TEHNOLAB Ltd Skopje
Environment, technology, protection at work, nature

PO Box.827, K.J Pitu No 28/3-24, Skopje tel./fax: ++389 2 2 448 058 / ++389 70 384 194
www. tehnolab.com.mk; e-mail: tehnolab@tehnolab.com.mk

STRATEGIC ENVIRONMENTAL ASSESSMENT REPORT ON ENERGY AND CLIMATE PLAN OF THE REPUBLIC OF NORTH MACEDONIA 2021-2030

(Non-technical summary)

INTRODUCTION

In accordance with the recommendation of the Ministerial Council of the Energy Community (2018/1/MC-EnC) for the preparation of an integrated national energy and climate plan and the corresponding Energy Community Policy Guide, the Republic of North Macedonia has prepared a national energy and climate plan (NECP) for the period 2021-2030. In response to the submitted document, the Energy Community Secretariat provided its comments and recommendations. In order to take into account these recommendations and the changed circumstances that have arisen in the meantime (coal phase-out, changes in the Energy Community acquis and the increased importance of energy security), an update of the Energy and Climate Plan is necessary.
In this regard, within the framework of the contractual framework "Services for EU's External Action 2023", an initial draft of the updated Energy and Climate Plan has been prepared.

In accordance with the Law on the Environment, this NECP is a planning document for which it is necessary to prepare a Strategic Environmental Assessment Report (SEA) in order to ensure environmental protection and promote sustainable development by integrating the basic principles of environmental protection into the procedure for preparing and adopting planning documents.

The responsible expert for the Strategic Environmental Assessment Report is Magdalena Trajkovska Trpevska, B.Sc.Chem.Eng. - Expert for Strategic Environmental Assessment.

A multidisciplinary team of experts and professionals participated in the preparation of this Report, and it was prepared in accordance with the Regulation on the Content of the Strategic Environmental Assessment Report (Official Gazette of the Republic of Macedonia, No. 153/07).

SUMMARY / BRIEF OVERVIEW OF THE CONTENT, MAIN OBJECTIVES OF THE PLANNING DOCUMENT AND THE RELATIONSHIP WITH OTHER RELEVANT PLANS AND PROGRAMS / PLANNING DOCUMENTS

The planning document – National Energy and Climate Plan of the Republic of North Macedonia (NECP) covers the following topics:

- Overview and process for establishing the plan
- National goals
- Policies and measures
- Current status and projections for existing policies and measures
- Assessment of the impact of planned policies and measures with existing policies and measures .

In 2020, the Republic of North Macedonia prepared a National Energy and Climate Plan for the period 2021-2030 in accordance with the Recommendation of the Ministerial Council of the Energy Community (2018/1/MC-EnC) and the relevant Policy Guidance from the Energy Community Secretariat (PG 03/2018).

In accordance with the comments and recommendations of the Energy Community Secretariat, in response to the document submitted in November 2020, as well as in accordance with the changed circumstances in the meantime (abandonment of coal as a fuel, changes in the Energy Community acquis and the increased importance of energy

security), the ongoing update of the National Energy and Climate Plan (NECP) has been undertaken.
The National Energy and Climate Plan of North Macedonia elaborates on all five dimensions of the Energy Union, namely: **decarbonization** (covering two segments: greenhouse gas emissions and renewable energy sources), **energy efficiency** , **energy security** (i.e. security of energy supply), **internal energy market** and **research, innovation and competitiveness** . Each of the topics addressed in the NECP are considered from the perspective of these five dimensions.

This plan proposes 61 measures to achieve the set goals defined in the Plan for each of the five dimensions. The main goals of the Plan are given in the following table.

