000 equivalent) for supplies or services or

(b) EUR 5 350 000 (US\$6,361,000 equivalent) for works.

21. The CAPP grant can be up to PLN 30,000 for the basic grant level and PLN 37,000 for the increased level of funding (US\$7,613 and US\$9,378 equivalent, respectively).

22. Currently, there is no major procurement planned by NFOŚiGW and *voivodeships* funds. NFOŚiGW is now developing Terms of Reference to engage a public relations firm to assist with Program outreach. During the course of the Program's implementation, it may decide to procure additional services as needed. If it needs to hire external entities, such as the IVA, it will follow the PPL, currently in force, and its own internal procurement procedures for low-value contracts below threshold.

Budget Execution

Treasury Management and Funds Flow

23. Funds included in the annual financial plan of NFOŚiGW and in annual financing agreements with WFOŚiGWs are readily available to finance the CAPP implementation through 16 regional WFOŚiGWs. Tax relief expenditures are estimated by the MoF on annual and multiannual basis. Overpayments are refunded to taxpayers in accordance with the Tax Ordinance based on annual tax declarations.

24. The PforR does not finance specific contracts or expenditures but results defined in the DLIs. The World Bank's loan funds would be disbursed to the borrower based on the approved achievement of agreed DLIs. The loan funds will first flow to the foreign currency account maintained by the MoF at the NBP and subsequently they will be converted into local currency (Polish zloty) and credited to the local currency account of the MoF also maintained at the NBP in line with the budgetary procedures.

25. NFOŚiGW (as an entity of the public finance sector managing public funds) will provide a majority of Program funding. Future sources can include the EU funds and commercial bank loans to provide co-financing for final beneficiaries. The CAPP is also financed from WFOŚiGWs' own sources, which offer loans and cover incremental operating cost of the CAPP. The balance of funding will come from SFB owners.

26. Both NFOŚiGW and WFOŚiGWs are maintaining their bank accounts in the BGK, which is a state bank designed for supporting social and economic development of Poland and its public sector in implementation of their tasks. WFOŚiGWs have dedicated bank accounts for the CAPP funds received from NFOŚiGW. Based on the financing agreement, WFOŚiGWs apply first for the advance from NFOŚiGW and after using and documenting 80 percent of the advance payment, they can apply for replenishment, which enables adequate liquidity for the CAPP. Currently, NFOŚiGW does not report any delays in transferring funds to WFOŚiGWs and from WFOŚiGWs to final beneficiaries.

27. **Thermo-modernization tax reliefs** are made available in parallel to eligible PIT taxpayers through the annual tax declarations, which reduce the tax base and, in consequence, the amount of tax payable by those taxpayers in a given year, thus representing a tax expenditure. Tax relief should be claimed in



an annual tax declaration due by April 30 of the subsequent year and in case of tax overpayment, a tax office makes refund within three months in case of submission of a paper tax declaration and within 45 days for electronic submission of tax declaration.

Accounting and Financial Reporting

28. The assessment concluded that the accounting and financial reporting systems are overall acceptable and in line with the national accounting regulations. Currently, financial data and existing monitoring reports are prepared on a weekly basis by NFOŚiGW and serve as the CAPP's financial report to present Program expenditures: subsidies and loans disbursed to the beneficiaries by WFOŚiGWs and compared to the annual plan and overall CAPP budget. The information on the thermo-modernization tax relief should also be provided by the MoF on an annual basis by the end of June or other agreed date for the previous year. Consolidated CAPP financial reports including WFOŚiGWs information and signed off by the NFOŚiGW Management Board, will be submitted to the Coordination Committee and the World Bank. MoF will submit financial reports on the tax relief to the Coordination Committee and the World Bank. Both reports will be subject to annual audit by an independent auditor acceptable to the World Bank, which would include the NIK, and public disclosure.

29. NFOŚiGW and WFOŚiGWs maintain accrual accounting and financial reporting in accordance with the national Accounting Act of September 29, 1994, taking into account the specifics of its activities resulting from the provisions of: Environmental Protection Law, Regulation of the Council of Ministers on the FM of NFOŚiGW and voivodeships funds for environmental protection and water management dated November 16, 2010 (Journal of Laws of 2010 No. 226, item 1479, as amended), Public Finance Law.

30. NFOŚiGW and WFOŚiGWs prepare annual financial statements, including balance sheet, profit and loss account, changes in equity, indirect cash flow statement, additional information, and disclosure.

31. Along with the financial statement, NFOŚiGW and WFOŚiGWs also prepare annual activity reports (not subject to audit), including actual execution of the annual financial plans, and progress of the main programs including the CAPP.

32. NFOŚiGW is using SAP IT accounting system to maintain its main accounting records and ledger.

33. NFOŚiGW is recording transfer of subsidies to 16 WFOŚiGWs, which are ultimately disbursing funds to the final beneficiaries. Regular annual financial reports are providing information at the aggregated level and not showing expenditures of each individual program such as the CAPP.

34. WFOŚiGWs provide data on implementation of the CAPP in the agreed Excel format on a weekly basis (among others, on number and amount of the signed financing agreements and amount disbursed) and on a semiannual basis including more robust information (active and closed agreements, amounts paid out, ecological effects, and so on), which after consolidation are used for project monitoring by the NFOŚiGW Department of Planning and Reporting and by the MoCE. To streamline the CAPP reporting and obtain more detailed information on the financial progress by implementing entities, expenditure types, and disbursement to final beneficiaries, NFOŚiGW started preparation of a central CAPP database and online platform, which would enable online collection of needed information and generation of other useful monitoring reports. This database and platform are also important prerequisites for the participation of commercial banks and other partners in the Program as it would enable communication between the IT systems of the partners. It is expected that the system will be operational by end of 2022.

35. **Thermo-modernization tax relief** claimed in annual tax declarations are recorded in the tax databases of the NRA, including total expenditures which reduce tax base and tax liability. As annual tax



declarations are submitted by April 30 of the subsequent year, information on the expenditures claimed and tax expenditures are calculated with a time lag. The existing budget execution reports⁷² do not include detailed information on tax expenditures, but the MoF is disclosing basic information, such as number of taxpayers and total amounts of thermo-modernization expenditures, in other statistical reports. However, such information has not been so far incorporated into the overall CAPP financial or progress report by the MoCE, which is ultimately the line ministry responsible for clean air.

