



# Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 04-Mar-2019 | Report No: ISDSC26474



**BASIC INFORMATION**

**A. Basic Project Data**

Country North Macedonia	Project ID P149990	Parent Project ID (if any)	Project Name North Macedonia Public Sector Energy Efficiency Project (P149990)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date Oct 14, 2019	Estimated Board Date Dec 10, 2019	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Ministry of Finance	

**Proposed Development Objective(s)**

The project development objectives are: (i) reduce energy consumption in the municipal sector; and (ii) support the establishment and operationalization of a sustainable financing mechanism for the public sector

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

**SUMMARY**

<b>Total Project Cost</b>	32.96
<b>Total Financing</b>	32.96
<b>of which IBRD/IDA</b>	28.41
<b>Financing Gap</b>	0.00

**DETAILS**

**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	28.41
--	-------

**Non-World Bank Group Financing**

Counterpart Funding	1.14
Borrower/Recipient	1.14
Other Sources	3.41



EC: European Commission

3.41

Environmental and Social Risk Classification

Moderate

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

## B. Introduction and Context

### Country Context

**The Republic of North Macedonia is a land-locked country at the heart of the Balkans, characterized by its mountainous terrain, intersected by valleys and lowlands.** It is a transit region, which mainly has continental climate in the mountains, and Mediterranean climate along the river valleys and towards the south. In terms of connectivity, the country sits on two Pan-European corridors, namely the Corridor VIII and Corridor X, and its proximity with the EU provides access to a large export market with 650 million customers. According to the last census of 2002, the population is about 2 million, of which 25 percent live in the capital Skopje, while 40 percent live in rural areas. Ethnic Macedonians make up 64 percent of the total population, ethnic Albanians 25 percent, other ethnicities, such as Turks, about 4 percent, and Roma about 3 percent. It is not possible to determine the current ethnic distribution in the absence of a more recent census. Ethnic relations have been a cause of tensions in the past.

**Following the resolution of the extended political and electoral crisis of 2015–2017, the Government committed to an ambitious reform agenda and acceleration of EU and NATO accession.** North Macedonia’s extended political crisis in 2015–17 highlighted institutional weaknesses and affected the citizens’ confidence in state institutions<sup>1</sup>. Political uncertainty continued after the December 11, 2016 parliamentary elections, due to the difficult process of formation of a parliamentary majority. A new government was inaugurated on May 2017, with a program articulating an ambitious reform agenda. The government’s program focuses on economic growth, job creation, fair taxation, support to SMEs and reform of the social protection for the most vulnerable, as well as on acceleration of the EU and NATO accession.

**North Macedonia made a significant progress in its history as an independent nation with the recent agreement on the name issue.** Resolution of the name issue<sup>2</sup>—which has been inflicting political and economic damage since 1991—is essential to consolidate North Macedonia’s EU and NATO accession process and enable it to become more deeply integrated with regional and global markets. On June 12, 2018, the Macedonian and Greek Governments signed the so-called Prespa Agreement<sup>3</sup> aimed at resolving the decades-long country name dispute renaming the country’s name to

<sup>1</sup>The political crisis escalated in early 2015 when SDSM accused the government of illegal wiretapping and began releasing wiretapped conversations between senior government officials suggesting election fraud, irresponsible public spending, misuse of power, and control of the judiciary and media. In light of the recordings, the legitimacy of the government was questioned by the opposition, civil society, academia, and international community. EU and United States diplomats facilitated a dialogue between the main political parties, resulting in the Przhino Agreement, which set a date for new parliamentary elections, held in December 2016.)

<sup>2</sup> The country became a member of the United Nations in 1993, but, as a result of an ongoing dispute with Greece over the use of the name Macedonia, was admitted under the provisional description “the former Yugoslav Republic of Macedonia”.

<sup>3</sup> <https://vlada.mk/sites/default/files/dokumenti/spogodba-en.pdf>



*North Macedonia.* On September 30<sup>th</sup>, 2018, a referendum was held in now North Macedonia where voters affirmed support for the agreement, although voter turnout was 37%. The North Macedonian parliament endorsed the necessary constitutional changes on January 11, 2019 and Greek Parliament also ratified the agreement on January 25<sup>th</sup> 2019. The agreement entered into force from February 12, 2019. In parallel to the name change process, in April 2018, the European Commission (EC) recommended that the Council approves the opening of negotiations with North Macedonia.

