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COMMISSION STAFF WORKING DOCUMENT

Assessment of the draft National Energy and Climate Plan of Slovenia

Accompanying the document

Commission Recommendation

**on the draft integrated National Energy and Climate Plan of Slovenia covering the
period 2021-2030**

{C(2019) 4424 final}

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1. SUMMARY

Main observations¹

- ✓ **Slovenia's draft integrated National Energy and Climate Plan (NECP)** is based on middle-term strategic and action documents, laying down the 2020 and 2030 objectives and measures that have already been adopted, and some indicative proposals for measures to achieve the 2030 targets that still have to be assessed and approved by Slovenia. The long-term targets and objectives for energy will be included in the Resolution on the Energy Concept of Slovenia (ReEKS), which is yet to be adopted by the Slovenian Parliament.
- ✓ On the basis of a complete set of middle and long-term objectives and finalised analytical basis, a strong final plan can be developed, if it is underpinned with consistent policies and measures, exploiting more fully the indicated opportunities of increased research and innovation considerations, as well as the contribution of energy efficiency for the modernisation of the economy and job creation.
- ✓ The 2030 **greenhouse gas emission target** for sectors outside the EU Emission Trading System (**non-ETS**) of -15 % compared to 2005 set by the Effort Sharing Regulation (ESR)² is underpinned by indicative sectoral targets varying between -70 % for buildings and an expected increase by 18 % for the transport sector. However, additional policies and measures to achieve the target and the no-debit commitment (i.e. emissions do not exceed removals) under the **Land Use, Land Use Change and Forestry (LULUCF)**³ Regulation are not yet included in the draft plan, nor are considerations if a domestic overachievement under the ESR could be cost efficient for possible transfers to other Member States and thereby contribute to growth and jobs.
- ✓ The draft NECP proposes a contribution expressed by the share of energy from **renewable** sources in gross final consumption of energy in 2030 of 27 % (from 25 % in 2020), which is significantly below the 37 % renewable share in 2030 that results from the formula in Annex II of the Governance Regulation, a situation which would also require an indicative trajectory in the final plan that reaches all reference points⁴ in accordance with the national contribution set out in the final plan. In developing the final plan and addressing possible barriers for the development of renewable energy projects, further guidance can be gathered from the Commission's guidelines on renewable energy (wind and hydro), energy transmission and Natura 2000⁵. The final plan would benefit from elaborating further on the

¹ In addition to the notified draft NECP this assessment also considers informal bilateral exchanges, which are part of the iterative process established under the Governance Regulation.

² Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013.

³ Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU.

⁴ Pursuant to Article 4(a)(2) of Regulation 2018/1999.

⁵ http://ec.europa.eu/environment/nature/natura2000/faq_en.htm;

http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm;

policies and measures allowing the achievement of the contribution and on other relevant sectorial measures.

- ✓ Slovenia's contribution to the EU **energy efficiency** target of 32.5 % in 2030 is expressed only in primary energy consumption which should not exceed 7.1 Mtoe in 2030. The ambition of the proposed level of the contribution is low compared to what is expected at the EU level to collectively reach the Union's 2030 energy efficient targets. The final plan would benefit from a target for final energy consumption as well as more on details on the policies and measures to achieve these targets. As regards **energy security**, an assessment of whether the existing policies will ensure reducing the use of fossil fuels in the power sector would improve the quality of the final plan. As regards the operation of nuclear reactors, the final plan would benefit from including specific elements such as foreseen lifetime of operation and how the long-term supply of nuclear fuel and the levels of strategic reserves are ensured. Reflecting on cooperation with Croatia as regards these long-term challenges would benefit the final plan.
- ✓ Slovenia has already achieved the electricity interconnection level aimed of at least 15 %. Besides information on the new electricity and gas infrastructure projects, the draft plan contains limited information on general market functioning and does not yet include any specific objectives and targets relating to the **internal market** dimension. The draft plan provides limited information on how to reduce energy poverty for the period 2021-2030.
- ✓ The **research, innovation and competitiveness** dimension includes competitiveness objectives. It provides insufficient clarity regarding specific research and innovation objectives and a description of policies and measures until 2030.
- ✓ The analytical basis describes the current situation with existing measures. The draft NECP does not yet contain an assessment of the impacts of planned measures. It also misses an assessment of the **investment needs**, risks and barriers, expenditures and funding sources. The draft plan does therefore not yet fully take advantage of the role NECPs can play in providing clarity to investors and attracting additional investments in the clean energy transition. The final plan would benefit from complementing the analysis of interactions with **air quality and air emissions** policy, and presenting the impacts of policies and measures on air pollution.
- ✓ The draft plan does not sufficiently address **just transition** aspects, especially in relation to the coal regions that would be affected by Slovenia's plans to gradually phase out the use of fossil fuel for electricity generation.
- ✓ A list of all **energy subsidies** and actions undertaken and planned to phase them out, in particular for fossil fuels, need to be included in the final plan.
- ✓ There is significant potential for further **regional cooperation** in the framework of the Central and South Eastern Europe Energy Connectivity (CESEC) group, notably in the energy security and internal energy market areas, as well as exploring the cross-border potential of a coordinated energy and climate policy notably in the Adriatic with the aim of reducing the region's carbon footprint and implementing an ecosystem approach. In this regard, an assessment of the macro-regional aspects would further enrich the analysis and provide solid basis for regional cooperation in the future. The draft plan has some examples of **good practices**. It includes indicative targets for the reduction of GHG emissions by 2030

