

**5th Annual Report
under the Energy Efficiency Directive**

Republic of North Macedonia

Prepared by: Ministry of economy

June 2021

A. Key statistics and indicators

The annual reports referred to in EED Article 24(1) provide a basis for the monitoring of the progress towards national 2020 targets. Contracting Parties shall ensure that the reports include the minimum information provided in table below.

Estimation of key statistics and indicators in 2019	Value	Unit
Total primary energy consumption (*)	2,814.32	ktoe
Total final energy consumption (*)	1,946.65	ktoe
Final energy consumption – Transport (*)	787.63	ktoe
Final Energy consumption – Industry (*)	449.14	ktoe
Final energy consumption – Households (*)	476.44	ktoe
Final energy consumption – Services (*)	212.07 ¹	ktoe
Gross value added by sector – Industry (****)	2,013.7	mil. EUR
Gross value added by sector – Services (**)	/	mil. EUR
Disposable income of households (**)	/	mil. EUR
Gross domestic product (GDP) (**)	11,210	mil. EUR
Electricity generation from thermal power plants (**)	306.79	ktoe
Electricity generation from combined heat and power (**)	82.29	ktoe
Heat generation from thermal power generation (**)	48.98	ktoe
Heat generation from combined heat and power plants, incl. industrial waste heat (**)	22.27	ktoe
Fuel input for thermal power generation (***)	896.66	ktoe
Passenger kilometres (pkm), if available (*****)	11,731	mil. pkm
Tonne kilometres (tkm), if available (**)	10,266	thous. tkm
Combined transport kilometres (pkm + tkm), in case that separate values for pkm and tkm are not available (**)	/	

¹ This also includes agriculture

Estimation of key statistics and indicators in 2019	Value	Unit
Population (**)	2.07	millions

Table 1: Key energy statistics data.

(*) Energy statistics

<https://www.stat.gov.mk/PrikaziSooptenie.aspx?rbrtxt=64>

(**) State Statistical office

<https://www.stat.gov.mk/publikacii/2020/Makedonija%20vo%20brojki-2020-web.pdf>

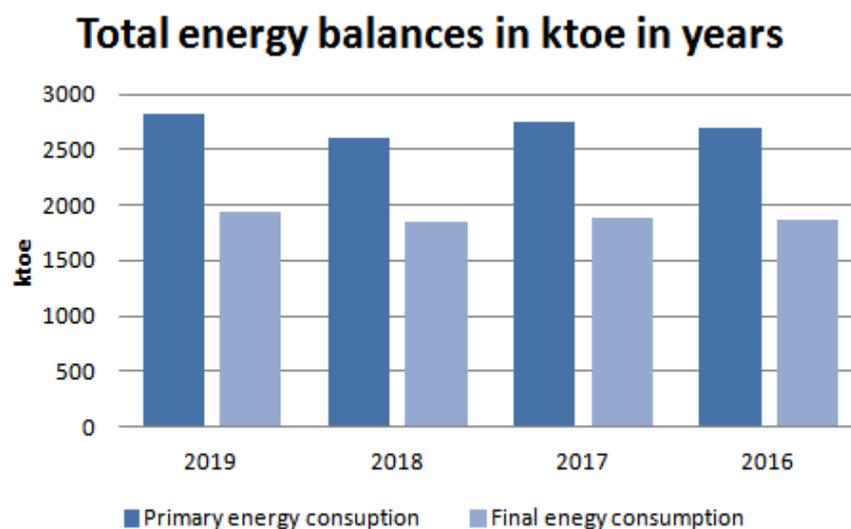
(***) Independent System Operator (ISO), electricity generation companies.

https://erc.org.mk/odluki/3RKE%20GI_2019-final.pdf

(****) OECD Data (<https://data.oecd.org/transport/passenger-transport.htm>)

B. Overview of energy consumption trends

In sectors where energy consumption remains stable or is growing, Contracting Parties shall analyze the reasons for it and attach their appraisal to the estimates.