**The macroeconomic outlook is positive with an annual average growth at 3.2 percent during 2019-2023.** A gradual fiscal consolidation will have a very modest negative impact on growth. Investment (including in the two highways,<sup>4</sup> and private investment in energy and tourism) will be the main driver of growth supported by exports and personal consumption. Expected job creation is expected to support more sustainable growth of household incomes and consumption. Poverty (measured at US\$5.5 in 2011 purchasing power parity) is projected to decline to 20 percent by 2021, subject to private sector employment rebound, including in construction and tourism.

**Limited public resources and a policy deficit have prevented forceful action to forestall growing environmental threats like air pollution and natural hazards that are amplified by climate change.** Air pollution in North Macedonia is now among the worst in Europe, and the health risks are severe, with an estimated annual cost equal to 3.2 percent of GDP. The main culprits, responsible for more than 90 percent of emissions, are heating based on solid fuels (firewood and coal), industry and energy production, and road traffic; among other sources are agriculture, waste burning, and construction dust. Air pollution is concentrated, with over 45 percent affecting Skopje, the largest city, and several local production zones. Despite introduction of measures like pollution inventories and air quality monitoring systems have, there is need to enforce environmental regulations more vigorously. North Macedonia is also highly exposed to natural hazards like floods, earthquakes, forest fires, droughts, landslides, and extreme temperatures. The annual damage to critical infrastructure from climate-related hazards is expected to double by 2020, and by 2080 it could be more than five times higher. A major flood or earthquake disaster could derail economic growth, affect critical infrastructure, cause losses in agricultural incomes, and disrupt rural livelihoods. For example, a 250-year earthquake would affect more than 40 percent of the Macedonian population and cost 50 percent of GDP. That is why reinforcing emergency preparedness and other aspects of resilience is ever more urgent.

#### Sectoral and Institutional Context

**Domestic power generation capacity is not sufficient to meet demand, particularly during winter seasons.** Currently, Macedonian power sector heavily depends on inefficient and outdated coal-fired generation operated by the state-owned power generation company ELEM. About 40 percent of electricity supply in Macedonia comes from a 40-year old lignite-fired power plant Bitola. In recent years, renewable energy generation (small hydro, wind, solar and biogas) has grown from about 4 percent in 2014 to 7.4 percent in 2016, driven by GoM's support mechanisms through feed-in tariffs for attracting investment in renewable energy. Also, conventional hydropower generation supplies up to 20 percent of electricity demand depending on the hydrological conditions, which are quite volatile in Macedonia. Gas-fired combined heat and power (CHP) plants have increased their market share from 2.4 percent in 2014 up to 7.4 percent in 2016. Imports meet the rest of power demand and vary depending on hydrological conditions and regional market situation, but typically account for about one third of electricity supply in the country. In 2016, transmission losses stood at 1.6 percent and distribution losses at 14.7 percent.

**The Government is concerned about the country's growing reliance on imported fossil fuels and energy inefficiency.** Fossil fuels account for more than 80% of energy consumption in North Macedonia, and an increasing amount of this is

<sup>4</sup> The highway construction on two sections Miladinovci-Štip (47 kilometers) and Kičevo-Ohrid (57 km) in the amount of €579 million (or 7.1 percent of the 2013 GDP) faces delays and a cost overrun of around 1.5 percent of GDP.



imported, including all liquid fuel and natural gas, which makes the sector the top contributor to the country's total greenhouse gas (GHG) emissions. In the absence of investment in new energy sources, this trend will continue as demand grows while domestic production erodes. GoM is committed to reversing this trend and strengthening energy security. Greater energy efficiency is the first step in this direction as the "first fuel," as North Macedonia consumes limited energy per capita (about 40% of the EU) but a high amount per unit of GDP. Its energy intensity is 3.5 times higher and its carbon intensity is four times higher than the average of the Organization for Economic Cooperation and Development (OECD) countries. The Government also wants to exploit renewable energy sources, starting with hydropower (of some 5,500 GWh of clean hydropower ready to be exploited, only 27% has been tapped), but also solar, wind, solar and biomass. Other goals include increasing the use of natural gas to reduce the use of electricity in heating buildings.

