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COMMISSION STAFF WORKING DOCUMENT

**Assessment of the final updated national energy and climate plans of Estonia and
Slovakia**

Introduction

This staff working document provides a detailed assessment of how the final updated national energy and climate plans (NECPs) addressed the Commission recommendations on the draft updated plans.

This document includes only the assessment of the Slovak and Estonian plans. Belgium and Poland had not submitted their final plan when the document was finalised. The assessment of these final plans will be published in a separate document.




The assessment of the remaining 23 NECPs is included in the Commission staff working document accompanying the Communication ‘EU-wide assessment of the final updated national energy and climate plans delivering the Union’s 2030 energy and climate objectives’¹. While this staff working document includes specific guidance for implementation of the plans submitted by Estonia and Slovakia, the general guidance included in the above-mentioned Communication also applies to these plans.

SWD(2025) 140 final, accompanying Communication COM(2025) 274 final.

Estonia


1 Overview of key objectives, targets and contributions in the final NECP

Table 1: Summary of key objectives, targets and contributions of Estonia's final updated NECP

		2020	Progress based on latest available data	2030 national targets and contributions	Assessment of 2030 ambition level
	Binding target for greenhouse gas (GHG) emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)		2023: -9.7% ²	-24%	NECP: -18.1%
	Binding target for additional net GHG removals under the Regulation on Land Use, Land Use Change and Forestry (LULUCF)		2023: Reported net emissions of 1.9 Mt CO ₂ eq. (comprehensive review)	-0.434 Mt CO ₂ eq. (additional removal target)	Insufficient ambition based on projections: A gap of 0.5 Mt CO ₂ eq in 2030
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	30% (SHARES) 17% (target)	2023: 40.9%	65%	Estonia's contribution of 65% is significantly above the 50% required according to the formula set out in Annex II of the Governance Regulation ³
	National contribution for energy efficiency:				
	Primary energy consumption	5.5 Mtoe	2023: 4.1 Mtoe	5.49 Mtoe	EE primary energy consumption contribution is 5.49 Mtoe. EED recast Annex I formula results: 3.9 Mtoe
	Final energy consumption	2.8 Mtoe	2023: 2.61	2.87 Mtoe	EE final energy consumption

² The ESR emissions in 2023 are based on the results of the comprehensive review that took place in 2025. The percentage reduction is compared with the 2005 emissions as set out in Annex I of Commission Implementing Decision (EU) 2020/2126. However, the final ESR emissions for 2021- 2025 will only be established in 2027 after a comprehensive review.

³ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action OJ L 328, 21.12.2018, p. 1–77 ('Governance Regulation').

					contribution is 2.87 Mtoe. Corrected notified contribution: 2.53 Mtoe.
	Level of electricity interconnectivity (%) ⁴	67.6%	2024: 62.82%	15%	EE has surpassed the EU-wide interconnectivity target

Source: Eurostat; Estonia's final updated national energy and climate plan

2 CONSIDERATION OF COMMISSION RECOMMENDATIONS ON DRAFT NECP UPDATE

In December 2023, the Commission published a thorough assessment of Estonia's draft updated NECP and provided recommendations⁵ to be taken into account in the final updated NECP. Estonia submitted its final updated NECP on 13 June 2025, more than 10 months after the deadline of 30 June 2024⁶.

2.1 DECARBONISATION

The final NECP explains there is no 'with additional measures' (WAM) scenario in the final NECP as discussions are ongoing on a draft for the Climate-proof Economy Act, which will propose additional measures. Based on the 'with existing measures' (WEM) projections, Estonia expects to reduce total GHG emissions (including LULUCF and excluding international aviation) by 67% in 2030 and by 73% in 2040 compared to 1990⁷.

2.1.1 Effort Sharing Regulation

Estonia has partially addressed recommendation 1. However, the plan does not provide sufficient information on how Estonia will meet its ESR target of -24% by 2030 compared to 2005.

The WEM scenario shows a decrease of 18.1% in 2030 compared to 2005, a gap of 5.9 percentage points compared to the national ESR target. This is an improvement compared to Estonia's draft updated NECP. In 2023, GHG emissions from the effort sharing sectors accounted for about 51.5% of the total in Estonia (expected to be 54% in 2030)⁸, with transport accounting for the largest share.