http://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf




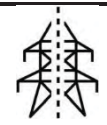
for six individual ESR sectors. Slovenia has set a long-term vision and adaptation goal (2050) of reducing exposure, sensitivity and vulnerability to climate change and considers adaptation in policies and measures, such as cooperation mechanisms, inclusion and awareness raising strategies. The draft plan also quantifies the charging infrastructure required for the roll-out of electromobility.

Preparation and submission of the draft plan

Slovenia has notified to the European Commission its draft National Energy and Climate Plan (NECP) on 31 December 2018. The draft NECP is partly structured according to Annex I of the Governance Regulation. Although a **public consultation** was conducted on the underpinning draft Energy Concept, the specific consultation on the draft NECP as well as the **regional cooperation** processes were postponed to 2019; consequently, the draft plan does not yet take into full consideration the views of the stakeholders and of the neighbouring Member States.

Overview of the key objectives, targets and contributions

The following table presents an overview of Slovenia's objectives, targets and contributions under the Governance Regulation⁶:

	National targets and contributions	Latest available data	2020	2030	Assessment of 2030 ambition level
	Binding target for greenhouse gas emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)	-7	+4	-15	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	21.5	25	27	Below 37 % (result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe) Final energy consumption (Mtoe)	6.6 4.9	7.1 5.1	7.1	Very low
	Level of electricity interconnectivity (%)	84	132	Not provided	N/A

Sources: EU Commission, *ENERGY STATISTICS, Energy datasheets: EU28 countries; SWD(2018)453; European Semester by country*⁷; COM/2017/718; Slovenian draft NECP.

⁶ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

⁷ https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-your-country_en.

2. ASSESSMENT OF THE AMBITION OF OBJECTIVES, TARGETS AND CONTRIBUTIONS AND ADEQUACY OF SUPPORTING POLICIES AND MEASURES

Dimension decarbonisation

Greenhouse gas emissions and removals

The draft plan describes and quantifies Slovenia's 2030 binding national **emission reduction target under the ESR** (-15 % by 2030 compared to 2005). It reports mainly pre-existing targets and measures and also includes indicative targets for reducing GHG emissions in different ESR sectors by 2030 compared to 2005, such as for transport (reaching a +18 %), agriculture (reaching a +6 %), buildings (-70 %) ⁸, as well as for the smaller sectors non-ETS industry and product use (-32 %), waste management (-57 %) and non-ETS energy (-16 %). While the draft plan does not yet provide projections, greenhouse gas projections submitted to the Commission in 2017 ⁹ indicated that Slovenia might be able to achieve the -15 % target largely with a continuation of existing measures. The draft plan does not include considerations on the use of flexibilities nor which planned level of overachievement could be cost efficient in view of a use for transfers to other Member States.