36. Currently, the financial data collected, and existing monitoring reports prepared on a weekly basis by NFOŚiGW can be used as the CAPP's financial report to present Program expenditures: subsidies and loans disbursed to the beneficiaries, during the reporting period, year to date, cumulatively (from the beginning of the Program) broken down by WFOŚiGW and compared to the annual plan and overall CAPP budget. The information on the thermo-modernization tax relief should also be provided by the MoF on an annual basis by the end of June or other agreed date for the previous year and annexed to the CAPP's financial report. Such concise CAPP financial reports should be included in Program progress reports and be subject to audit and public disclosure.

37. The MoF or the NRA could, as a fiscal transparency enhancement in the medium term, consider preparation and publication of the annual report or tax expenditures reports showing, among others, information on thermo-modernization tax reliefs claimed and effectiveness of the tax incentives, including cost and benefit analysis. In 2021 the Ministry of Finance published on its website the information related to the personal income tax returns for 2019⁷³ including number of taxpayer and amounts deducted using tax reliefs.

Contract Administration

38. Due to the nature of the CAPP, individual homeowners are procuring and managing respective contracts including making payments for the works done and submission of the required documents to WFOŚiGWs for payment or reimbursement. Any cost overruns are borne by the homeowner. The CAPP procedures include submission of contract documents in the payment claim and sample verification of the works done as part of the oversight by the respective WFOŚiGW.

Internal Controls

Internal Controls

39. The assessment concluded that the existing internal controls arrangements of the implementing institutions are sufficient for the Program implementation; however, the thermo-modernization tax relief introduced in 2019 is a new instrument and there is no track record related to compliance verification.

40. Due to the inherent nature of self-assessment by taxpayers, the risk of noncompliance, both unintentional and intentional errors, is higher for thermo-modernization tax reliefs than for subsidy part which has robust ex ante and ex post controls and verifications.

41. Apart from comprehensive internal control processes in NFOŚiGW and WFOŚiGWs related to regular FM functions, including segregation of duties in verification, recording, accounting, accepting and

⁷² <https://www.gov.pl/web/finanse/sprawozdanie-roczne-za-2019-rok>

⁷³ <https://www.podatki.gov.pl/pit/abc-pit/statystyki/>



approving applications for financing and payments, specific procedures related to the CAPP are defined in the NFOŚiGW documents and are applied by WFOŚiGWs.

42. Although there is a mechanism to allow oversight of beneficiary projects based on the financial agreements that NFOŚiGW signs with each WFOŚiGW, but due to early stage of the CAPP and covid-19 pandemic there have been no sufficient track records so far to assess application and results of such mechanism in practice.

43. **Thermo-modernization tax relief** introduced in 2019 as a tax incentive instrument supporting the CAPP is entirely administered by the MoF through its NRA applying its established internal control procedures in line with the Tax Ordinance and other relevant regulations. Physical persons are obliged to submit annual tax declarations by end of April, including taxable revenues, and have the right to deduct eligible costs, tax allowances, or reliefs. Submitted declarations are subject to standard verification procedures in the tax database POLTAXPlus, including automated formal compliance check, and other rules. In case of irregularities, the additional verification procedures or tax audit is initiated.

44. So far, there has been no historic data on noncompliance in application for the thermo-modernization tax relief, as it is a new instrument, and the taxpayers were able to claim this tax relief for the first time for 2019 in their tax declarations submitted until April 30, 2020. Moreover, the thermo-modernization relief is a tax relief which, like any other tax allowance is subject to verification by the tax administration within subsequent five years. Taxpayers subject to an audit have to present documents (invoices and so on) confirming the right to apply for the relief.

45. As thermo-modernization tax relief is offered only to owners and co-owners of SFBs the automated compliance check might include checking whether a taxpayer is de facto owner of an SFB or has applied for a subsidy to NFOŚiGW, whether tax relief is claimed by co-owners, and so on. Such checks might be done using automated exchange of data with third-party databases without the need for personal verification by the tax office staff and taxpayers.

46. **Recommendation.** It is recommended to revise oversight procedures under the CAPP to include adjustments in (a) sampling of ex post site visits, (b) environmental and social checklist, (c) sharing of common deficiencies across regions, (d) strengthening of central oversight functions, and (e) a midterm evaluation.

Internal Audit

47. The internal audit function in NFOŚiGW, WFOŚiGW, MoCE, and MoF operates on the basis of the laws and regulations, but effective implementation needs strengthening especially in area of tax compliance risk management. The results of the planned 2020 internal audit 'the process of supervising disbursements under CAPP' should be shared with the World Bank when completed.

48. Internal audit in accordance with the Public Finance Law encompass independent and objective activities aiming at supporting entity management in implementation of goals and tasks through systematic assessment of managerial control for its adequacy, effectiveness, efficiency, and advisory services. The Minister of Finance issued 'Internal Audit Standards', which are based on international standards and guidance of Committee of Sponsoring Organizations of the Treadway Commission, International Organization of Supreme Audit Institutions, and the Revised Internal Control Standard for Effective Management SEC (2007).

49. In addition, the Audit Committee at the MoCE has the following main tasks: (a) signaling significant risks and deficiencies in internal managerial control and proposing remedies; (b) monitoring and reviewing



the internal audit and managerial control functions and results; and (c) issuing consent for termination of internal audit managers. The summary report of activities of the Audit Committee is published on the website.

50. The control plan of NFOŚiGW for 2020, approved by the Management Board, includes an internal audit called ‘the process of supervising disbursements under CAPP’, which should be completed by the end of 2020.

51. On its website, the MoF publishes plans, executive reports, and declarations confirming compliance of internal control with laws and regulations taking into account efficiency and economy.⁷⁴

52. For 2019, the MoF declared some areas for improvement and identified weaknesses in IT systems, security of information and resources, budget and state finance policy, financial markets and its institutions, tax system and tax collection, administrative and human resource processes, and the MoF assets management. The remedy plan included sealing of the tax system—by implementation of the IT tool for compliance risk analysis.

Program Governance and Anti-Corruption Arrangements

53. **Compliance with anti-corruption governance.** NFOŚiGW has developed the Code of Ethics for their employees, including Anti-Corruption policy, and detailed guidance on how to report and handle fraud and corruption cases. All relevant documents and guidelines with respect to anti-corruption measures are available on the NFOŚiGW’s external website.