Total energy balances in ktoe in years

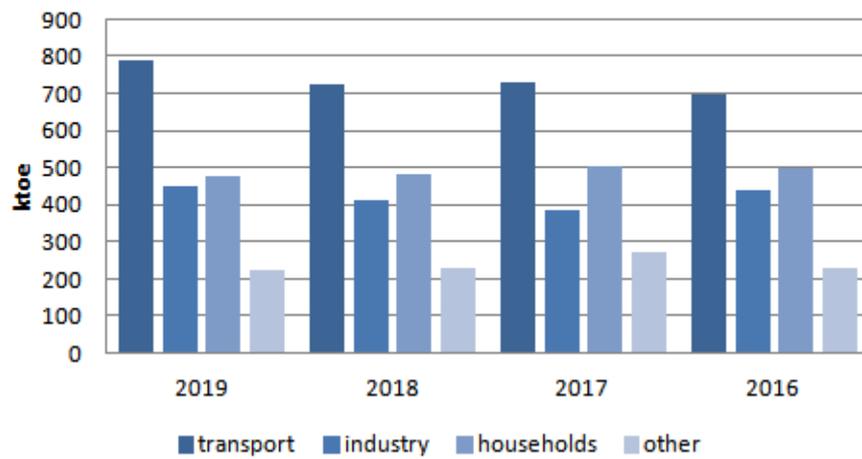


Figure 2: Final and primary energy consumption (up) and final energy consumption per sectors (down) in 2016 – 2019.

C. National energy efficiency targets

The first report shall include the national target referred to in EED Article 3(1). In the annual reports referred to in EED Article 24(1) Contracting Parties may also include additional national targets. These may be related in particular to the statistical indicators enumerated in point (A) of this Part or combinations thereof, such as primary or final energy intensity or sectoral energy intensities.

Figure 1: Division of targets per sectors and per different articles of EED (example)

TARGETS	2017	2018	2019	2020	2021
EED ARTICLE 3 [ktoe]				169.0	213.4 ²
EED ARTICLE 5 [ktoe]		/	/	0.8	1.1
EED ARTICLE 7 [ktoe]	/	/	/	13.2	15.6
PEC [ktoe]			242.6	430.9	561.1 ³
FEC [ktoe]			88.6	169.0	213.4 ⁴
FEC - BUILDINGS [ktoe]				22.5	27.5
FEC - INDUSTRY [ktoe]				7.9	10.9
FEC - TRANSPORT [ktoe]				22.4	36.9
FEC – OTHERS [ktoe]				116.2	138.1
PRIMARY ENERGY INTENSITY [ktoe/mil.EUR]			0.25	/	/
FINAL ENERGY INTENSITY [ktoe/mil.EUR]			0.17	/	/

D. Update of measures implemented in last year

Updates on major legislative and non-legislative measures implemented in the previous year which contribute towards the overall national energy efficiency targets for 2020.

- **Legislative measures**

The Forth Energy Efficiency Action Plan is prepared with the technical assistance from GIZ. Public consultation was conducted and comments and notes from the stakeholders were received. Next step is adoption by the Government, planned by the end of July.

Energy development strategy was adopted in December 2019, which as one of its main pillars is energy efficiency. The preparation of the Program for realization of the Strategy which should have been prepared in six months after adoption was postponed due to COVID crisis. The COVID – 19 crisis also has impact on the energy sector and projections in the adopted Energy strategy. For that reason, a revision of the Energy strategy is prepared and based on that findings, the draft Program for realization of the energy strategy for duration of five years is prepared. Also, strategic

²This value represents final energy savings

³ Savings in primary energy consumption

⁴ Savings in final energy consumption

environmental impact assessment of this program is prepared. Next step before adoption is organizing a public consultation. The draft version of National energy and climate plan, with energy efficiency as one of its main pillars with strategic environmental impact assessment is also prepared and next step is organizing a public consultation before adoption.

Ministry of economy is in process of preparation of secondary legislation for the Energy efficiency law, which was adopted in 2020.

The process of development of the Rulebook on MVP is in final stages, with technical assistance which has been provided by GIZ. The first draft of the MVP Rulebook has been released. In parallel the trainings for the municipalities to use the MVP tool, in order to fulfil the obligation from the Law on Energy Efficiency have been launched in the end of 2019 year and all of those were completed by the end of January 2020. The adoption of this Rulebook is planned in September.