The draft plan presents a comprehensive overview of policies and measures in different ESR sectors. However, it mainly lists existing policies and measures whose focus is reaching the 2020 targets. The draft plan acknowledges this gap, stating that information on additional policies and measures for meeting the 2030 targets will be included in the final version of the NECP. On **transport**, for which the indicative target implies an emission decrease between 2020 and 2030, the draft plan states that uncertain future emissions in the transport sector may pose a risk for achieving the ESR target ¹⁰, as well as the planning of future energy use. The draft plan considers a broad range of support measures to promote electromobility, including vehicle taxation and other fiscal incentives, road charges exemptions, access to funding (i.e. Eco Fund), and quantifies the charging infrastructure required for its roll-out. It also targets hydrogen and fuel cell vehicles, as well as alternative fuels (mostly gas) for heavy duty vehicles and shipping, as well as a stable share of renewable energy. Incentives are also planned for the renewal of the public transport vehicle fleet, with less polluting or alternative fuel vehicles. Measures in the **building** sector are assessed under the energy efficiency dimension. The draft plan refers to the Common Agricultural Policy as a tool for reducing greenhouse gas emissions from **agriculture**.

The draft plan is committed to achieving no net emissions by 2030 in line with the LULUCF Regulation ¹¹ and lists some existing LULUCF policies. However, it does not yet explain how the **LULUCF** sector will develop in terms of forest sink or agricultural land under different scenarios of land use development. With respect to the National Forestry Accounting Plan including the

⁸ -66 % is the indicative target set in the operational GHG reduction programme for residential, commercial and other institutional emissions, while the long term renovation strategy specifies a -70 % indicative emission reduction target for buildings.

⁹ COM(2018) 716 final, Figure 6.

¹⁰ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

¹¹ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

national Forest Reference Level, submitted by Slovenia as required by Article 8(3) of the LULUCF Regulation, the Commission has put forward substantial technical recommendations requesting action on a range of issues, detailed in SWD(2019)213.

The draft plan sets a long-term vision and **adaptation** goal (2050) of reducing exposure, sensitivity and vulnerability to climate change and provides an overview of policies and measures for adaptation. Adaptation is considered for agriculture/forestry, however, it is not yet considered for other sectors (e.g. for addressing climate risks in the energy sector).

Renewable energy

Slovenia proposes a 27 % **renewable share** in gross final consumption of energy for 2030 as opposed to the 25 % target for 2020. The overall contribution of 27 % is **significantly below** the result of the formula contained in Annex II of the Governance Regulation which estimates a 37 % renewable share in 2030 for Slovenia. The indicative trajectory to reach the 27 % contribution in 2030 is included, but the reference points in 2022 and 2027 are missing.

Although the draft plan indicates that geographical, environmental and national constraints hinder further renewable energy development and two separate scenarios for wind and solar were carried out in order to attain the renewable energy contribution, no information and detailed methodology was included.

In the **electricity** sector, the draft plan proposes a target of 47.4 % (up from 38.6 % in 2020) and mentions the key technologies that will play a role: mainly solar, hydropower and biomass. However, the draft plan does not include the figures of expected total gross final energy consumption per technology to complement the renewable electricity trajectory 2030.

The use of **renewable energy in heating and cooling** is planned to **go down** from the expected 34.5 % in 2020 to 30.5 % in 2030. While Slovenia expects that aerothermal, geothermal, hydrothermal energy in the form of heat pumps and to some extent biomass based systems will represent an important source of heat, not enough information was included to justify the decrease of renewable energy in the heating and cooling sector including the role of renewable energy in district heating systems. The draft NECP is therefore missing a clear description including measures of how Slovenia intends to increase renewable energy in heating and cooling by an indicative 1.3 percentage points as an annual average calculated for the periods of 2021 to 2025 and 2026 to 2030 respectively.

The draft plan includes a **sectoral share of renewable energy in transport** of 10.1 % in 2030 which is roughly the same as in 2020. In this regard, the draft plan **does not include a trajectory that shows an increase** in the transport share post 2020 as required by legislation. In this regard, the final plan would benefit from putting forward the calculation of the transport target as requested in Articles 25-27 of Directive 2018/2001¹² in shares and absolute values.

The **policies and measures** included in the draft plan are still under consideration by Slovenia and there is a lack of concrete information which questions the political, technical and legal feasibility of the measures to reach the contribution. The draft plan includes actions to promote renewable energy at local level. However, the measures do not sufficiently address accessibility of self-consumption to all final customers and financing for communities. Further information

¹² Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources.

should be provided on measures to achieve further simplification of administrative procedures and to facilitate the uptake of power purchase agreements.

Regarding the **transport sector**, the draft plan includes actions to introduce further electrification and biofuels production and use.