Table: Main objectives of NPEK

	Dimension	**Indicator**	**national targets (2030)**
1.1	Decarbonization	Total greenhouse gas emissions (million metric tons) CO2eq)	**7.21**
		Greenhouse gas emissions and removals (million metric tons $CO2_{eq}$)	**5.26**
1.2	Decarbonization (RES)	RES participation (%)	In gross final energy consumption – **31.6%**
			In final electricity consumption – **51.2%**
			In final energy consumption for heating and cooling – **38.9%**
			In final energy consumption in transport – **19%**
2	Energy efficiency	Primary energy consumption (Mtoe)	**2.40**
		Final energy consumption (Mtoe)	**1.87**
3.	Energy security	For increased diversification of energy supply **Primary production from renewable sources and biofuels**	**20 PJ**
		On reducing dependence on energy imports - **imports of oil and oil derivatives**	**35 PJ**
		For increased flexibility of the energy system – **capacity of built energy storage facilities (batteries and reversible power plants)**	storage facilities with a total capacity of 200 MW connected to the electricity system and the ability to store 400 MWh of energy for increased flexibility of the energy system
4.	Internal energy market	For Electricity Interconnection, current interconnection levels are higher than EU targets.	No goals have been set

		Electrical infrastructure	**Key infrastructure projects:** • Construction of a 400 kV interconnection transmission line between North Macedonia and Albania (Bitola, North Macedonia – Elbasan, Albania) - section MK and 400/110 kV Ohrid substation • Upgrading of the western 110 kV ring (Vrutok–Skopje and Gostivar–Oslomej–Kicevo–Sopotnica–Bitola) • Strengthening infrastructure in the eastern and northeastern parts of North Macedonia • Strengthening the transmission network in the southeast region – Miletkovo and associated 110 kV projects • Reactive power and voltage regulation – 400 kV shunt reactor Dubrovo • Digitalization of the MEPSO transmission infrastructure management system
		For energy transmission infrastructure	**Projects for diversification and upgrading of natural gas infrastructure** • Construction of the gas pipeline interconnection with Greece (Gevgelija to Negotino) • Construction of the gas pipeline from Skopje - Deve Bair to the border with Serbia • Construction of the gas pipeline interconnection between North Macedonia and Kosovo • Construction of the gas pipeline interconnection between North Macedonia and Albania • Construction of main gas pipeline sections: Gostivar-Kicevo, Sveti Nikole-Veles, branch to Gevgelija, branch to TE Negotino, branches to TIRZ, Kicevo-Ohrid and Ohrid-Bitola • Developing a gas distribution network • Improvement and upgrading of the heating network of the city of Skopje
		For Market Integration – harmonization of the regulatory framework	Harmonization of relevant legislation with the EU regulatory framework in order to integrate the energy market
		About Energy Poverty – defining energy poverty	A multidimensional definition of energy poverty has been established to be used in annual programs for vulnerable consumers.
5.	Research, development and competitiveness	Alignment with research priorities and development of the Energy Community	- to increase access to research and innovation funding programmes from the EU (such as Horizon Europe, the successor to Horizon 2020) and other international donors in the energy and climate-related area - to set a share of national funding targets for public research and innovation linked to the research and innovation priorities of the Energy Union.

This plan proposes 61 specific measures to achieve the set goals for each of the five dimensions. The policies and measures defined by the NECP are aimed at implementing national strategic policies that are aligned with the five key pillars of the European Energy Union, namely:

1. Strengthening energy security through diversification of energy sources, reducing dependence on coal, increasing the share of RES and upgrading the natural gas infrastructure.
2. Promoting the internal energy market through liberalization of the energy market (an ongoing process) and harmonization of national regulation with EU market rules in order to foster competitiveness and efficiency.
3. Improving energy efficiency through the implementation of national action plans for optimized energy use in industry, transport and facilities used by the public sector, the commercial sector and the housing sector
4. Commitment to decarbonization and climate goals with a focus on closing outdated coal-fired power plants and replacing them with cleaner energy alternatives.
5. Encouraging research, innovation and competitiveness with the aim of digitalizing the energy system and finding innovative energy solutions.

STATE OF NOT IMPLEMENTING THE PLAN

Population health and socio-economic status

Failure to implement the Energy and Climate Plan would mean the absence of economic benefits for the population and economic development due to:

- Market dependence on energy imports and the continuation of the trend of fossil fuel energy production in outdated plants that do not operate in accordance with BAT (best available techniques). These facilities will continue to pose a threat to the environment and public health, not only in terms of air pollution, but also in terms of water quality, soil, waste generation
- Increasing the country's dependence on electricity imports, which will affect the price of electricity.
- The country is heavily dependent on primary energy imports, especially oil and natural gas, which poses a risk to energy security and energy price volatility.
- The projects that envisage the modernization and revitalization of existing capacities, which, according to previous work, have been identified as some of the biggest polluters in the country, will not be implemented.
- Reducing the employment opportunities of the unemployed population
- Continuation of the trend of unemployment, poverty and low living standards, migration, reduced birth rate, etc.
- Failure to utilize available European funds for the modernization of outdated technologies and the implementation of green industrial technologies
- Reduced revenues in the state budget