54. The Program is subject to the World Bank’s Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing dated February 1, 2012, and revised on July 10, 2015. NFOŚiGW has agreed to inform the World Bank of any credible and material allegations of fraud and corruption arising in the Program (and how the agencies addressed them) in the progress reports, after collecting information from all the participating agencies. The Program progress reports will be provided in an agreed format and frequency. The sample reporting table on allegations of fraud and corruption, which will be a part of Program progress reports, is attached to the full FSA.

55. Complaints about the activities of NFOŚiGW or WFOŚiGWs, including complaints about the implementation of the CAPP, were submitted to the entity and then for consideration to the supervisory authorities, that is, the MoCE. The content of the ‘register of complaints’ shows that in 2019–2020 NFOŚiGW received 32 complaints (against NFOŚiGW and voivodeships funds) regarding the CAPP. The complaints related to delays, rejection of applications, and eligibility issues. There were no filed cases of alleged fraud or corruption.

56. At the request of the supervisory authority, NFOŚiGW addresses the allegations of complaints. If the complaint is considered justified, NFOŚiGW tries to implement the demands contained in the complaint. In practice, legitimate complaints related to the excessive length of the proceedings, and their result is the acceleration of the proceeding of application for funding.

57. Apart from country level anti-corruption regulations and strategy (2018–2020) the MoF defined its Anti-irregularity Policy dated February 18, 2020,⁷⁵ which is applicable to all staff irrespective of the form of engagement. The NRA Internal Inspection Office is responsible for implementation of tasks related

⁷⁴ <https://www.gov.pl/web/finanse/kontrola-zarzadcza>.

⁷⁵ <https://www.mf.gov.pl/documents/764034/6831363/Dz.+Urz.+Min.+Fin.+z+dnia+18+lutego+2020+r.+--+poz.+20+->.



to recognizing, detecting, and combating crimes by staff. Citizens can report irregularities and issues through an online form.

58. The Central Anti-Corruption Bureau (CBA)⁷⁶ is a special service established to combat corruption in public and economic life, particularly in state and local government institutions, and combat activities detrimental to the economic interests of the state. The CBA has a track record in identification of tax and customs frauds and corruptive practices in government institutions.

Auditing

Program Audit

59. Although implementing entities are audited by both private and government auditors, the existing CAPP monitoring reports prepared by NFOŚiGW are not subject to annual audits and publicly disclosed. The proposed solution includes performance of annual audits of the CAPP's financial reports by acceptable auditors based on an agreed scope. NIK would be an auditor acceptable to the World Bank.

60. The existing auditing arrangements include audits of statutory annual financial statements of NFOŚiGW and WFOŚiGWs by independent private auditors selected by the Supervisory Board. Annual audits are conducted in accordance with International Standards on Auditing as endorsed by the National Council of the Statutory Auditors in the National Auditing Standards. The audited financial statements, including audit opinions, are published on the NFOŚiGW website within six months after the end of the financial year, and WFOŚiGWs are publishing their audited financial statements and audit opinion in the 'Court and Economic Monitor' albeit with some time lag. The CAPP expenditures are part of more aggregated cost lines, thus regular financial statements are not showing separate CAPP expenditures.

61. There is no dedicated separate financial report or a single audit of the CAPP; however, subsidies granted by NFOŚiGW and WFOŚiGWs are included in their regular financial statements and subject to annual audits by private sector auditors and by NIK.

62. The NFOŚiGW's financial statements for 2018 and 2019⁷⁷ have been audited by SADREN Biuro Audytorskie Sp. z o.o. (a small audit firm), which issued an unmodified opinion with emphasis of matter due to the application of cash basis for recognition of the main revenues, including fees, fines, and receivables, and valuation method of the shares held in a subsidiary bank BOŚ, which does not reflect the market value.

63. NIK has the capacity and mandate to perform financial, compliance, and performance audits of budget execution, defined programs, or selected areas. NIK has also been performing audits of several World Bank-financed projects (for example, in flood protection, social assistance, and coal sector). In addition, NFOŚiGW, because of its size in the state budget, is covered by a NIK audit of the execution of its financial plans. In its audit plan for 2021, NIK⁷⁸ has included a one-off performance audit (No. P/21/053) of the implementation and results of the CAPP. The audit report will be ready by the end of 2021. Therefore, NIK is well placed to perform annual audits of the CAPP's financial reports.

64. The most recent NIK report for 2019,⁷⁹ available on the website, includes a descriptive opinion (which is neither positive nor negative) on the execution of the NFOŚiGW's financial plan showing significant variations compared to the originally planned revenues and expenditures. However, NIK

⁷⁶ <https://cba.gov.pl/pl/o-cba/uprawnienia/349,uprawnienia.html>.

⁷⁷ <http://archiwum.nfosigw.gov.pl/o-nfosigw/organizacja-i-dzialalnosc/sprawozdania-z-dzialalnosci/>

⁷⁸ <https://www.nik.gov.pl/plik/id,23327.pdf>.

⁷⁹ <https://www.nik.gov.pl/plik/id,22407.pdf>.



positively assessed the reliability and credibility of the books of accounts, financial statements, and compliance of accounting system with accounting principles. The report did identify a number of irregularities included in the long form report related to insufficient functioning of the managerial and internal control procedures.

65. Execution of the state budget, including also budget part 77 on taxes and other state budget revenues,⁸⁰ is subject to annual audit performed by NIK, which results are published on the website.⁸¹ NIK issued a positive opinion on the execution of budget part 77 managed by the MoF in 2019. Budgetary report Rb-27 was prepared on time and correctly in terms of content and formal accounting compliance. No irregularities have been identified with the scope of the audit.

66. Budget execution reports are prepared in line with the national methodology on cash basis. Tax expenditures are not separately disclosed and are netted off with related tax revenues. Basic information on thermo-modernization tax relief, such as number of taxpayers and corresponding amounts claimed, are disclosed in the statistical information on the MoF's website with some time lag (data for 2019 was disclosed in 2021).⁸²

67. To increase fiscal transparency in the medium term, the MoF or NRA could consider preparation of annual reports showing financial revenues within its remit showing revenues by various segments and types, tax expenditures, main tax gaps, and other key performance indicators. The International Public Sector Accounting Standards provide guidance on recognition, measurement, and disclosure of additional information in relation to tax and other government revenues.