Dimension energy efficiency

The proposed **energy efficiency** contribution to the EU's target of 32.5 % by 2030 is expressed in primary energy consumption (PEC) level (7.1 Mtoe), which is almost the same as Slovenia's 2020 target level. Although the draft plan does not specify what type of scenario is used for the target, it is assumed that it is the "with additional measures" (WAM) scenario. The draft plan does not provide further details and significant information on the underlying baseline. In particular, no differentiation of contributing sectors, trajectory and justification of the ambition level was provided for the projected 2030 contribution. The proposed energy efficiency contribution seems to be of very low ambition compared to what is expected at EU level to collectively reach the Union's 2030 energy efficient targets. Besides, uncertainty in the end use of energy in transport might affect the achievement of the target.

In terms of long-term building renovation strategy, Slovenia is among the few countries that provided objectives for 2030: reducing final energy consumption (FEC) in buildings by 30 % by 2030 compared to 2005; energy renovation of nearly 26 million m² of buildings, or 1.3-1.7 million m² per year; of which one third in the 'nearly zero-energy buildings' standard. The existing building stock represents the sector with the greatest potential for achieving energy savings but the contribution of building renovation to the national contributions has not been estimated.

In terms of proposed policies and measures, the draft plan provides only an overview of the planned and applied measures for the purposes of achieving the 2020 target. These measures are elaborated in the Slovenian Energy Efficiency Action Plan 2017-2020 (AN URE 2020) that includes measures to promote energy efficiency in buildings, both public and private, in industry and heating and cooling. No policies and measures related to the 2030 target are described.

Slovenia also included some general information relating to financial policies and measures for buildings that could be implemented as part of its long-term renovation strategy. The 2017 adopted long-term strategy to promote investment and renovation in the building sector to reduce energy use is mentioned, but details are not spelled out. Given the significant contribution of a cost-effective transformation of existing buildings into nearly zero-energy buildings to the Union's energy efficiency target, the final plan would benefit from realistic and ambitious measures and policies for the implementation of a coherent long-term renovation strategy.

Similarly, Article 14 of the Energy Efficiency Directive¹³ is not sufficiently elaborated. General measures to promote efficient heating and cooling are mentioned as part of the adopted Energy Efficiency Action Plan 2017-2020 (NEEAP 2020) in December 2017. The draft includes the link to the report but specific figures were not included.

Concerning transport, the plan mentions measures that contribute towards more efficient organisation of the mobility system and thus towards improved energy efficiency and emissions

¹³ Directive 2012/27/EU on energy efficiency.

reductions (e.g. demand management, spatial planning, incentives for multimodality and modal shift, promotion of public transport and support for active modes, soft measures, etc.). The plan would benefit from covering also measures related to digitalisation and automation.

Overall, the draft plan describes directions towards which policies should be aimed rather than providing information on new measures to be launched. Details on expected impact and implementation period are also largely missing. Consequently, the provided information is insufficient for a sound assessment of the level of efforts after 2020.

Dimension energy security

Slovenia's draft plan is mainly of a qualitative nature and lacks specific quantitative projections, objectives and timeframes as well as targets for gas and oil. As regards electricity, there is little information on the quantification of generation and supply adequacy, which are crucial elements for the assessment of the security of supply dimension. With regard to Slovenia's aim to gradually phase out the use of fossil fuel for electricity generation (as an important part of the domestic generation capacity has to be replaced) the final plan would benefit from a provisional planning and concrete targets on how and when this phase out will take place and new generation capacities will be available.

Slovenia has shared a nuclear power reactor with Croatia since 1981. However, no specific mention is made in the draft plan on whether Slovenia intends to increase capacity in the future. The final plan would benefit from including specific elements on this topic, such as foreseen lifetime of operation and how the long-term supply of nuclear fuel and the levels of strategic reserves are ensured. Reflecting on cooperation with Croatia as regards these long-term challenges would also benefit the final plan.

The assessment of security of supply is limited by lack of necessary information. For example, missing is information on how electricity generation adequacy will be ensured with the renewable energy contribution, including on demand response and storage. Information on the lifetime of existing and new nuclear reactors, as well as information on the strategy for ensuring the long-term supply of nuclear fuel is expected. Implementation of the Risk Preparedness Regulation, including measures on cybersecurity, are needed as well as existing preventive action and emergency plans for gas, measures addressing import dependency and diversification, and reference to planning under the Oil Stocks Directive¹⁴.