**Heating of buildings is not sustainable.** Most of the heating systems in buildings are largely inefficient. Heating is typically provided by three sources: electricity (25%), biomass (firewood) (64%) and district heating or DH (9%, Skopje only). Heating with electricity is highly inefficient and exacerbates power supply challenges creating the need for costly electricity imports, especially during the heating (winter) season. The high consumption of unmanaged and unregulated firewood is also unsustainable and can lead to forest degradation, giving rise to adverse environmental, economic and health impacts. The Skopje DH system was operated by Toplifkacija for decades with a fairly old and inefficient network. In 2012, the regulator forfeited their heat supply license which was acquired by a newly formed shell company, the Balkan Energy Group (BEG). Today, there are three companies that manage the district heating system in Skopje. BEG manages the largest part of the heating system in Skopje with total heat generation capacity of 443MW. The two other heat generation companies in Skopje are Energetika, owned by ELEM AD with 96MW of heat generation capacity and Skopje Sever AD with 46MW heat generation capacity. Total heat generation capacity for the city of Skopje is about 478MW entirely based on natural gas-fired Combined Heat and Power Plants (CHPs). Despite investments in rehabilitation of the district heating distribution network in Skopje has still about 12% technical losses. About 75% of the district heating system consumption in Skopje comes from residential customers, while the other 25% comes from public and commercial customers. BEG plans to invest in rehabilitation and expansion of the network but the expansion is still not defined. The company is facing challenges with keeping existing customers and acquiring new ones as it faces competition from alternative heating sources such as natural gas and thermal pumps.

**GoM has already begun to tap its vast potential for energy efficiency and plans further investments in the public sector.** The GoM has committed to reduce energy use by 12% (about 200 ktoe) by 2018 in its 2020 Energy Efficiency Strategy (based on a 2010 baseline) requiring some €406 million of investment, more than the 9% required under the Energy Community Treaty's National Energy Efficiency Action Plans (NEEAPs) for the other aspiring Western Balkan EU candidate countries. Buildings, which consume about 39 percent of the energy in the country based on the 2<sup>nd</sup> NEEAP, have been identified in the country as a major priority, with estimates of savings from 20-40%. The public sector had the greatest potential, with about 35-40% savings, mostly in the health and education sectors. During the initial NEEAP reporting period (2010-2012), Macedonia fell slightly short of its 4% target, achieving about 2.6% (or 41.9 ktoe). Most of these savings came from voluntary programs in the industrial (52%), transport (19%) and residential (17%) sectors. During the second NEEAP reporting period (2013-2015) Macedonia managed to achieve energy efficiency savings of 4.95% (80.97 ktoe), which was slightly above the target of 4.89% (80.06 ktoe). For the third period up to 2018, the Government has revised the cumulative target to 9.09% or 148.72 ktoe. As part of the third NEEAP, the Government planned to develop a national program for energy efficiency in public buildings that would be financed through an Energy Efficiency Fund, and included plans for improving efficiency of street lighting.

**The government is now finalizing a comprehensive Law on Energy Efficiency.** A draft Law issued on December 7, 2018 has been issued for public comment. The draft includes provisions related to the overall institutional set-up and responsibilities, obligations (e.g., for utilities, large consumers, building owners, equipment manufacturers, public bodies



and municipalities), funding and penalties, data provisions, energy audits and managers, energy service companies (ESCOs), training. The set-up of an independent Energy Efficiency Fund is also envisioned to support the achievement of national EE targets, etc. which will be determined through a separate Law.

**Despite such potential for energy efficiency in buildings, numerous policy and market barriers persist.** Such constraints include: (a) energy pricing; (b) access to financing; (c) limited data and low comfort levels; (d) misaligned incentives and regulatory barriers; and (e) technical capacity.