Procurement and FM Capacity

Staffing

68. The existing staff are generally able to perform the required functions. However, due to the potential large-scale and high volume of transactions, the implementation teams should be strengthened and supported by smart IT processing tools and demand rises.

69. NFOŚiGW has sufficient capacity, including qualified staff, to carry out the its fiduciary functions as the project management and coordinating agency. The key staff of the Financial and Procurement Departments have experience in implementation of various projects, and they will continue to be in charge of the fiduciary responsibilities during the CAPP implementation. NFOŚiGW, together with the network of 16 regional WFOŚiGWs, has vast experience in the implementation of many environmental projects including ones with EU funding. However, to achieve the final targets under the CAPP, the volumes of processed transactions would need to triple, which would require additional staff and/or smart IT processing tools.

Program-specific Fiduciary Responsibilities

70. NFOŚiGW as the CAPP's managing entity will work with 16 WFOŚiGWs and municipal authorities on the monitoring of agreed actions and their reporting and verification. Both NFOŚiGW and WFOŚiGWs are supervised by the MoCE. In terms of fiduciary responsibilities, NFOŚiGW will be responsible for the following:

⁸⁰ <https://www.gov.pl/web/finanse/2020-r3>.

⁸¹ <https://www.nik.gov.pl/plik/id,22414.pdf>.

⁸² <https://www.podatki.gov.pl/pit/abc-pit/statystyki/>



- Ensure that the CAPP procedures and instructions are up to date and applied, including details on fiduciary responsibilities of NFOŚiGW.
- Ensure that the implementing institutions are provided with sufficient resources for achievement of DLIs, through the regular transfer of funds.
- NFOŚiGW will receive and analyze detailed financial and other data related to respective activities of the implementing institutions, which will serve as a basis for ongoing project monitoring and to determine appropriate transfer of funds.
- Prepare withdrawal applications for the World Bank, for advance and then upon achievement of DLIs.
- Prepare the CAPP financial monitoring reports, including information from the implementing institutions.
- Coordinate the procedure for annual and other audits covering the CAPP as well as submission of annual audit reports to the World Bank.

71. WFOŚiGWs will be responsible for following:

- Ensure that the CAPP procedures and instructions are applied, among others, receipt and processing of applications from beneficiaries; disbursement of grant payments against eligible expenses; ex post inspections and oversight; and reporting to NFOŚiGW, including financial and other program data.
- Prepare the CAPP financial monitoring reports at the WFOŚiGW level.
- Prepare annual reports subject to audit and their submission to NFOŚiGW.

72. The MoF will be responsible for

- Ensuring of proper application of FM procedures related to the thermo-modernization tax reliefs, including tax compliance risk management, ex ante verification procedures, and sample verification activities; gathering, processing, and reporting related tax data; and conducting tax incentive effectiveness assessments;
- Authorization of withdrawal applications to the World Bank;
- Preparation and submission of financial information on thermo-modernization tax relief to the Coordination Committee; and
- Participation in the annual audit procedures.

Table 4.1. Program Systems and Capacity Improvements

Risk/Area	Mitigation Action	Timing	Type of Action (PAP, DLI, and so on)
1. Fraud and corruption	Promptly inform the World Bank of any credible and material allegations of fraud/and/or corruption regarding the Program as part of the overall Program reporting requirements.	Semiannual Program progress report	Loan agreement
2. Governance structure	Convene a high-level intergovernmental Coordination Committee to review progress, identify bottlenecks, and recommend actions that require intergovernmental action (for example social assistance for energy poverty, ASRs, ZUM, CEEB, coal phaseout, and so on).	September 30, 2022	PAP 1



Risk/Area	Mitigation Action	Timing	Type of Action (PAP, DLI, and so on)
3. Program financial reporting and external audit	NFOŚiGW Management Board will sign off consolidated CAPP financial reports including. WFOSIGWs, and submit them to the Coordination Committee and to the World Bank. MoF will submit financial reports on the tax relief to the Coordination Committee and to the World Bank. Both reports will be audited by an independent auditor acceptable to the World Bank, which would include the NIK, and publicly disclosed.	Annually, the first audited financial report by December 31, 2022	PAP 4
4. FM capacity for high volumes of transactions in the COVID-19 pandemic	Develop and maintain three-year rolling plans, with measures in place to define and monitor interim targets, funding levels, staffing, and so on and make adjustments to ensure final program end targets can be met. This would also include adjusting the FM capacity to reflect the expected increased transaction volumes (including electronic flow of documents, accounting, financial and project management, monitoring, and reporting).	Recurrent on an annual basis	PAP 8
5. Internal controls	Revise oversight procedures under the CAPP to include adjustments in sampling of ex post site visits, sharing of common deficiencies across regions, strengthening of verification of the tax relief component, and strengthening of central oversight functions. It is recommended that to clarify which SFB owners have applied for the CAPP subsidies and tax relief, the application form include a checkbox to indicate if they are also applying for the parallel benefit. To strengthen the verification of eligible expenditures, it is recommended that the NRA apply the same tools developed for the CAPP ex post inspections and eligible expenditure verifications.	December 30, 2022	PAP 5

Implementation Support

73. The fiduciary team will work with the implementation agencies to monitor implementation progress and address underperforming areas identified in the PAP. The fiduciary implementation support includes

- (a) Reviewing implementation progress and working with the task team to examine the achievement of Program results and DLIs that are of a fiduciary nature;
- (b) Helping the implementing agencies resolve implementation issues and carry out institutional capacity building;
- (c) Monitoring the performance of fiduciary systems and audit reports, including the implementation of the PAP and follow-up on audit recommendations;
- (d) Monitoring changes in fiduciary risks to the Program and, as relevant, compliance with the fiduciary provisions of legal covenants; and



- (e) Working with the team to assess the timeliness and adequacy of the Program funds allocations as approved in the financial plans of NFOŚiGW.