Dimension internal energy market

The draft plan focuses mainly on new electricity and gas infrastructure projects of common interest, as described in the Ten-Year Network Development Plan (TYNDP). However, quantified objectives, precise targets and specific policies and measures are not specified given that Slovenia is well above the 2030 interconnectivity level of 15 % already today.

The draft plan contains only limited information on general market functioning. In the absence of the necessary quantitative core parameters, it is difficult to provide a proper assessment of the functioning of the market and to identify possible remaining obstacles.

¹⁴ Council Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products.

When it comes to such elements as the envisaged further development of wholesale and retail market competition and strategies to contain possible problems resulting from the market power of the dominant electricity supplier, Slovenia has not communicated any objectives. As competitive markets are a key enabler for other dimensions of the Energy Union, such objectives and corresponding measures need to be included.

The description of the current situation in retail markets is incomplete. A qualitative description, as well as concrete indicators upon which future objectives can be benchmarked, in the following areas were not included: Real-time price signals; Increase of system flexibility; Demand Response and Aggregation; Storage; Distributed generation. The final plan would benefit if these indicators were incorporated in the analysis.

Regarding **energy poverty**, the description of the current situation is incomplete and it is not clear if a dedicated assessment of energy poverty as required by the Governance Regulation has been carried out. Concrete national objectives are missing. Although the draft NECP provides various definitions for **energy poverty** and briefly describes some funds and past actions, the measures to alleviate energy poverty for the period 2021-2030 are limited. Finally, the draft plan does not sufficiently address **just transition** aspects, especially in relation to the coal regions that would be affected by Slovenia's plans to gradually phase out the use of fossil fuel for electricity generation.

Dimension research, innovation and competitiveness

In the Slovenia draft plan, research, innovation and competitiveness targets at national level are not yet tailored to energy and not sufficiently streamlined to the requirements of the Governance Regulation.

While the Slovenian Industrial Policy (SID) sets out the 2020 objectives in terms of competitiveness, no concrete and measurable objectives are included in the draft plan. The NECP would benefit from presenting a comprehensive analysis on where the low-carbon technologies sector, including for decarbonizing energy and carbon-intensive industrial sectors, is currently positioned in the global market, highlighting areas of competitive strengths and potential challenges. Measurable objectives for the future should be defined on that basis, together with policies and measures to achieve them, making appropriate links to enterprise and industrial policy.

The draft plan does not set a national target until 2030 with regard to the financing of public and, where available, private research and innovation related to the Energy Union, nor does it present sufficient financing measures for the period ahead. To conclude, the lack of crucial information prevents an assessment of whether the policies and measures are sufficient to reach the objectives and targets.

3. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

Overall, the draft plan does not yet allow for a detailed assessment on whether the planned measures are coherent with the national targets and objectives, as planned policies and measures are largely absent, and in some cases objectives and targets have not been set yet.

The draft plan does not yet consider **coherence of adaptation** in the decarbonisation dimension **with other dimensions** of the Energy Union such as energy supply. The draft plan does not

provide sufficient information on how Slovenia's renewable energy and bioenergy policy will impact its LULUCF sector and affect its potential as carbon sink.

Slovenia's plan has very limited information on interactions with biodiversity policies, trade-offs and synergies.

The draft NECP outlines some considerations, however not yet an impact assessment on air pollution and **air quality** impacts and mitigation measures. It lacks quantitative information and analysis about the interactions with air emissions policy.

The Slovenian plan makes several useful references to the relevance of "decoupling low-carbon circular economic growth from resource use", but does not mention the national roadmap for **circular economy** published in 2017. The final plan could be complemented to include actions and possible targets regarding the circular economy.

It is not yet apparent from the draft NECP in which way the targets and objectives are being translated to **infrastructure needs** in gas and electricity, or to heat networks, hydrogen or CO₂. The draft plan would benefit from describing how the integration of these sectors is to be taken into account by 2030 – and which actions are being undertaken in Research and Innovation to develop the knowledge base on system integration, with a view to ensure the necessary infrastructure is deployed by 2050.

It is not clear from the draft NECP whether the **energy efficiency first principle** has been considered and whether the ambition for renewable energy will be accompanied with the needed increased in system flexibility.

Slovenia indicates that investments in renewable energy are part of the long term renovation strategy, however it does not quantify them yet. The final NECP needs to provide an overall assessment of the **investment needs** to meet 2030 objectives and targets and expenditures, funding sources, market risks and barriers or other relevant information. Some investment needs could partly be covered by EU funds, such as cohesion policy funding, notably in line with the investment analysis for 2021-2027 of the 2019 European Country Semester Report for Slovenia and with other relevant legislation.