The Ministry of Economy has submitted request to UNOPS/UNIDO for technical assistance for preparation of the Rulebook for energy audits of the large enterprises which was officially approved. At the end of January, a project task was defined for consultants who should prepare a Rulebook on energy control of large traders, which is expected to be adopted within 9 months. The consultants are selected: three from UNOPS - International Energy Management & Efficiency Expert, National Energy Management & Efficiency Expert, National Energy Efficiency Legal Expert, one expert from UNIDO. First kick-off meeting was organized and time frame was defined. Also, working group is formed.

The Energy Performance of Buildings Directive has been partially transposed into the existing Energy Efficiency Law, the Rulebook on Energy Performance of Buildings and the Rulebook on Energy Audits. Under the 'Policy Window' of the Regional Energy Efficiency Programme (REEP Plus) the Ministry of Economy has requested from EBRD a consultancy for preparation of the package by-laws for buildings arising from the Energy Efficiency Law, which was officially approved. This technical assistance covers assistance to the Ministry of Economy to prepare and adopt: Rulebook on Energy Performance of Buildings which will properly implement the requirements of Article 32 of the Law on Energy Efficiency; a Rulebook on Energy Audit of Buildings, in accordance with the requirements of Article 38 of the Law; a proposed Tariff related to the energy auditing of buildings, depending on building category, in accordance with Article 33 of the Law. This process is ongoing.

The draft Rulebook for energy consumption labeling is prepared and public consultation is planned for July. The draft Rulebook for eco labeling is also in preparation. These secondary legislations are prepared with technical support from USAID.

A Study with a typological approach for energy assessment of residential buildings in the country is underway, according to the TABULA methodology (Typology Approach for Building Stock Energy Assessment) which will contribute to the systematization of the housing stock in our country, and which will be the starting point for Strategy for reconstruction of buildings until 2030. The initial findings during the preparation of the Typology were presented to the Ministry on January 29, 2020.

On October 22nd, 2019, the Government of NM decided that the EE Fund will be established within the Development Bank of North Macedonia (DBNM, formerly the Macedonian Bank for Development Promotion or MBDP) and has looked to the Bank and EU to help capitalize its start-up. The DBNM operates pursuant to the strategic policies, goals and the priorities of the Republic of

North Macedonia and its strategic goal is to support the development of the country's economy by providing finance to small and medium-sized enterprises⁵. The Government recognizes the need to adopt the relevant regulatory changes to allow DBNM to perform the functions required to manage the EE Fund, provide financial services to public entities and address operational issues. In addition, the Government will need to establish the EE Fund's governance, management and operations and define its organizational and administrative set-up. The project for development of EE Fund consists of three components.

Component 1. Energy efficiency investments in the public sector. Within this component, realization of energy efficient projects and some investments in renewable energy in public buildings (municipal buildings, central government buildings and public lighting) are envisaged. These projects are expected to generate sustainable energy savings and social benefits. This component is divided into three sub-components as follows:

Sub-component 1 (a) - Energy efficiency investments in the municipal sector. Municipalities will continuously apply with proposals for financing projects for renovation of public buildings and public lighting. The financing of the project will be provided 80% in the form of long-term domestic borrowing and 20% in the form of non-repayable grant funds. The borrowing of the municipality will be realized by concluding a sub-loan agreement between the municipalities participating in the Project and the Ministry of Finance. The sub-loans that will be granted to the municipalities according to the loan will have the following conditions: repayment period from 7 to 12 years with included grace period up to 3 (three) years and interest rate to be paid by the sub-borrower equal to the interest paid by Republic of North Macedonia in accordance with the Loan Agreement.

Basic criteria for project selection are:

- i. the building is owned by the local government or assigned to the local government;
- ii. to be structurally and seismically safe and not to have fully energy efficient renovation in the past 10 years and to be at least 5 years old;
- iii. have no plans to relocate office space, close, demolish the building or privatize; and
- iv. satisfactory rate of space utilization (60% of the designed capacity to be used).

The energy efficient project should provide minimum technical performance of the renovated buildings (ie energy performance certificate of class C or higher) and include a minimum energy saving of 20%.