ANNEX 5. SUMMARY ENVIRONMENTAL AND SOCIAL SYSTEMS ASSESSMENT

Background

1. Despite considerable strides in decarbonizing its energy sector, Poland has poor ambient air quality. The country is home to 36 of 50 of the most air-polluted cities in Europe (WHO 2018). The World 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). Poor air quality takes a considerable toll on humans. According to the EEA, Respiratory illness caused by pollution results in approximately 44,500 premature deaths in Poland.
2. Poland has come under considerable national and international scrutiny because of air pollution. It has made limited progress in reducing particulate pollution from coarse and fine particulates (PM₁₀ and PM_{2.5}, respectively), leading to noncompliance with the EU standards. In early 2018, the European Court of Justice found Poland guilty of failing to meet air quality norms and particularly for repeatedly failing to meet the EU's daily and annual limits for PM₁₀. Failing to meet remedial actions could result in the EC imposing financial penalties on the country.
3. The GoP made the fight against air pollution a top priority. In June 2018, the CAPP was launched—a PLN 103 billion (US\$26 billion)—a 10-year initiative aimed at reducing low stack emissions. The CAPP is implemented by NFOŚiGW. It has the specific objective to “improve the energy efficiency of existing single-family housing through thermal modernization and upgrading of heating furnaces.” The CAPP deploys a system of subsidies, tax incentives, and targeted loans to help 3,030 million SFBs replace their solid fuel boilers and implement thermal retrofits. The CAPP was simplified on May 15, 2020, to increase its attractiveness to the population.

PforR Program Scope

4. The World Bank is considering support for a PforR loan, referred to as the Clean Air Through Greening Residential Heating Program, which would support the CAPP. The CAPP has a strong strategic rationale as it tackles critical issues of air quality, energy security, and climate change mitigation due to high energy consumption and pollution from old heating sources in older SFBs. The CAPP is well-aligned with the EU priorities as noted in the suite of transposed energy efficiency directives; strategy documents (for example, NECP); air quality standards; and domain of tackling energy poverty. Many EU countries allocate public funding/subsidies to the residential sector, given the substantial market barriers associated with the high up-front investment costs, long payback periods, and high transaction costs. Investment subsidies have been virtually ubiquitous for housing renovation and energy efficiency programs in other Central and Eastern European countries.
5. Therefore, the World Bank's proposed PforR objective, targets, and scope have been developed to closely align with those of the CAPP, “to save energy and reduce emissions that contribute to air pollution through the promotion and adoption of sustainable heating and energy efficiency investments in single-family buildings in Poland.” Thus, the scope of the PforR is defined as a five-year time slice of the CAPP (including the complementary tax relief scheme under the MoF) excluding support for eco-coal boilers, that is, (a) while the CAPP does include provisions for eligible SFBs to purchase new, eco-design coal boilers, the PforR would not support them and (b) while CAPP is a 10-year program, the PforR would be limited to a five-year duration. Over the life of the PforR (that is, March 2022–March 2027), it is estimated that about 813,000 SFBs would be served to support thermal renovations, non-coal boiler replacements, or both, at an estimated CAPP cost of US\$6.0 billion. The proposed PforR would also take



into account major planned enhancements to CAPP, such as the inclusion of commercial banks and the launch of a low-income component, as they are introduced and fully incorporated into CAPP.

6. The Program beneficiaries are SFB owners whose homes require thermal renovations and solid fuel boiler replacements; citizens who benefit from better quality air; equipment and service providers who benefit from increased demand for their products and services; banks who benefit from an increased number of customers and loan applications; and suppliers of cleaner fuel options (for example, utilities supplying electricity, gas and district heating, biomass suppliers, and so on).

7. Institutionally, the PforR fits within the existing institutional arrangements under the CAPP. However, some institutional adjustments will be needed, such as to include commercial banks, define and formalize the roles and responsibilities of municipalities, and train and mobilize a set of eligible program operators (proposed for the low-income component). Due to the nature of the Program, no centralized procurement is planned, so most of the works and equipment contracts would be small (under US\$20,000) and procured by SFB owners directly. It should be noted that the PforR loan of US\$291 million represents about 5 percent of the estimated US\$6.1 billion budgeted for the CAPP in the corresponding five-year period, and about 0.2 percent of the full, 10-year government program (US\$25.54 billion).

PDOs and PDO-Level Results Indicators

8. The PDOs are to reduce energy use and air pollution emissions from heating sources in single-family buildings in Poland.

9. Key Program results indicators are the following:

- a. **PDO 1 (Core):** Projected lifetime energy savings (MJ). The indicator measures progress toward reducing energy consumption in SFBs through stove replacement and thermal renovations over the lifetime of the investments.
- b. **PDO 2 (Custom):** Projected lifetime reduction of particulate matter emissions (ton PM₁₀ and PM_{2.5}). This indicator measures progress toward reducing particulate matter emissions resulting from stove replacement and thermal renovations in SFBs over the lifetime of the investments.

Purpose of the ESSA

10. **The purpose of the ESSA is to** (a) analyze the environmental and social effects, including indirect and cumulative effects, of activities associated with the Program; (b) analyze the borrower's systems for managing the identified environmental and social effects, including reviewing practices and the performance track record; (c) compare the borrower's systems—laws, regulations, standards, procedures, and implementation performance—against the core principles (World Bank Policy PforR) and key planning elements (World Bank Directive PforR) to identify any significant differences between them that could affect PforR Program performance; and (d) formulate recommended measures to address capacity for and performance of policy issues and specific operational aspects relevant to managing the PforR risks (for example, carrying out staff training, implementing institutional capacity-building programs, and developing and adopting internal operational guidelines).

11. Relevant environmental and social management procedures and processes identified through the ESSA process and recommended in the ESSA are designed to (a) promote environmental and social sustainability in the PforR design; (b) avoid, minimize, or mitigate against adverse impacts; and (c) promote informed decision-making relating to a PforR's environmental and social effects.



12. The ESSA includes specific recommendations on how to mitigate any key risks and impacts and also how to address any gaps related to institutional/regulatory framework or organizational capacity. These recommendations should be articulated in the environmental and social sections of the PAP to be prepared for the PforR operation.

13. Specifically, the ESSA exercise is designed to consider the consistency of the existing country systems with the proposed PforR operation along two dimensions: (a) systems as defined in the legal and regulatory framework of the country and (b) capacity of the Program institutions to effectively apply the environmental and social management systems associated with the Program's environmental and social effects and the proposed set of actions in the PAP that attend to the major gaps in the system as identified in the ESSA with respect to the six core principles of OP/BP 9.00.