**The Bank has been active in sustainable development in North Macedonia.** The Bank completed the GEF Sustainable Energy Project (SEP) in 2013 and, based on the experiences and lessons from this project and within the region, are developing this operation. The Bank is also financing an ongoing Municipal Services Improvement Project (MSIP) 1 and 2, initiated in 2009 with additional financing provided in 2012 (total US\$75 million IBRD loan), which provides local financing for municipal infrastructure and other public investments. The reach of MSIP is substantial, with over half of the 84 municipalities participating so far. Most investments have been in typical infrastructure—rehabilitation of local roads, expansion of water supply, machines to facilitate solid waste collection/disposal, etc.—but about 36 investments were made to support energy efficiency of municipal infrastructure: 13 buildings retrofitted, 15 buildings were constructed/expanded with energy efficiency standards and eight street lighting systems were equipped with efficient lighting technologies. The Bank, with ESMAP support, also provided technical assistance (TA) to several municipalities to improve their municipal energy efficiency programs and prepared prefeasibility studies for such projects, mostly in the street lighting and water sectors, for financing under MSIP. Regional ESMAP work has also helped build interest within the Western Balkan countries for more sustainable energy efficiency schemes. The Bank's 2014 *Green Growth Country Assessment* also identified quick wins in terms of climate change mitigation in the areas of energy efficiency and water conservation.

**Several other donors are active in energy efficiency.** EBRD has a regional financing program, the Western Balkans Sustainable Energy Direct Financing Facility (WeBSEDF), which includes a credit line facility open to local SMEs or project developers to implement energy efficiency projects in municipalities through ESCO contracts. In 2017, EBRD launched the Green Economy Financing Facility (GEFF) in North Macedonia that will provide loans to households through local commercial banks for energy efficiency investments residential buildings. To date, no municipal energy efficiency investments have been financed through commercial sources. KfW financed six municipal water supply rehabilitation programs and a new municipal district heating system in Bitola. USAID, the Swiss Government, GiZ, and UNDP and others also have implemented some TA programs, focused on clean energy and energy efficiency, sustainable cities, ESCO development, etc., but with little or no follow-on investments. The European Commission (EC) is supporting a range of municipal infrastructure investments and some energy efficiency grants, mostly through its Instrument for Pre-Accession Assistance (IPA) mechanism and is interested to provide increased support for municipal service delivery and energy efficiency in cooperation with the Bank. The EC has expressed interest to support energy efficiency investments through the proposed Energy Efficiency Fund, which would be established with the support of this project. Ongoing coordination of efforts and partnering to leverage policy reforms and investment financing are underway.

#### Relationship to CPF

The World Bank's proposed Country Partnership Framework (CPS) (FY19-23) calls for a three-pronged approach to addressing these economic development challenges focusing on (a) fostering a more dynamic and competitive private sector; (b) developing a more competitive and adaptive human capital and closing opportunity gaps; and (c) achieving sustainability. Investments in energy efficiency will improve competitiveness contributing to Pillar 1, enhance the quality of public services and skills development under Pillar 2, and support Pillar 3 by reducing imports of energy, reducing public budgets for energy and helping to reduce air pollution and promote low carbon growth.



### C. Proposed Development Objective(s)

The project development objectives are: (i) reduce energy consumption in the municipal sector; and (ii) support the establishment and operationalization of a sustainable financing mechanism for the public sector

#### Key Results (From PCN)

Progress made under the proposed project will be monitored according to these PDO level results indicators: (a) projected lifetime energy savings from energy efficiency investments in municipal facilities (MWh); (b) design and operationalization of a sustainable financial mechanism to support energy efficiency projects in the public sector; and (c) associated CO<sub>2</sub> emissions reductions as a result of the energy savings (tons of CO<sub>2</sub> equivalent).

### D. Concept Description

The project will be supported by a €25 million (USD equivalent IBRD loan), along with about €4 million in co-financing (€3 million from the EU, €1 million counterpart funding (in-kind) from the Government of North Macedonia, to support energy efficiency investments in public buildings and policy/TA to help set-up and operationalize an energy efficiency revolving fund.<sup>5</sup> Physical investments will be needed to help develop the market for energy efficiency materials and services, while a transition plan is developed to move from the proposed project implementation unit (PIU) structure to a more sustainable and permanent, independent fund.

The Project would include two components: (i) energy efficiency investments in the municipal sector; and (ii) technical assistance (TA) and project implementation support.