Sub-component 1 (b) Energy efficient investments in central government buildings. Some of the public buildings that provide public services at the local level are managed by the central government, including health centers and regional hospitals. This component envisages financing of investments in energy efficiency and renewable energy sources in the public buildings of the health sector which are managed by the central government. This sub-component will support the preparation of energy audits, technical design, renovation of buildings, supervision of the performance of construction works and all services related to these facilities. Within this sub-component, the 36 primary health homes as well as the Institute of Physical Medicine and Rehabilitation in Skopje will be renovated.

Sub-component 1 (c) Provision of technical assistance for investment support. This sub-component provides technical support for project screening, preparation of detailed energy controls,

⁵ <http://www.mbdp.com.mk/index.php/en/profile>

preparation of technical designs and technical specifications as well as supervision over the execution of construction works for the investments provided in sub-components 1a and 1b.

Beneficiaries of the funds from Component 1 are the municipalities in the Republic of Northern Macedonia, the City of Skopje and the municipalities in the City of Skopje that meet the requirements for borrowing in accordance with the Law on Public Debt and the Law on Financing of Local Self-Government Units and the Ministry of Health for Primary Health Homes and the Institute. for physical medicine and rehabilitation in Skopje.

Component 2. Technical Assistance and Support for the Implementation of the Project. Within this component is provided:

1. Providing technical support for the establishment of the Energy Efficiency Fund (EE Fund) which includes: (i) drafting amendments to the legal framework required for the establishment of the EE Fund, including defining its management structure; (ii) developing the Fund's funding modalities, services, target markets, financial projections and fee structure to ensure its sustainability; (iii) development of a detailed organizational structure, management and staffing plans; (iv) development of draft financing agreements and other legal documents to support the operation of the Fund; (v) development of administrative and operational procedures; (vi) development of a multi-annual business plan; and (vi) preparation of a staffing plan, including tasks for key positions.
2. Preparation of draft bylaws on energy efficiency and providing support for further development of the energy efficiency market.
3. Conduct information campaigns and provide training for energy efficiency market stakeholders to ensure adequate demand for municipal applications, technical competencies and sharing experiences and knowledge from previous similar projects.
4. Strengthen the capacity of the Project Implementation Unit for project management, monitoring and evaluation, including project audits.

Beneficiaries of the funds from this component are the Ministry of Economy, the Ministry of Finance and the Development Bank of North Macedonia, in the structure of which the Energy Efficiency Fund will be established.

Component 3. Start-up capital for the Energy Efficiency Fund.

In order to ensure the initial functioning of the Energy Efficiency Fund, after its establishment within the Development Bank of North Macedonia, this component provides funds for (a) operating costs and marketing activities of the Fund, (b) preparation of energy controls, main projects and technical specifications, technical audit of the main projects and technical specifications, performance supervision, certificates for energy classes and other technical studies, for future energy efficient investments as well as financing of the investments in energy efficiency and renewable energy in public buildings.

The beneficiary of the funds from this component will be the Energy Efficiency Fund which should be established within the structure of the Development Bank of North Macedonia.

The Energy Efficiency Project in the Public Sector will be implemented through the Project Unit for Implementation of the Municipal Services Improvement Project - MSIP, which operates within the Ministry of Finance.

The Law on Borrowing of the Republic of North Macedonia by a Loan from the International Bank for Reconstruction and Development - World Bank under the Loan Agreement for Financing the Energy Efficiency Project in the Public Sector was adopted in April („Official Gazette of Republic of North Macedonia”, 77/21) with which North Macedonia borrow a loan from World bank in amount of 25 mil EUR for energy efficiency projects in public sector.

With technical support, the establishment of the Fund will be realized. The consultants are being selected who will have a task to define main mission of the Fund, propose regulatory and legal changes needed to allow DBNM performing in the Fund. Also the consultants will develop documents related to the EE Fund's principles and implementation rules governing the EE Fund.

Establishment of functional energy efficiency Fund is one of the basics elements needed for successfully development of measures envisaged in the crucial strategic documents as NECP and Program for realization of energy strategy, focused mostly on retrofitting of the buildings, greater use of energy efficiency appliances with modern technologies etc. With the technical assistance, it will be also defined in which phase and years, which project envisaged in the NECP and Program for the realization of the energy strategy would be realized.