Environmental and Social Effects of the Proposed Program

14. Based on the assessment, the environmental and social impacts are expected to be limited, site-specific, reversible, and mitigatable. Physical works financed under the Program are under DLIs 6 and 7 and include thermal insulation of buildings, installation of renewable energy sources, and energy-efficient boiler installations. None of the anticipated Program activities are expected to have significant irreversible adverse impacts on the environment and/or affected people. Small construction and rehabilitation works will carry a set of common risks typical for such activities: generating noise, dust, construction and demolition waste, and risk to the health and safety of workers. Potential risks and impacts identified through the ESSA relate to (a) improper waste management due to the disposal/recycling of old boilers, old insulation materials, windows, and external doors; (b) impacts on bat and bird habitats located under the roofs/in attics of SFBs to be retrofitted; (c) adverse effects on houses of historical value or objects, such as tiled stoves of certain values; and (d) health and safety of workers engaged in construction/installation works and household members during works.

15. Cumulative impacts are related to the (a) removal of asbestos from roofs in SFBs, which is not part of the Program in parallel with thermal insulation of the roof and (b) disposal/recycling a large number of old boilers, external doors, and windows. The probability of cumulative impacts associated with the removal of asbestos is small.

16. The common way for recycling scrapped old heating stoves is cleaning, disassembly, and melting the metal parts in ironworks to produce simple metal elements. The capacity for doing so exists in Poland.

17. Thermal retrofits of SFBs (building insulation and replacement of windows and doors) are optional and thus less common in the Program than the replacement of the heating source. Typical recycling under the Program is the desegregation of wood or plastic elements from glass. Wood or plastic is incinerated, glass can be reused or disposed of at a sanitary landfill. No gaps were identified regarding the capacity of the waste recycling and management system in Poland to cope with construction waste from the Program. The relevant policies and regulations are in place (following the EU directives, regulations, and decisions). Financial and administrative enforcement is satisfactory.

18. In cases of detection of bird nests and bats resting sites under the roof before the works, SFBs or contractors will minimize negative impacts primarily by banning works during the specified nesting period and moving the habitats to another location. This provision is included in the application form.

19. The potential social risks identified in ESSA relate primarily to (a) impacts on vulnerable groups and an increase of social inequalities due to limited capabilities of low-income group, particularly in terms of the online application process (DLI 2); (b) concern that a change in fuel, from cheap firewood/coal to



more expensive alternatives, may affect the recurring energy bills for lower-income households (DLI 2, PAP); and (c) insufficient citizen engagement and information regarding Program (DLI 5, PAP). With regard to Program procedures, the application process relies heavily upon access to technology (computers and the internet), the ability to access the CAPP website, and the ability to properly fill in the application. With the high reliance on using online applications, elderly persons, not familiar with using computers, and low-income households, without access to the internet, are at greater risk of nonparticipation in the Program.

20. A social risk also relates to a change in household expenditures because of changes in fuels (that is, from low-grade coal to gas or electricity). This is with regard to SFB owners who choose not to apply for thermal insulation of their building (walls, windows, and front doors), which can reduce the energy demand of buildings and therefore offset higher energy bills. This could be mitigated through an expansion, modification or establishment of certain social programs, such as the housing allowance, the electricity allowance or the special purpose benefit, to cover energy bills in vulnerable SFBs, including those associated with switching to cleaner fuels. Aligned with these potential mitigating measures, a team has been established by the Order of the Minister of Climate and Environment of 23, February 2021 (Legislative Journal of the Minister of Climate and Environment, item 18) for the support of vulnerable consumers and reduction of energy poverty in Poland. Tasks of this team include developing a concept of a support mechanism for vulnerable consumers, specifying a definition of energy poverty and assessing instruments contributing to elimination of the energy poverty phenomenon. The CAPP provides increased subsidies for lower-income households, and other government programs are being designed to assist the lowest-income households.

21. Finally, insufficient, conflicting, or incorrect information may also deter participation. There is a need to engage beneficiaries more actively in two-way interaction and dialogue on the Program design and implementation and improve the distribution of information through more formalized outreach efforts.

22. The positive environmental and social impacts of the subprojects mainly relate to the benefits of

- Reduced energy demand due to thermal insulation of buildings (roofs, walls, doors, windows, and floors);
- Reduction of CO₂, PM₁₀, and PM_{2.5} emissions due to replacement of old heating stoves by modern, efficient gas, electric heat pump, or solid fuel installations;
- Reduction of global emissions due to energy-efficient investments and cleaner fuels;
- Public health benefits caused by reduced air pollution emissions;
- Quality of life improvement due to better heat comfort in houses and heating systems being more comfortable to operate;
- The substantial economic boost associated with renovating three million buildings and replacing thousands of heating systems; and
- Increased environmental awareness among inhabitants.

23. The environmental and social risks of the Program are rated Low to Moderate.

Assessment of Borrowers Systems and Framework

24. NFOŚiGW has overall responsibility for the supervision of the Program. This fund plays the coordination role for the 16 regional funds or WFOŚiGWs, which are the main implementing agencies for the Program at the regional level. NFOŚiGW reports to the MoCE. Municipalities can sign a cooperation



agreement with their respective WFOŚiGW and support the beneficiaries with application forms. Commercial banks are proposed but not yet included in the Program. They will provide loans to beneficiaries based on the agreement with NFOŚiGW. The Program implementing agencies (NFOŚiGW and WFOŚiGWs) continue to hold responsibility for processing applications, ex post verification, and so on, and hold responsibility for environmental and social standards even in the case of applications submitted in conjunction with future loan applications from commercial banks.

25. Polish EIA⁸³ law and EIA Directive 85/337/EEC with subsequent amendments are not applicable to the Program. An EIA is not required because of a large number of small project activities. The contracted companies are obliged to comply with applicable environmental, social, health, and safety laws and regulations. They conduct safety training for the workers, and follow standards, depending on the work specificity and regulations for the construction industry. Construction companies are also responsible for the transportation and disposal of inert construction and demolition waste. Any hazardous waste is managed by licensed contractors. The evaluation of the environmental performance of the contractors performing installation works is part of the subproject evaluation conducted by each WFOŚiGW. WFOŚiGWs' evaluations are limited to a post-completion check of certifications for recycling old heating installations with a random sample of 5 percent of SFBs where works were conducted by the contractor and for 100 percent of subprojects completed by SFB owners themselves. Based on the current rate of applications, there is enough capacity within WFOŚiGWs to conduct the ex post review and ensure the fulfillment of the environmental safeguard responsibilities.