**Component 1. Energy efficiency investments in the municipal sector** (€26 million, including €22 million financing from IBRD, 3 million grant funding from the EU, €1 million counterpart funding (in-kind) from the Government of North Macedonia). Under this component, energy efficiency and some renewable energy investments (“subprojects”) would be undertaken in public facilities (covering municipal buildings and public lighting). It is expected that these subprojects will generate demonstrable energy cost savings and social co-benefits, which would form the basis for developing a sustainable mechanism under the proposed EE Fund. The focus will be on renovation of larger buildings with high energy consumption that typically yield more energy savings. This component would support preparation of the energy audits and technical designs (procured by the Project Implementation Unit), and renovation works, construction supervision and final commissioning/energy performance certificates (hired by the municipalities). Centralized preparation work will be important to ensure the preparation documents are consistently prepared and of high quality, given that many municipalities have limited expertise in reviewing such documents. Municipalities would apply for financing based on periodic calls for proposals for the renovation of building under their management and public lighting systems. Financing would be provided through sub-loan agreements currently utilized under the ongoing Municipal Services Improvement Project (MSIP). Sub-loans would generally be repaid over a 10 to 13-year period. Public buildings owned by municipalities that would be eligible for investments include about 1,300 school buildings, 174 kindergartens, 167 administrative buildings and 30 social care institutions.

**Component 2. Technical assistance and implementation support** (€3 million IBRD). While the draft Energy Efficiency Law and various regulations provide a strong basis for EE in the public sector, additional efforts will be required to develop the Law for the proposed Energy Efficiency Fund and the legal basis for financing agreements with eligible public institutions

---

<sup>5</sup> The draft Law on Energy Efficiency includes a provision for an Energy Efficiency Fund (Article 30), “to be established as an independent and separate legal entity, with a purpose to enable achievement of the targets and support of the energy efficiency policies stipulated” within the law.





to ensure its sustainability and compliance with Macedonian legislation on public debt, public procurement and other aspects. Specific activities would include: (i) establish a legal basis for establishment of the proposed EE Fund including the draft legislation and governance structure; (ii) review of various financial instruments (e.g., loans, energy service agreements, etc.) and other service offerings of the Fund to assess demand, absorption capacity of the market, potential for nondebt instruments, repayment risks, etc.; (iii) formulation of a 3-5 year investment plan for the Fund, including a prospective subproject pipeline for the initial year of operations; (iv) targeted training of energy efficiency market actors (e.g., energy auditors, design firms, construction companies, ESCOs, commissioning inspectors) to ensure adequate technical competencies and learning lessons from early projects; and (v) support for the project implementation and PIU.

It is expected that investments under Component 1 will help to stimulate the municipal energy efficiency building and street lighting market and demonstrate that the energy cost savings and improvements in service quality (i.e., improved heating, better lighting) will enable the investment costs to be fully repaid under Component 1, while the TA under Component 2 works to establish the proposed EE Fund. Once the EE Fund is established, a transition arrangement would be implemented to allow the Fund to serve as the main implementing arm for the Government for energy efficiency and can continue to finance energy efficiency in the public sector, and eventually the residential sector, on a more sustainable and scaled-up basis.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

#### Summary of Screening of Environmental and Social Risks and Impacts

The environmental risks to be considered during the project preparation are mainly those related to the renovation and further operation of public buildings, which may include generation of wastes, including hazardous, noise, dust, disturbance to local communities and landscapes. The specific impacts can not be pre-determined as will be identified as part of the development of ESMPs for each specific site where civil works will be implemented. Some Social risks related to OHS of works could happen if the work protection measures are not applied properly. The on going PIU implementing the MSIP with extra hiring of the engineers will implement the new project. The ongoing PIU has a full time environment and social staff who, together with the project engineers, will do oversight of the implementation of the OHS measures for the workers.

**Note** To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document.

### CONTACT POINT

#### World Bank

Jasneet Singh, Rhedon Begolli  
Lead Energy Specialist

#### Borrower/Client/Recipient





Ministry of Finance  
Suzana Peneva  
State Advisor  
suzana.stoimceva@finance.gov.mk

**Implementing Agencies**

Ministry of Finance  
Suzana Peneva  
State Advisor  
suzana.stoimceva@finance.gov.mk

**FOR MORE INFORMATION CONTACT**

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

**APPROVAL**

Task Team Leader(s):	Jasneet Singh, Rhedon Begolli
----------------------	-------------------------------

**Approved By**

Environmental and Social Standards Advisor:		
Practice Manager/Manager:		
Country Director:		