- **Non-legislative measures**

The Government of the Republic of North Macedonia, on the proposal of the Ministry of Economy, has adopted the Program for Promotion of Renewable Energy Sources and Promotion of Energy Efficiency in Households for 2020, which envisages the implementation of the above-mentioned measures and for the first time introduces the measure of reimbursable part of the costs for the purchase of inverter air conditioners in the households. For the realization of this Program in the Budget, a total of 54,000,000 denars have been provided. Due to the unforeseen situation with the Covid-19 pandemic, at the beginning of 2020 a public announcement was published to reimburse part of the costs for purchasing pellet stoves in households, while the funds provided for other measures were reallocated to the Fund for assistance and support to deal with the crisis caused by COVID-19.

At the beginning of 2021, another Program for Promotion of Renewable Energy Sources and Promotion of Energy Efficiency in Households for 2021 was adopted which provides 52,000,000 denars for reimbursement the cost for pellet stoves, PVC windows and solar collector for two categories of people, normal and category for people with low incomes. Also, for the first time this Program provided reimbursement of the costs for installation of PVs on rooftops in households. All public announcements were conducted and now in the process of evaluation of the received applications.

Also, city of Skopje has made a public announcement for subsidizing the cost for buying electric scooters and bikes up to 30 %, but no more than 7.000 denars for electric scooters and 3.000 denars for bikes.

Due to the big air-pollution in our county, the most polluted cities (Skopje, Tetovo and Kichevo), in 2020 announced public call for reimbursement of approximately 100% of the costs for purchase of inverter air-conditioners. The main condition to be eligible applicant is not to be able to connect to the district heating system and to return the old heating stove. For this year, until now, public announcement is conducted in Skopje.

The United Nations Development Program (UNDP) together with the City of Skopje and the Ministry of Environment and Physical Planning announced a call for selection of households from Lisice, one of the most polluted parts of the city of Skopje. Here, the selected households will be supported with a grant of up to \$ 10,000 introducing measures to increase energy efficiency in their homes and thus contribute to reducing air pollution. The main focus is on heating systems.

The Residential Energy Efficiency project in the Western Balkans was launched in February 2020 as part of the Economic Resilience Initiative-Infrastructure Technical Assistance (ERI-ITA) project, funded by the European Investment Bank (EIB). The project promoter is Habitat for Humanity International (HfHI), in coordination with the EIB. The countries involved in the project are North Macedonia and Bosnia and Herzegovina. The main objective of this project is to develop a feasibility study for financing energy efficient projects in the residential sector in the Western Balkans.

The project for "Creating conditions for the implementation of ESCO projects" is underway, which is funded by the Regional Energy Efficiency Program (REEP), and aims to support energy efficiency projects for street lighting and small distribution systems for heating in the municipalities. So far, this project has covered five municipalities with energy efficiency projects for public street lighting. The second phase of the project continued in 2021 where additional municipalities will be included with energy efficiency projects for public street lighting as well as municipalities with energy efficiency projects in small distribution heating systems. At the same time, through this project, a detailed energy control was realized in the building of the Ministry of Economy.

A representative from the Ministry of Economy actively participated in the meetings of the Energy Efficiency Coordination Group within the Energy Community.

The Republic of North Macedonia has expressed interest in being included in the proposed Program for Development of Energy Efficiency in Buildings through the Green Climate Fund, submitted by the French Development Agency. The proposed program for energy efficiency in buildings would include support for the public and private sector in the form of grants and loans for the installation and introduction of solutions that will mean improving or increasing energy efficiency and reducing greenhouse gas emissions, primarily carbon dioxide. The proposed energy efficiency program would be a regional initiative, open to the involvement of underdeveloped countries, developing countries and other beneficiaries.

The draft program is expected to cover the following two components:

1. Policy development component, legal and strategic framework according to national / local needs.
2. Climate investment component in public and private buildings and structures.