Suggested Areas of Improvement and Inputs to PAP

26. The following measures are recommended to help proponents improve their system performance and address important gaps between the national systems and the PforR core principles and key elements. The Program should incorporate the capacity to adhere to social and environmental requirements and track, analyze, and work to mitigate negative effects and replicate positive ones where applicable. The following actions are proposed:

Necessary Actions

- **Broadening the scope of the ex post review of the CAPP to include environmental and social aspects** (for example, waste disposal and recycling, cleanliness of site condition, presence of bird and bat survey, and occupational health and safety) through the adoption of an environmental and social checklist. The checklist would provide guidance for WFOŚiGW personnel conducting ex post evaluation of the CAPP subprojects to ensure adherence to Poland's applicable environmental and social laws and regulations.
- **Strengthen the existing comprehensive program outreach effort.** Currently, information and promotional activities of WFOŚiGWs are based on their own resources for promotion and outreach, while NFOŚiGW makes funds available for the MoCE, which has overall responsibility for information and education activities. Strengthening the existing initiatives could be done through a variety of mechanisms, such as hiring a media firm, using multimedia tools, conducting workshops and/or roadshows and municipal-sponsored events, introducing Program agents or operators, setting up a program help desk, and so on, to share program information, eligibility criteria, and application procedures. The outreach

⁸³ EIA = Environmental Impact Assessment.



efforts should include developing an awareness baseline, including disaggregation by gender, testing of messages, and impact monitoring with outcome indicators.

- **Establish formal and systematic communication and training opportunities to strengthen the knowledge and capacity of works providers.** Supplement training modules for WFOŚiGW staff, banks, contractors, and SFB owners, including implementation guides, environmental and social issues, and so on to reduce mistakes, share lessons, and so on.
- For the overall CAPP, transition from coal to cleaner fuels, including gas-based heaters, and consider phasing out subsidies for coal boilers over time. (On May 21, 2021, the Minister of Climate and Environment announced that support for eco-coal boilers under CAPP would be phased out, and thus from January 1, 2022, coal boilers would no longer be eligible for any CAPP subsidies. NFOŚiGW also entered into an MOU with the national gas utility on September 27, 2021 to promote gas-based heating where appropriate.)
- **Support further municipal participation in the CAPP.** Municipalities are the first option for residents seeking information and are best positioned to reach disadvantaged groups. Municipalities could engage in outreach activities; conduct income verification; and potentially provide assistance to disadvantaged groups on the CAPP applications, including visits to SFBs. This may require financial incentives for municipalities to engage in the CAPP. Eco-managers in the Małopolska region can serve as an exemplary solution.

Useful Actions

- Establishment of an emissions registry for SFBs, which would allow municipalities, particularly to better target support to low-income beneficiaries and strengthen enforcement of regional ASRs.
- To improve the review of grievances and feedback, the CAPP should develop, amalgamate, and systematize approaches to monitor and consult on impacts, grievances, and feedback at regional and national levels. Establishing a systematic review should ensure comments received from stakeholders inform CAPP planning and implementation. If possible, data on feedback providers and grievances should be disaggregated by age group, gender, urban/rural, and region. This will inform the Program on whether specific groups are disproportionately affected.



ANNEX 6. PROGRAM ACTION PLAN

Action Description	Source	DLI#	Responsibility	Timing		Completion Measurement
1) Convene a high-level inter-governmental Coordination Committee to review progress, identify bottlenecks and recommend inter-governmental action e.g. social assistance for energy poverty, anti-smog resolutions, ZUM list, CEEB, coal phaseout etc	Technical		Plenipotentiary for Clean Air	Due Date	30-Sep-2022	The committee has been established by exchange of letters and has convened at least once, with composition to acceptable to the World Bank.
2) Supplement training modules for WFOŚiGW staff, banks, supply side actors, and SFB owners, including implementation guides, E&S issues, etc. to reduce mistakes, share lessons, etc.	Environmental and Social Systems		NFOŚiGW	Due Date	29-Sep-2023	NFOŚiGW has produced training materials for Banks and had produced improved training materials that include E&S issues and lessons learned.
3) Design and introduce co-financing mechanisms for lower-income SFB owners that are unable to secure loans from commercial banks.	Technical		NFOŚiGW	Due Date	31-Mar-2023	NFOŚiGW management approval of co-financing mechanisms for lower-income SFB owners.
4) NFOŚiGW will submit CAPP financial reports, including WFOŚiGWs, to NFOŚiGW Management Board, Coordination Committee and	Fiduciary Systems		NFOŚiGW, MoF	Recurrent	Yearly	Both reports have been audited by an independent auditor acceptable to the World Bank, which would include the NIK, submitted as per the action and publicly disclosed. By Dec 31 2022, and repeated yearly.



Bank. MoF will submit financial reports on the tax relief to the Coord Committee and Bank. Both reports will be audited by NIK.						
5) Revise oversight procedures under CAPP to include adjustments in: i) sampling of ex-post site visits, ii) E&S checklist, iii) sharing of common deficiencies across regions, iv) strengthening of central oversight functions, v) mid-term evaluations	Technical		NFOSiGW	Due Date	30-Dec-2022	Oversight elements of program are updated in program implementation procedures and documents between NFOSiGW and WFOSiGWs.
6) Support municipal participation in the CAPP program, through financial support, guidance and training (e.g., program outreach, application assistance, income verification, AQ control strategies, monitoring application submissions and enforcement)	Technical		NFOSiGW	Recurrent	Yearly	Adoption of program revisions to include mechanisms for technical and financial support for municipality roles by Dec 30, 2022 and then annually.
7) Regularly review feedback received through all grievance channels, gather regular information on impacts on beneficiaries by social groups and gender, advance gender-informed outreach, and strengthen and formalize citizen engagement mechanisms.	Environmental and Social Systems		NFOSiGW, MoCE	Recurrent	Yearly	Yearly reporting on satisfaction survey with social cuts. Use of information on gender gaps in outreach. Annual townhalls to engage on progress, beneficiary feedback and actions taken to respond to feedback. By Sept 30, 2022 and updated annually.