Links with the European Semester

- Identifying financing needs and securing the necessary funding will be key to deliver on energy and climate objectives. The Commission addressed this question as part of the 2019 European Semester process.
- Based on the 2019 Country Report for Slovenia, published on 27 February 2019¹⁵, the European Commission's recommendation for a Council recommendation for Slovenia issued on 5 June 2019¹⁶, in the context of the European Semester, highlights in particular the need to invest in low carbon and energy transition and sustainable transport infrastructure.
- When preparing its overview of investment needs and related sources of finance for the final plan, Slovenia should take into account these recommendations and links to the European Semester.

¹⁵ SWD(2019) 1023 final: Country Report Slovenia 2019

¹⁶ COM(2019) 524 final: Recommendation for a Council Recommendation on the 2019 National Reform Programme of Slovenia and delivering a Council opinion on the 2019 Stability Programme of Slovenia

The description of existing **energy subsidies** is generic. Based on internationally used definitions, the European Commission's Energy Prices and Costs report¹⁷ identifies energy subsidies in Slovenia, including for renewable energies and fossil fuels. It would be important that the final plan includes a description of existing energy subsidies, including for fossil fuels (section 4.6iv of the plan) as well as national policies, timelines and measures to phase out energy subsidies, in particular for fossil fuels (section 3.1.3iv of the plan).

4. REGIONAL COOPERATION

Slovenia has not carried out a fully-fledged consultation procedure for regional cooperation for the preparation of its draft NECP. Although Slovenia plans bilateral consultations with the neighbouring countries and, possibly, with certain other EU Member States in 2019, the information provided in the draft plan is not sufficient to identify the elements for which a regional approach and/or a closer coordination with neighbouring Member States can be effective in promoting the achievement of the objectives of the Energy Union in a cost-optimal manner.

Slovenia could further explore the cross-border potential of a coordinated energy and climate policy notably in the Adriatic with the aim of reducing the region's carbon footprint and implementing an ecosystem approach. In this regard, an assessment of the macro-regional aspects would further enrich the analysis and provide solid basis for regional cooperation in the future.

The existing frameworks of regional cooperation provide a good basis for conducting regional consultations related to the development and implementation of the final NECP in Slovenia. A good example of regional cooperation in the energy field is the Central and South Eastern Europe Energy Connectivity (CESEC). CESEC was established in 2015 to coordinate efforts for establishing the regional market and implementing cross-border projects in gas supply. In 2017 the scope of CESEC cooperation was extended to electricity markets, energy efficiency and renewable energy. There is significant potential to further cooperate in this forum, notably in the internal energy market and energy security areas including on the assessment of regional system adequacy foreseen in the Electricity Regulation¹⁸. This will become even more important in the light of increasing shares of renewable energy and corresponding need for system flexibility.

5. COMPLETENESS OF THE DRAFT PLAN

Information provided

The submitted draft NECP is only partly consistent with the template for national energy and climate plans¹⁹ as several sections are either incomplete or missing. National contributions and targets for 2030 are available as regards GHG emission reduction, renewable energy and to some extent for energy efficiency. There is a varying degree of detail on policies and measures underpinning the targets and objectives.

¹⁷ Commission Staff Working Document Accompanying the Document Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Energy prices and costs in Europe, COM(2019) 1.

¹⁸ Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity.

¹⁹ Annex I of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

The information provided on **decarbonisation** is incomplete. For all elements, the analytical basis of the draft plan does not provide indicative projections of development with existing policies beyond 2020 and does not assess the impacts of planned policies and measures. This prevents assessing any potential gap to the 2030 targets. On **greenhouse gas emissions**, information about existing and additional policies and measures to meet Slovenia's 2030 targets and obligations is missing. The information is missing on the estimated annual emission reduction trajectory for the period 2021-2030 under the Effort Sharing Regulation (ESR)²⁰ and for land use and forestry emissions, and removals does not apply the accounting rules set out in the LULUCF Regulation²¹.

Most of the elements required on **renewable energy** for the objectives and targets and the policies and measures are not provided and the draft plan often does not follow the Annex I template²². The draft plan sets out only partially the current share of renewable energy in gross final energy consumption.