Under the IPA 2, the technical assistance to prepare inventory of public buildings is planned to be received. The methodology for classification of the buildings will be defined by the selected as well as prepare questionnaire for energy performance Inventory in public buildings and buildings of the public enterprises at the local level. Collected data should be analysed and pipeline for establishing energy performance Inventory in public buildings should be proposed. The data should be organized in a way that enables easy reading of the information, hence should be taken in to account some data analyse program. It is expected from the inventory, the buildings in the worst energy condition to be targeted and to be taken in account for conduction energy audits. After preparing of the inventory, trainings for the stakeholders will be organised.

E. Central Government buildings (Article 5)

The Law introduces an obligation to reconstruct at least 1% of the total area of buildings (with a usable floor area of at least 250 m²) annually, which are used and owned by the central government. In order to enable the fulfillment of this obligation, the Ministry in cooperation with the Office for General and Common Affairs prepared and published a list (inventory) of the buildings used by the bodies at the state level. The government instructed the Office for General and Common Issues to ensure that energy audits of buildings were carried out in the buildings with the worst condition on the list. In February 2021, the Ministry of Economy through the WBIF program submitted an application for assistance in preparing a Feasibility Study for the implementation of a plan for the reconstruction of buildings at the central level.

The set-up of an independent EE Fund is envisioned in the Energy efficiency law, adopted in 2020, which will support the achievement of national EE targets etc.

The proposed EE Fund would introduce ‘a pay from savings mechanism’ to help establish a critical precedent to help the government transition away from grant financing to more sustainable financing. The repayments would be used by the EE Fund to finance additional subprojects, thereby making the funds revolve over time. The Fund is expected to cover its operating costs through administration fees, and eventually thus become a sustainable financing and implementation entity. Eventually, the goal will be to crowd in commercial financing from local banks and private investment through energy service companies (ESCOs) in order to develop and sustain a fully market-based program. If successful, the Fund could be expanded to other underserved EE markets, such as the residential sector, in the future.

Potential investors for providing equity and debt financing for the EE Fund include the World Bank, the European Commission’s IPA facility, the Global Environment Facility (GEF), the Green Climate Fund (GCF) and others.

A project for rehabilitation of state student dormitories is underway, focused on increasing energy efficiency and providing optimal living conditions. The project will focus on state dormitories in the following cities: Skopje, Prilep, Bitola, Ohrid and Stip. The entire implementation of the Project is expected to be completed in 54 months, i.e. the construction works to be completed in the second quarter of 2024, with additional 12-month period for determining defects. The total investment value of the Project for energy efficient rehabilitation of student dormitories in the Republic of Northern Macedonia is around 25 million euros. The financial structure envisages funding from two sources: a loan from the Government of the Federal Republic of Germany, through KfW, in the amount of EUR 20 million and an EU grant in the amount of EUR 4.785 million. As a precondition for concluding the above-mentioned agreements with the KfW, the Law on Borrowing was adopted by the Parliament.

F. Energy efficiency obligations (Article 7)

Energy savings achieved through the national energy efficiency obligation schemes referred to in EED Article 7(1) or the alternative measures adopted in application of Article 7(9).

Article 7 of EED allows using the energy efficiency obligations schemes, alternative measures or any combination. This section should provide information on progress with functioning of the EEO scheme, explanation of categories of alternative measures, and corresponding savings achieved.

According to the "Energy Efficiency Obligation Scheme" of the EE Directive, the Energy Efficiency Law prescribes rules and obligations for distribution network operators and / or suppliers of energy markets in the Republic of North Macedonia to achieve savings in final energy consumption or to prove it by applying alternative measures. Alternative measures can be of various types such as: introduction of new taxes on pollution, sale of products with energy characteristics (except those for which there is an obligation so far), establishment of an EE Fund, voluntary agreements introducing highly efficient technologies, campaign, introduction of fees for purchasing inefficient products, i.e. using inefficient services, renovation of municipal buildings and public enterprises, etc. The draft documents explaining the draft policies related to the Obligation Scheme for energy efficiency and impact assessment as well as energy savings and costs for alternative measures were submitted (with REEP Plus support) on 22.10.2020 and they are under review. A workshop with stakeholders will be organized this summer to get acquainted with the approaches.