8) Develop, maintain rolling 3-year program plans to define and monitor interim targets, funding levels, staffing, etc. and adjusted in order to ensure final program end targets are met, and FM capacity for increased transaction volumes is adjusted.	Fiduciary Systems		NFOSiGW	Recurrent	Yearly	3-year rolling program plans are developed and in place from March 31, 2022 and updated annually.
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ANNEX 7. IMPLEMENTATION SUPPORT PLAN

1. The implementation support plan was developed to be consistent with the PforR operational guidelines. Program implementation is the responsibility of NFOŚiGW, the regional funds (WFOŚiGWs), banks, MoF, and others, with targeted and continuous implementation support and technical assistance from the World Bank team. The World Bank's implementation support will also focus on the major risks identified and mitigation measures to ensure achievement of the PDO.
2. The World Bank's implementation support will broadly consist of the following:
 - (a) **Monitoring and reporting.** As with other PforR operations, independent monitoring and assessment of indicators will be critical as disbursements will be based on the validity of the reported figures. Twice a year, the World Bank team will visit to assess compliance with agreed actions, verify reported DLIs/DLRs, review additional relevant documentation, and identify enhancements for Program M&E systems.
 - (b) **Technical support.** The World Bank implementation support missions will include technical specialists to help guide aspects of air quality policies and regulations and the Program technical standards and provide support for low-income SFB owners, outreach and behavioral messaging, and so on.
 - (c) **Procurement.** A procurement specialist will carry out ongoing supervision during the Program. The specialist will also participate in Program implementation support missions and site visits, respond to just-in-time requests, and provide ongoing guidance to NFOŚiGW and other implementing agencies as required.
 - (d) **FM.** The World Bank will supervise the Program's FM arrangements and adherence to agreed FM procedures and actions. Implementation support will include capacity strengthening. An annual fiduciary review will be conducted for the Program, aligning with the reporting requirements and processes already in place. This review will be supplemented by on-site visits by the World Bank's fiduciary staff at least twice a year. In addition, desk reviews will be done for audits, financial, and any other reports received throughout the financial year. In-depth reviews may also be commissioned by the World Bank as needed.
 - (e) **Environment and social measures.** The World Bank staff will periodically monitor environmental management systems and social measures taken to ensure compliance with agreed actions. The World Bank environmental specialists will participate in implementation missions and site visits as deemed appropriate. The World Bank will also monitor information campaign improvements, improved involvement of SFBs deemed more vulnerable, feedback measures, and grievance redress mechanisms. The World Bank will encourage improved reporting from the regional level on local feedback received and grievances being addressed.
3. The World Bank will provide twofold support to the MoCE, NFOŚiGW, WFOŚiGWs, and so on in implementing the Program:
 - Support with monitoring of Program delivery and performance, through engagement with the stakeholders and a proactive identification and collaborative resolution of emerging issues with a potentially adverse effect on the performance of the Program.



- Support the institutional strengthening of the implementing agencies, through implementation of the PAP, institutional dialogue, and possible continued support from the EC under the Catching Up Region technical assistance program.
4. Program monitoring support is designed to provide confidence to the World Bank that the targeted outputs will be achieved within the expected time scale and at the expected level of quality.

Table 7.1. Main Focus of Implementation Support

Time	Focus	Skills Needed	Resources Estimate	Partner Role
First 12 months	Support for: <ul style="list-style-type: none"> • NFOŚiGW progress reporting • Low-income program design • Commercial bank engagement • Program outreach • Third-party DLI monitoring and verification • Beneficiary satisfaction survey and gender survey Monitoring of <ul style="list-style-type: none"> • Program budgeting and allocations • Program Results Framework and reporting • Alignment with PAP and progress 	<ul style="list-style-type: none"> • Project management • FM • Disbursement management • Technical standards • Air quality regulations • Poverty and behavior change communications • Procurement and contracts 	12–14 staff weeks	NFOŚiGW will lead Program implementation, Program management, and FM
12–48 months	Monitoring of <ul style="list-style-type: none"> • Program budgeting and allocations • Program implementation and physical progress • Program Results Framework • Alignment with PAP and progress Evaluation of technical performance through field visits and so on.	Same as above	8–10 staff weeks per year	NFOŚiGW will lead Program implementation, Program management, and FM
Other				

**Table 7.2. Task Team Skills Mix Requirements for Implementation Support**

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Project management	8	2	1 HQ, 1 in Europe
FM	4	2	1 in Warsaw
Disbursement management	4	2	
Environmental and social aspects	6	2	1 HQ, 1 in ECA
Air quality aspects	2	1	1 HQ
Low-income assessment, program design	4	2	
Program outreach, behavior change	4	1	
Banking	4	1	1 in Europe
Procurement and contracts	8	2	1 in ECA


ANNEX 8. TEAM LIST

World Bank Staff Name	Role	Specialization	Unit
Jas Singh	Team Leader (ADM Responsible)	Energy efficiency	IECE1
Reena C. Badiani-Magnusson	Team Leader	Poverty	EECPV
Barbara Ziolkowska	Procurement Specialist (ADM Responsible)	Procurement	EECRU
Iwona Warzecha	Financial Management Specialist (ADM Responsible)	Financial management	EECG2
Hmayak Avagyan	Environmental Specialist (ADM Responsible)	Environmental safeguards	SCAEN
Dianna Pizarro	Sr. Social Specialist (ADM Responsible)	Social safeguards	SCASO
Kristine Schwebach	Social Specialist	Social safeguards	SSAS1
Aditya Alexander Lukas	Energy Specialist	Energy efficiency	IEEEES
Daria Goldstein	Lead Counsel	Legal	LEGLE
Luis M. Schwarz	Sr. Finance Officer	Loan officer	WFACS
Marina Mijatovic	Finance Analyst	Loan officer	WFACS
Wolfgang M. T. Chadab	Consultant	Loan officer	WFACS
Janina Andrea Franco Salazar	Sr. Energy Specialist (former TTL)	Energy	ILCE1
Filip Piotr Kochan	External Affairs Officer	Communications	ECREX
Klas Sander	Sr. Environmental Economist	Air quality	SCAEN
Matija Laco	Team Member	Banking	EECF1
Andrea Liverani	Program Leader	Team member	SCADR
Agnieszka Boratynska	Program Assistant	Team member	ECCPL
Hiwote Tadesse	Operations Officer	Team member	IECE1
Jonathan George Karver	Research Analyst	Behavioral	EPVGE
Thuy Bich Nguyen	Program Assistant	Team member	IECE1

Extended Team Name	Title	Specialization	Location
Viktoras Sirvydis	Energy efficiency housing specialist	Energy efficiency and housing	Vilnius, Lithuania
Dariusz Kobus	Environmental specialist	Environmental safeguards	Warsaw, Poland
Piotr Matczak	Social specialist	Social safeguards	Poznan, Poland