Planned capacities are not provided and split between new and re-powering. The trajectories on biomass supply (by feedstock and by origin and distinguishing between domestic production and imports), trajectories for forest biomass, and an assessment of its source and impact on the LULUCF sink need to be further developed. Information was not included for the increase of 1 percentage point of renewable energy in district heating and cooling and related infrastructure. The policies and measures section included insufficient information regarding both existing and planned measures. Measures regarding power purchase agreements (PPAs) are not included.

On the **energy efficiency** dimension, the draft plan is not sufficiently detailed. While it elaborates the elements included in the Slovenia's National Energy Efficiency Action Plan (NEEAP) for the period 2017-2020, it lacks substantial details for the future. The different subsections in the current draft plan dedicated to energy efficiency are incomplete and/or not in line with the Annex I template.

The proposed energy efficiency target for 2030 is expressed only in terms of primary energy consumption and has not been translated into final energy consumption levels. There is little information on contributing sectors, trajectory and justification of the level of ambition of the 2030 target. The draft plan points out a number of policies and measures in force until 2020 to comply with pre-existing legislation, however it does not yet provide any policies and measures related to the 2030 target. Articles 5 and 7 of the Energy Efficiency Directive²³ have not been considered hence, the draft plan does not yet provide the amount of cumulative energy savings. Although objectives for 2030 are provided in relation to the Energy Performance of Buildings Directive²⁴, the elements required under objectives and targets of the long-term renovation

²⁰ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

²¹ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

²² Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

²³ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency as amended by Directive (EU) 2018/2002.

²⁴ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings as amended by Directive (EU) 2018/844.

strategy²⁵ are missing. Under 'current situation and projection with existing policies and measures' the information in relation to cost-optimal minimum requirements for new and existing buildings subject to major renovations for all types of buildings is not yet provided. On the positive side, information on nearly zero-energy buildings (NZEB) standards is reported and a set of policies, measures and elements in relation to electro-mobility was included.

On **energy security**, information is insufficiently detailed on future electricity generation adequacy, including on demand response and storage. Similarly, information on the planning and operation of nuclear energy power plants and on the long-term supply of nuclear fuel should be included in the final plan. Information on risk preparedness plans for both electricity and gas, as well as a description of measures on cybersecurity, import dependency, diversification, and references to oil stocks and emergency procedures need to be included the final plan.

On the **internal energy market**, there is only limited information on core quantitative parameters on the functioning of the national wholesale gas/electricity markets. As regards the retail gas/electricity markets, there is only a qualitative description quantitative figures would improve the quality. Objectives and strategies to further develop competition in the market are missing. In general, additional information on elements concerning market integration would provide a complete picture on how Slovenia intends to implement recent market design legislation, in particular on system flexibility and objectives to mitigate energy poverty. On infrastructure, although Slovenia has a very high level of interconnections the draft does not yet sufficiently specify calculation methods and indicators on peak load, installed capacity, RES installed capacity, and specific measures for increasing tradable capacity on interconnectors, which would provide a complete picture on the internal energy market.

The draft plan identifies very general domains for the **research, innovation and competitiveness** dimension. It does not yet provide specific objectives or funding targets beyond 2020 up to 2030. The draft plan also misses 2050 national objectives related to the promotion of clean energy technologies and specific objectives related to competitiveness.

Robustness of the Slovenian draft National Energy and Climate Plan

Elements of the **analytical basis** are partly addressed in the draft plan, which includes a sectoral review of the historical data related to the five dimensions of the Energy Union and presents the current policies, actions and programmes adopted and relevant to each sector. These elements still need to be translated into clear and consistent with existing measures (**WEM**) and with additional measures (**WAM**) projections reported along a common timeline and including Annex I part 2²⁶. The draft plan lists a number of existing and planned policies and measures which could be quantified as part of the needed **impact assessment**.

Models used in earlier analyses and envisaged to be used for the finalisation of the plan are described. Nevertheless, the quantitative information reported does not yet seem to be fully related to a comprehensive and consistent **modelling exercise** on a single specific scenario. The main exogenous factors that would form the input to the WEM and WAM projections, related to the energy system and GHG emission developments are reported.

²⁵ The indicative milestones, the roadmap with measurable progress indicators, an estimate of the expected energy savings and wider benefits and the contribution of the renovation of buildings to the Union's energy efficiency target.

²⁶ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

The impact assessment in the final plan should include an assessment of the macroeconomic impacts and, to the extent feasible, the health, environmental, employment and education, skills and social impacts, including just transition aspects.