Air and climate change

Failure to implement the Energy and Climate Plan would lead to:

- Lack of implementation of policies and measures to achieve significant reductions in emissions of greenhouse gases and other pollutants in the air and improve ambient air quality.
- Without the implementation of the Plan, the activities that envisage the modernization and revitalization of existing capacities that are sources of greenhouse gases will not be realized.
- Fossil fuels will continue to be used extensively for the production of electricity and heat.
- The earth will continue to be dependent on coal-fired power generation which will continue to put pressure on environmental quality .

- Decarbonization processes (increased share of RES and improvement of EE) will stagnate, which will cause the country to fail to align its energy and climate policies with the European Green Deal and the Energy Community Treaty.

Water

Failure to implement the Plan would meant :

- The targets for the share of RES in primary energy production will not be reached.
- From the perspective of the environment, water quality and quantity, without the implementation of the Plan, the water situation will remain at the current level, the qualitative and quantitative characteristics will remain unchanged (especially the flow of surface waters and the yield of groundwater). This means the absence of all associated negative (mainly related to water quality and biodiversity) and positive impacts (benefits for the energy system, balancing, etc.).

Waste

In a situation without implementation of the Energy and Climate Plan, it would mean that:

- Waste management will not be aligned with the Waste Management Strategy and the Strategy for the Use of Renewable Energy Sources, and at the same time, the trend of the country's dependence on electricity imports and the trend of instability of the energy system will grow.
- The trend of environmental burdens originating from waste management will continue due to the inability to establish and implement policies and measures related to the reduction of waste and materials from industrial facilities.

Biodiversity and landscape

Energy projects are generally associated with impacts on biodiversity and the landscape, especially due to the areas they occupy. Failure to implement the Energy and Climate Plan could mean:

- maintaining the state of biodiversity at its current level, as well as the absence of impacts on this issue and possible threats.
- From the aspect of the sustainable use of the country's energy potential, without the implementation of the Plan, activities related to the use of renewable energy sources, revitalization and modernization of existing industrial complexes, and modernization and upgrading of the energy transmission network will not be realized.
- the trend of environmental media pollution will continue,
- Activities for the production of energy from renewable sources and natural gas will not be implemented, energy and heat production will remain at the current level, and all of this will continue to directly and indirectly affect biodiversity.

Cultural heritage

Without the implementation of the Energy and Climate Plan, the situation with cultural heritage will remain at the current level, i.e. the possible impacts that may arise during the implementation of the planned measures or activities will be avoided.

ENVIRONMENTAL GOALS SET AT NATIONAL AND INTERNATIONAL LEVELS

The basic principles for environmental protection in the country are set by the Constitution of the Republic of Macedonia, as the highest legal document in the country. The Constitution stipulates that one of the basic principles of fundamental values is the regulation and

humanization of space and the protection and improvement of the environment and nature. Also, one of the basic freedoms and human rights is the right to a clean and healthy environment, but it is also an obligation of citizens to improve and protect the environment, while the country is obliged to provide conditions for the exercise of this guaranteed right of citizens (Article 43).

Guided by these constitutional provisions, the Republic of North Macedonia establishes a functional and efficient national environmental management system, related to:

- Continuation and intensification of the process of approximation to EU policies in the field of environment;
- Strengthening administrative capacities necessary for efficient environmental management;
- Providing a platform for efficient implementation and enforcement of environmental protection requirements by strengthening capacities for efficient environmental management at all levels of governance and by ensuring close cooperation between competent authorities at horizontal and vertical levels;
- Integration of environmental protection policy into other sectoral policies;
- Encouraging industry, service providers and other entities in the environmental field to take greater responsibility for environmental protection;
- Solving environmental problems of national importance;
- Increasing the level of fulfillment of obligations arising from regional and global agreements in the field of the environment;
- Last but not least, is increasing the level of environmental investment to achieve EU standards.