⁴ Calculated by the European Commission based on the ETNSO-E data (Winter Outlook 2024). The 2030 level represents the general interconnectivity target of 15%.

⁵ C(2023) 9602 final.

⁶ Article 14(2) of Governance Regulation.

⁷ The GHG emission projections in the final NECP are different to the preliminary information shared by Estonia before it submitted a final plan, which was used to estimate the EU's aggregated 2030 projections for total GHG emissions, ESR and LULUCF in the Communication COM/2025/274 final.

⁸ Total GHG excluding LULUCF. Source: Commission calculations based on the results of the 2025 comprehensive review for 2023 and on the Estonian final updated NECP for 2030.

The NECP explains that the Climate-proof Economy Act is currently under development and that it aims to set cross-sectoral and sector-specific targets towards climate neutrality by 2050. For transport the focus is on reducing emissions in cities, while for agriculture the focus is on reducing emissions through precision farming, reducing the use of mineral fertilisers and developing biogas production.

The plan partially complemented the information on policies and measures provided in the draft but the descriptions of their scope, timeline and GHG reduction impact is partial and only underpins the WEM scenario.

For what concerns **transport**, projections (covering all transport sectors) show a stagnation of emissions from 2005 to 2030 (Table 3.1 of the NECP). In 2023, transport accounted for 47.2% of the country's effort sharing emissions and emissions had increased by almost 18% compared to 2005. Measures to reduce transport emissions include increasing the share of biofuels, promoting biomethane and electric buses, support for buying electric cars, expanding alternative- fuels infrastructure, improving sustainable public and rail transport, and a vehicle registration and annual tax measure.

The plan refers to the introduction of the emission trading system for fuel combustion in buildings, road transport and additional sectors (ETS2). However, Estonia has not transposed the measure into national law, thus potentially delaying the Social Climate Plan. Moreover, the WEM scenario projections do not appear to account for the effect of ETS2. The scenario projections do not clearly consider the impact of ETS2 in achieving the ESR target.

On **agriculture**, the plan does not provide sufficient detail on funding and impacts of measures. Moreover, the projections show agriculture emissions increasing by 30% from 2005 to 2030. In 2023, agriculture accounted for 27.4% of Estonia's effort sharing emissions.

The plan describes an effective strategy for **waste management** and its impact on methane emissions, projecting a decline through reduced landfilling. It also details the historical reduction of **methane** emissions within the energy sector and outlines measures needed to sustain this trend. In addition, the plan addresses **fluorinated gas** management, with projections indicating a continued decrease.

2.1.2 LULUCF

Estonia has not addressed recommendation 3. The LULUCF sector in Estonia currently generates net emissions and the performance of the sector has further deteriorated between 2022 and 2023. According to the LULUCF Regulation, Estonia has to improve its net removals by -0.434 Mt CO₂eq in 2030 compared to its average in the 2016-2018 reference period. However, according to 2023 figures⁹, Estonia's performance has worsened by 4.242 Mt CO₂eq in comparison to the reference period. No WAM scenario is provided. The WEM scenario in the final updated plan has the same levels as those reported in March 2023. Taking into account WEM projections for 2030, Estonia will still have a gap of 0.5 Mt CO₂eq in 2030. The plan indicates that a number of processes, laws, and policies relevant to the sector are currently being revised. This could help to close the gap with the 2030 target. Furthermore, the plan

⁹ As the Estonia's final updated NECP refers to the most recently submitted 2023 GHG inventory figures, these were also used as the reference point for the Commission's assessment.

outlines major infrastructure projects, some of which are linked to national defence, which have prompted higher harvesting levels, in turn affecting carbon removals.

The plan provides only limited information on how public funding (common agricultural policy, State aid) and private financing through carbon farming schemes are used to reach the LULUCF target. The plan includes some information on efforts to ensure higher - tier levels and geographically explicit datasets needed to ensure the robustness of net removal estimates, such as a joint project with Latvia and Lithuania aiming to improve LULUCF data in the greenhouse gas inventories. Based on the available information, