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**COMMISSION STAFF WORKING DOCUMENT**

**Assessment of the draft National Energy and Climate Plan of Slovakia**

*Accompanying the document*

**Commission Recommendation**

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

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# 1. SUMMARY

## Main observations<sup>1</sup>

- ✓ The **draft integrated National Energy and Climate Plan (NECP) of Slovakia** builds on the Slovak Energy Policy (Energetická politika), which is a strategic document defining the energy sector's primary objectives and priorities to 2035 with an outlook to 2050. The priority of the Slovak Republic in the energy sector is to ensure synergy between sub-policies, cost efficiency, enforcement of the principles of sovereignty in the energy mix, preservation of competitiveness and energy security. In this context the development of renewable energy sources and measures to increase energy efficiency are considered as means to achieving emission targets.
- ✓ Slovakia's 2030 target for **greenhouse gas emissions in sectors not covered by the EU Emissions Trading System (non-ETS)** is -12 % compared to 2005 as set in the Effort Sharing Regulation (ESR)<sup>2</sup>. The target may be achieved with existing policies, provided that accounted CO<sub>2</sub> removals in the land use, land use change and forestry (LULUCF) sector will compensate for accounted emissions in this sector (no-debit commitment). However, the final plan would benefit from more detail on the implementation status and the expected impacts of the policies and measures and how the LULUCF commitment will be achieved, as well as considerations on whether additional policies e.g. in the buildings and transport sectors could be cost-efficient, having in mind that overachieving the non-ETS target could have an economic value if used for transfers to other Member States.
- ✓ The proposed contribution to the EU level target of **renewable energy** is a share of 18 % of energy from renewable sources in gross final consumption of energy in 2030. This contribution is significantly below the share of 24 % in 2030 that results from the formula contained in Annex II of the Governance Regulation, a situation which would also require in the final plan an indicative trajectory that reaches all reference points<sup>3</sup> in accordance with the national contribution set out in the final plan. It is well noted that additional detailed information on the policies and measures for renewable energy in a 2030 perspective will be provided in the final plan.
- ✓ **Energy efficiency** contributions are provided in both primary and final energy consumption. The proposed level of contributions represents a minor reduction for primary energy consumption and an increase for final energy consumption compared to the 2020 targets. Such contributions are of low ambition compared to the collective EU effort needed to achieve the EU 2030 targets. The final plan would benefit from aligning the energy efficiency contributions with the collective EU effort and supporting them with adequate policies and measures.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Pursuant to Article 4(a)(2) of Regulation 2018/1999.

- ✓ With high dependency on energy imports, **energy security** is one of the priority topics of the Slovak national energy strategies. This provides a good basis for further developing the energy security dimension in the final plan, with objectives and policies and measures clearly described. The final plan would also benefit from addressing measures envisaged in view of the foreseen role of nuclear generation capacity.
- ✓ Slovakia has significant electricity interconnection capacity compared to its electricity generation capacity. The planned increase of new nuclear capacity is accompanied by new connections, e.g. with Hungary, aimed at reducing congestion. The **interconnection** level is projected to be at 52 % in 2030. The draft plan includes a description of the current market integration situation, however, a clear timeline and concrete and quantifiable objectives for continuing the positive regional market integration would enhance the final plan. It is not clear if a dedicated assessment of energy poverty as required by the Governance Regulation has been carried out, and it is important that Slovakia includes a strategy dedicated to energy poverty in its final plan.
- ✓ Key areas and funding needs for research and development for 2019-2023 with an outlook to 2028 are identified. However, objectives **for research, innovation and competitiveness** are not yet included.
- ✓ Information is provided on the **investment needs** and expenditures associated with implementation of the draft plan related to energy efficiency, transport and research, and amounting to around 1 % of GDP. The investment analysis needs to be extended in the final plan to allow fully taking advantage of the role NECPs can play in providing clarity to investors and attracting additional investments in the clean energy transition. The draft plan indicates that Union funds will play a role in implementing the plan, an element which could be further elaborated in the final plan. An **impact assessment** of planned policies and measures also needs to be included in the final plan, which would also benefit from an analysis of how the modernisation fund could be used to foster efforts aimed at modernisation of Slovak industry and economy.
- ✓ Continued consultation of neighbouring Member States as well as further **regional cooperation**, in context of the Visegrad Group, CESEC and bilateral cooperation is expected in the preparation of the final plan.
- ✓ Some information on the interactions with **air quality and air emissions** policy is included in the draft plan. However, the final plan would benefit from strengthening this analysis and presenting impacts of policies and measures on air pollution. The projected increase in bioenergy use would make air impacts especially important to consider.
- ✓ The issue of a **just and fair transition** to a climate neutral economy could be better integrated throughout by considering social and employment impacts, e.g. shifts in sectors/industries (and skills impacts), distributional effects (and energy poverty) and revenue recycling. As regards skills and training, The National Action Plan for the transformation of the Upper Nitra coal region has the priority to “Developing and stabilising a skilled workforce”. The final plan could consider specific measures to provide training.
- ✓ 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.
- ✓ An example of a **good practice** is that the draft NECP highlights co-benefits between climate adaptation and energy efficiency and mentions that Slovakia has adaptation

guidelines for construction, transport, energy, industry and some other areas to improve the resilience to climate change in these sectors.




## Preparation and submission of the draft plan

Slovakia notified its draft National Energy and Climate Plan (NECP) to the European Commission on 21 January 2019. The Slovak draft NECP was prepared by the Ministry of Economy, the central authority for energy. An inter-ministerial working group was set up to organise the preparation of the draft NECP. The draft plan is based on the Slovak Energy Policy (*Energetická politika*) approved in 2014 by the Slovak Government, which sets priorities for the energy sector for 2035, with a view to 2050, and covers energy security, energy efficiency, competitiveness and sustainable energy. In addition to topics covered by the national energy strategy, the draft NECP also includes the decarbonisation dimension.

A full **public consultation** on the draft plan was not carried out. Concerning **regional cooperation**, the draft plan indicates a discussion with the Visegrad Group countries and Austria that took place in November 2018, however, there were no further regional consultations related to the draft plan.

## Overview of the key objectives, targets and contributions

The following table present an overview of Slovakia's objectives, targets and contributions under the Governance Regulation<sup>4</sup>:

	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) (%)	-14	+13	-12	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	11.5	14	18	Below 24 % (result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe) Final energy consumption (Mtoe)	16.1 11.1	16.4 9.2	16.2 10.8	Low Low

<sup>4</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.



Level of electricity interconnectivity  
(%)

43

59

52<sup>5</sup>

N/A

Sources: EU Commission, ENERGY STATISTICS, Energy datasheets: EU28 countries; SWD(2018)453; European Semester by country<sup>6</sup>; COM/2017/718; Slovak draft NECP.

## 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 emission projections presented in the draft plan were carried out in 2017. According to these projections, existing measures may be sufficient to fulfil the obligation under the **Effort Sharing Regulation**<sup>7</sup> of reducing 2030 emissions by 12 % compared to 2005. The Commission estimates that existing measures could lead to a surplus of 1.6 Mt over the period 2021-2030. The draft NECP does not yet indicate whether Slovakia intends to use any of the flexibilities available, such as a cost-effective domestic overachievement by 2030 of the non-ETS target funded by transfer revenues.

This assessment does not take into account possible credits or debits in the **LULUCF** sector as no information is yet provided on how Slovakia will meet the no-debit commitment. With respect to the National Forestry Accounting Plan including the national Forest Reference Level, submitted by Slovakia as required by Article 8(3) of the LULUCF Regulation<sup>8</sup>, the Commission has put forward technical recommendations requesting action on a number of issues, detailed in SWD(2019)213.

**Policies and measures** are listed, but in some cases, it is not yet made clear which of the measures are adopted or in the planning stage; e.g. most of the policies included in the GHG projection with additional measures seem to already be in force. While a scenario with additional measures is provided, the impact of individual or groups of policies and measures is not yet quantified.

Greenhouse gas emissions in the **transport** sector are increasing. The increase of emissions from transport is however more limited in the scenario with additional measures. Measures to support alternative fuels (e.g. electrification of transport) are only briefly addressed. Slovakia recognizes the need for further measures. Slovakia has a Strategic Transport Development Plan

<sup>5</sup> Projection included in Slovakia's draft NECP.

<sup>6</sup> [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](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).

<sup>7</sup> 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.

<sup>8</sup> 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.

2030 focussing on public transport, rail and modernisation of transport infrastructure. It is preparing an Action Plan on Electromobility<sup>9</sup>. A description of a coherent policy towards clean vehicles and vessels for all alternative fuels and the corresponding alternative fuel infrastructure would be welcome in the final plan.

The draft plan refers to the national adaptation strategy, with the main objective to improve Slovakia's preparedness to face the adverse impact of climate change. Sectoral objectives are not yet specified.

## Renewable energy

Slovakia proposes a contribution of 18 % **renewable share** in gross final consumption of energy for 2030 with an indicative trajectory reaching the reference points of 18 % by 2022, 43 % by 2025 and 65 % by 2027. The overall contribution of 18 % is significantly below the share of 24 % in 2030 that results from the formula in Annex II of the Governance Regulation and the 2022 reference point narrowly fails to meet the required minimum renewable energy shares.

In 2030, biomass and hydropower continue to be the main sources of **renewable electricity** (25 % in 2030), followed by solar and wind power.

Biomass is still expected to account for 75 % of the total **renewable energy in the heating and cooling sector** (17.6 % in 2030) a moderate increase in geothermal, solar thermal and biogas is expected. The draft plan foresees continuation of current measures and a new mandatory renewable obligation for district heating. However, the draft NECP is missing a clear description including measures of how Slovakia intends to increase renewable energy in heating and cooling and in district heating and cooling in line with the requirements of the Renewable Energy Directive<sup>10</sup>.

For the sectoral share of **renewable energy in transport** of 14 % the draft plan provides the contribution from each expected energy technology, with biofuels as main contributor, but the final plan could be more detailed on the calculation of the transport target in line with the requirements of the Renewable Energy Directive<sup>11</sup>.

The **policies and measures** included in the plan are under consideration and there is a lack of concrete information on heating and cooling, transport, power purchase agreement, self-consumers and renewable energy communities, including simplification of administrative burden and biomass which questions the credibility of the measures in place to reach the overall renewable energy contribution.

## Dimension energy efficiency

The draft plan includes energy efficiency contributions in both primary (16.16 Mtoe) and final energy consumption (10.78 Mtoe). The proposed level of contributions represents a minor reduction for primary energy consumption and an increase for final energy consumption compared to the 2020 targets. Both targets give some space for an increase in consumption compared to 2017 data.

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<sup>9</sup> Government proposal adopted 13 March 2019.

<sup>10</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

<sup>11</sup> Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources.

The projected energy consumption levels were set taking into account the figures of the PRIMES scenarios<sup>12</sup> and are a result of the scenario developed by the World Bank model. However, the underlying methodology and assumptions are only partially described and it is not clear how the PRIMES scenarios were combined or what measures are covered by the World Bank scenario used for setting the level of contribution. The main factors affecting the level of primary energy consumption are new nuclear power plant units: Mochovce 3 and 4. In the projections used the phasing out of coal-fired power plants is also envisaged. However, the impacts of these factors on energy consumption are yet to be assessed (together with an impact of GDP change), so it is not clear, if the Slovak contribution is to be substantially revised in the final plan when a with additional measures scenario is to be submitted. Overall, the contribution of Slovakia seems to be of low ambition considering the need to increase efforts at the EU level to collectively reach the Union's 2030 energy efficient targets.

Slovakia has implemented Article 7 of the Energy Efficiency Directive<sup>13</sup> exclusively through alternative policy measures. In terms of impacts of the presented policies and measures, only overall level of savings per sector has been presented without explaining the calculation methodology. The new measures mostly build on the existing measures (e.g. continuation of operational programmes in the next period, voluntary agreements in industry). Some measures develop/enlarge the scope of an existing measure - this is the case for instance with the Guaranteed Energy Service, where energy service is provided by qualified providers for guaranteed energy savings.

The plan also mentions measures contributing towards more efficient organisation of the mobility system and thus towards improved energy efficiency and emissions reductions (e.g. incentives for multimodality and modal shift, promotion of public transport and support for active modes, soft measures, behavioural change, etc.). The plan would benefit from covering also measures related to digitalisation and automation. More detailed information on the planed measures would be welcome.

All in all, due to the lack of quantification of the policies and measures there is uncertainty on how they are to be continued or expanded after 2020 and whether the proposed policies would suffice to achieve the stated objectives.

The draft plan covers well the **buildings** sector and indicates a comprehensive set of actions addressing building stock. Also the overall investment needs to meet the objectives for new building requirements have been estimated. However, the information provided for the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy efficient and decarbonised building stock by 2050 is limited and needs to be substantiated with specific milestones, measurable progress indicators, estimation of expected energy savings and wider benefits.

### **Dimension energy security**

The draft plan describes responsible authorities, relevant legislation, and measures to ensure energy security for oil, gas and electricity. However, as energy security is considered as one of the priority topics of Slovak national energy strategies this should give good basis for further

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<sup>12</sup> EUCO27 and EUCO33.

<sup>13</sup> 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.



developing the energy security dimension in the final plan with objectives and policies and measures clearly described.

Slovakia's commitment toward nuclear energy is strong as it is stated that it "will play a very important role in the transition". In the draft plan nuclear energy is mentioned as the main carbon-free source of electricity. Up to 2.4 GW of installed capacity can be built. The NECP would benefit from further information specifically on policies and measures to ensure the long-term supply of nuclear materials and fuel, notably in view of the development of the nuclear generation capacity.

The draft plan also contains a description of Projects of Common Interest for electricity (aiming at increasing cross-border transport capacity) and for gas (aiming to contribute to further diversification of gas sources and routes). With regard to the mentioned plan to build a new pumped storage power plant further information on storage and production capacity, timing and elements of the plan should be included.

For the oil sector, the draft plan addresses relevant issues (oil stocks, origin of supply, stockholding obligations, reporting and the emergency procedures).

### **Dimension internal energy market**

The interconnection level for Slovakia is projected to be at 52 % in 2030, well above the 15 % level for interconnections, and all but the EUR 2 price difference urgency indicators are met, therefore the draft NECP does not set a specific national level.

As regards national objectives and targets for market integration, the draft plan describes the current situation, but timeframes for reaching the objectives, such as continuing the successful regional electricity market coupling project of Slovakia, Czech Republic, Hungary and Romania (4MMC) and extending it to the Central West Europe (CWE) markets, should be included in the final plan.

As competitive markets are a key enabler for other dimensions of the Energy Union, objectives related to the further development of wholesale and retail market competition and corresponding measures and timelines merit being included in the final plan. While the draft report includes a brief description of electricity price developments, including the target of the Slovak Republic to apply discounted tariffs for energy-intensive undertakings, further details are necessary on market-based price formation and the promotion of competitively determined electricity prices.

Additional information on developments like, the expected elimination of the current exemption to the unbundling obligation for gas storage system operators after the end of 2024 or the aim to abolish the promotion of electricity from coal and lignite, would enrich the final plan.

The areas of **retail markets and system flexibility** are not addressed in a structured way regarding demand response, storage, self-generation and aggregation. A thorough final plan would provide a quantitative overview of the development of the different sources of flexibility that is needed to integrate the rising share of renewable energy into the electricity system. Additional information on, where Slovakia sees potential to increase system flexibility at least in a qualitative manner (objectives), and a detailed description of the policy measures and instruments to realise this flexibility and ensure the non-discriminatory participation of new market participants and the different flexibility sources in all energy markets, would enhance the final plan.

Concerning smart-meters, the draft plan states that smart grids and smart-meters are one of the key orientations that should contribute to delivering on the Europe 2020 strategy. However, the description of the national objectives should be further developed with clear timelines and numerical objectives for the concrete measures.

In 2017, 17.3 % of households considered as “at risk of poverty” and 4.3 % of the general population were unable to heat their homes, thus there is a considerable gap between general population and those at risk of poverty highlighting weaknesses in social protection, housing support benefit and insufficient social housing. It is not clear if a dedicated assessment of **energy poverty** as required by the Governance Regulation has been carried out, and no objectives have been defined. The draft plan refers to the national legislation which provides a definition of vulnerable and protected consumers in electricity and gas. It also mentions, in general terms, some existing measures to tackle energy poverty, in particular: a system of support for the thermal renovation of housing and family houses, the implementation of a single new tariff structure, housing allowances, national employment programmes. Given this background, it is important that Slovakia includes a strategy dedicated to energy poverty in its final plan.

### **Dimension research, innovation and competitiveness**

Slovakia identifies key areas for research and development for 2019-2023 with an outlook to 2028: improving the transmission capabilities and security of the electricity grid, smart grids and renewable energy sources and nuclear energy. However, funding is presented only for the state programme on energy security, and concrete measurable objectives are not yet clearly stated.

The state research programme is described sufficiently, covering time periods up to 2028. The state R&D programme foresees a budget of EUR 84 million for 2019-2023 and EUR 88 million for 2024-2028. It covers a broad area of energy innovation topics, from enhancing the security of energy supply, to tackling energy poverty or the reliability of nuclear power stations.

As regards competitiveness, the draft NECP sets the objective to reduce the costs of high energy-intensive businesses in relation to electricity payments that are used to finance the production of electricity from renewable sources. 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.

No measures to implement **Strategic Energy Technology (SET) Plan** priorities and targets are yet in place. The draft plan describes a public information campaign on energy in general, clean energy and energy efficiency, but additional information would enhance the final plan.

## **3. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS**

Overall, the draft plan does not yet allow for a detailed assessment on the coherence and interlinkages. Some examples of interlinkages are highlighted. For example, the connections that energy poverty has with internal energy market and energy efficiency dimensions are noted in the Concept of Protecting Consumers Meeting the Conditions of Energy Poverty that was

prepared by the Regulatory Office for Network Industries. It clearly states that it is a multi-stakeholder issue, which needs to be solved by cooperation of different government and regional actors. Similar approach could also be useful when preparing the other **just and fair transition** issues for the final plan. Also, when finalising the plan, the application of the **energy efficiency first** principle is an important element to keep in mind.

The draft plan highlights co-benefits between adaptation and energy efficiency (adaptation guidelines for construction, transport, energy, industry and some other areas increasing the resilience of these sectors). However, climate change impacts are not yet mentioned as risks for energy security, although the country's National Adaptation Plan include such measures for the energy sector.

The draft plan mentions that implementation of **air quality** legislation has contributed to reducing greenhouse gas emissions, however, it does not yet provide details and falls short on presenting quantitative information and analysis about the interactions with air quality and air emissions policies. The impacts of planned policies on air quality are not yet described.

The draft plan mentions the **circular economy** a few times. Concrete measures that are described refer to waste management, to implement EU legislation. Considering the relevance for greenhouse gas emission reductions, the final plan could better reflect interactions with circular economy.

While the use of biomass for energy is planned to increase, the draft plan has little detail on the origin and sustainability of the biomass and does not yet include information on the potential impact on the carbon sink in the LULUCF sector, nor on **biodiversity**.

The issue of a **just and fair transition** to a climate neutral economy could be better integrated throughout by considering social and employment impacts related to a green/circular economy e.g. shifts in sectors/industries (and skills impacts), distributional effects (and energy poverty) and revenue recycling. As regards **skills and training**, The National Action Plan for the transformation of the Upper Nitra coal region has the priority to “Developing and stabilising a skilled workforce”. The NECP does not yet include specific measures to provide training.

The presentation of **investment needs** would need to be included in the final plan, extending on the preliminary investment respectively funding estimates now presented for energy efficiency and transport in the draft plan. These amount cumulatively to around EUR 8.6 billion for the period 2021-30 (per year around 1 % of GDP), of which 3.86 billion for transport, 2.47 billion for industry and 2.31 billion for buildings and appliances. The investment analysis needs to be extended in the final plan to allow fully taking advantage of the role NECPs can play in providing clarity to investors and attracting additional investments in the clean energy transition. Achieving energy and climate objectives seems to imply investments from both public and private sources, which would need to be specified in the final plan. The draft NECP hints to the continued use of EU structural and investment funds but does not yet reflect the use of Slovakia's share of the Modernisation Fund (19 million allowances corresponding to EUR 380 million at a carbon price of EUR 20)<sup>14</sup> to support investments in energy systems and sectors, from 2021 to 2030. Some investment needs could partly be covered by EU funds, such

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<sup>14</sup> The figure is based on the amounts established in Directive (EU) 2018/410 and is subject to various uncertainties, such as the possibility to transfer allowances available pursuant to Article 10c to the Modernisation Fund.

as cohesion policy funding, notably in line with the investment analysis for 2021-2027 of the 2019 European Country Semester Report for Slovakia 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 Slovakia, published on 27 February 2019<sup>15</sup>, the European Commission's recommendation for a Council recommendation for Slovakia issued on 5 June 2019<sup>16</sup>, in the context of the European Semester, highlights in particular the need to invest in '*transport notably on its sustainability*' and in '*energy efficiency*'. When preparing its overview of investment needs and related sources of finance for the final plan, Slovakia should take into account these recommendations and links to the European Semester.

The description of existing **energy subsidies**, particularly fossil fuels (section 4.6.iv) is an important element to be included in the final plan. Based on internationally used definitions, energy subsidies, including subsidies for fossil fuels, nuclear and renewable energy were identified in Slovakia in the Commission Report on Energy Prices and Costs in Europe<sup>17</sup>. The national policies, timelines and measures planned to phase out energy subsidies, in particular fossil fuel subsidies (section 3.1.3.iv) should also be mentioned in the final plan.

## **4. REGIONAL COOPERATION**

Slovakia has had a good experience of regional cooperation with its neighbouring countries on concrete energy projects e.g. the smart grid project ACON (Again Connected Networks) with the aim to strengthen the electricity distribution systems in the Czech Republic and Slovakia. However, in the preparation of the draft NECP Slovakia has only engaged in discussions with neighbouring countries in the Visegrad Group format plus Austria in meeting held in Bratislava in November 2018 on the draft NECP process.

Further regional cooperation is expected within the Central and South-Eastern Europe Gas Connectivity (CESEC) High-Level Group. The aim of the group is to coordinate efforts to facilitate cross-border and trans-European projects that diversify gas supplies to the region, as well as to implement harmonised rules. The scope of CESEC was broadened in 2017 to also cover renewable energy and energy efficiency. In early 2019 High-Level Group already discussed the draft NECPs in a meeting, and this forum could facilitate further regional cooperation, e.g. when assessing system adequacy as foreseen in the Electricity Regulation<sup>18</sup>.

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<sup>15</sup> SWD(2019) 1024 final.

<sup>16</sup> COM(2019) 525 final.

<sup>17</sup> 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.

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

## 5. COMPLETENESS OF THE DRAFT PLAN

### Information provided

The submitted draft NECP is consistent with the template for national energy and climate plans<sup>19</sup>. National contributions and targets for 2030 are available for GHG emission reduction, renewable energy and energy efficiency. Policies and measures and projections with existing measures have been reported using the voluntary templates. However, there are important elements missing from the draft plan like the impact assessment of the policies and measures and the overview of investment needs that are foreseen for the final plan.

Concerning the **decarbonisation dimension**, for **greenhouse gases** the absence in the draft plan of an estimation of the annual binding national limits in 2021-2030 under the Effort Sharing Regulation<sup>20</sup> and the commitment pursuant to the LULUCF Regulation<sup>21</sup> makes it difficult to assess how Slovakia expects to reach its non-ETS target in 2030. For the LULUCF projections it does not yet apply the accounting rules as set out in the LULUCF Regulation. To facilitate the assessment some clarifications are needed on the policies and measures and how they are consistently categorised as implemented, already in force or planned between the with existing measures (WEM) and with additional measures (WAM) scenarios.

The elements regarding **renewable energy** are partially provided. There is no inclusion of trajectories of bioenergy demand, their disaggregation between heat, electricity and transport, and on biomass supply (by feedstocks and by origin), trajectories for forest biomass, and an assessment of its source and impact on the LULUCF sink, which is however especially important given the prominent role of bioenergy in the draft NECP. Information was not included for the increase of 1 percentage points of renewable energy share in district heating and cooling. Planned capacities are described but are not split between new capacities and repowering.

As regards **energy efficiency**, the draft plan includes a long list of policies and measures that would benefit from additional details on the status of implementation and on the expected amount of savings to be delivered under Article 7 of the Energy Efficiency Directive<sup>22</sup>. Also some clarifications are needed e.g. on the trajectory towards the target 2030 and expected savings under Article 5 of the Energy Efficiency Directive<sup>23</sup>. These additional details and clarifications in the draft NECP would help to identify key measures and facilitate the assessment of the level of ambition of the draft plan. Besides, no information was provided on key elements of the long-term renovation strategy, e.g. indicative milestones, domestically established measurable progress indicators, an evidence-based estimate of the expected energy

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

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

<sup>21</sup> Regulation (EU) 2018/841 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework.

<sup>22</sup> 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.

<sup>23</sup> 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.

savings and wider benefits as well as and the contribution of the renovation of buildings to the Union's 2030 energy efficiency target.

On **energy security**, information in the draft plan is insufficiently detailed as regards future electricity generation adequacy, including on demand response and storage. Similarly, information on life-time of nuclear reactors, supply of nuclear fuel and potential deposits would add to the completeness of the final plan. Information on existing 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 are missing but are important elements of the final plan.

As regards **internal market**, the draft plan contains only limited information on core quantitative parameters on the functioning of the national retail and wholesale gas/electricity markets and possible market-related problems. Additional information on the aspects listed under market integration is required, in particular on objectives and strategies to further develop competition in the market, system flexibility and energy poverty. Additional substance on policies and measures are needed, especially for gas.

The draft plan is missing objectives for **research, innovation and competitiveness** to be achieved by 2030. Information on concrete policies and measures with a view to achieving 2030 objectives and targets is not yet included, and neither is a description of cooperation with other Member States in this area.

Very limited information is provided on investment needs. Estimates of the investment needs, sector or market risk factors and additional public finance support to fill identified gaps need to be included in the final plan.

### **Robustness of the Slovak draft National Energy and Climate Plan**

Most of the required elements of the analytical basis are addressed in the draft plan. Its with existing measures (WEM) scenario covers the decarbonisation, energy efficiency, energy security and internal market dimensions of the Energy Union. The draft plan also includes a with additional measures (WAM) scenario addressing the decarbonisation dimension. The draft plan uses a mix of data sources, including Eurostat, national statistical office and national ministries.

Assumptions and results related to both the energy system and GHG emissions have been reported for the **with existing measures scenario** using the respective voluntary templates. A similar approach for the **with additional measures scenario** in preparation for the final plan would ensure comparability. Most of the key assumptions, parameters and results are presented in detail. Additional information would be desirable on the following variables: (i) the differentiation of sectoral GHG emissions per IPCC gas, (ii) the differentiation of sectoral GHG emissions between those covered by the EU ETS and those falling under the Effort Sharing Regulation, and (iii) non-GHG air pollutants.

The model based projections are presented in a largely **transparent** way. The tools used for the projections are mentioned in the document. While the draft plan includes all key parameters and data sources, information on the number of households could be added as well as a more thorough description on the overall modelling approach.

The base year of the projections is compatible with the reported EUROSTAT values (with GDP expressed in 2010 prices). Deviations can be observed for renewable energy shares. The draft plan uses its own assumptions on fuel and ETS prices.

An **impact assessment** of planned policies and measures is announced for the final plan. It 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.