The right to a clean and healthy environment is the subject of a significant number of legal acts, strategic, planning and programming documents at the national level, as well as international agreements and policies that the Republic of North Macedonia has ratified.

Issues of nature protection, ensuring a clean and healthy environment and environmental protection objectives are defined in accordance with national and international legislation and have been taken into account in the preparation of the Strategic Assessment Report, and a number of other strategic, planning and programming documents are also included.

LIKELY SIGNIFICANT IMPACTS ON THE ENVIRONMENT AND MEASURES TO PROTECT, MITIGATE AND NEUTRALIZE THE IMPACTS

During the preparation of the Strategic Environmental Assessment Report, analyses were conducted of the likely significant impacts from the implementation of the Activities (policies and measures) proposed in the planning document, whereby they were analyzed as impacts that positively reflect on the environment and impacts that cause negative effects on its media and areas.

The analysis involves considering the impacts of the NECP on the environment from a global, strategic perspective. The evaluation was carried out in accordance with the Regulation on the content of the strategic environmental assessment report and covers the

impacts on air, climate change, water, soil, waste, biodiversity, population, human health and socio-economic development.

It is necessary to note that when assessing the impacts on the environment, i.e. on the media and its areas, the construction phase of the facilities and infrastructure for the production, transmission and distribution of energy was not considered, which will be considered in more detail during the prescribed procedures during their individual implementation.

Based on the analysis and assessment of the state of the environment and accordingly to the estimated impacts, i.e. the reasons that contribute to the planning document having negative impacts on the environment, measures are envisaged to protect, reduce and neutralize these impacts.

A tabular presentation provides a description of the Activity and its impact on the media and environmental areas and measures to mitigate the impacts. This has been done for each of the measures proposed in the NECP, analyzed within each of the five dimensions.

ANALYSIS OF ALTERNATIVES

When preparing the Strategic Environmental Assessment Report, attention is mandatory paid to the comparative analysis of alternative solutions that were taken into account during the preparation of the planning documentation, including the zero alternative, i.e. the alternative without implementing the planning document.

For this planning document, the analysis was made on two alternatives:

Alternative A – Implementation of the planning document, through the implementation of the measures provided in the NECP, defined in the five dimensions and

Alternative B – Without implementation of the planning document, i.e. not to implement the measures defined in the National Energy and Climate Plan of the Republic of North Macedonia

The analysis is done individually for each of the five dimensions: Decarbonization, Energy Efficiency, Energy Security, Internal Energy Market and Research, Innovation and Competitiveness.

The analysis conducted shows that the Considered Alternative A, i.e. the implementation of the NECP through the realization of the measures provided in the NECP, is acceptable.

ENVIRONMENTAL MONITORING PLAN

The main objective of the monitoring is to monitor the effects on the environment and human health resulting from the implementation of the planning document. The implementation of the Environmental Monitoring Plan will collect data that can serve to document the status of a particular environmental medium (air, water, soil) and its areas, as well as monitor the effects of the applied mitigation measures. The Monitoring Plan also enables the establishment of an interactive relationship between all parties involved and is a basis for the competent institutions to control the process of implementing the legal regulations and make the right decisions.

The body preparing the planning document is obliged to monitor the effects on the environment and human health from the implementation of the planning document, in order

to identify unforeseen negative effects at an early stage and to take appropriate actions to improve the environmental situation. The monitoring of the effects on the environment and human health from the implementation of the planning document, where appropriate, may be carried out through the existing state and local environmental monitoring networks in the Republic of North Macedonia.

The main objectives of the Monitoring Plan are:

- To confirm that the conditions agreed upon during the approval of the planning document have been properly implemented,
- To confirm that the impacts are within the predicted or permitted limit values,
- To enable management of unforeseen impacts or changes and
- To confirm that the implementation of mitigation measures increases the benefits in terms of environmental protection.

The implementation of the Monitoring Plan implies monitoring appropriate indicators through which the achievement of the objectives of the planning document will be observed, as well as monitoring changes in the state of environmental media as a result of the implementation of the planning document, in accordance with legal obligations.

In case of perceived negative effects from the implementation of the planning document, the body preparing the planning document, other legal and natural persons and associations of citizens in the field of the environment are obliged to notify the state administration body competent for environmental matters.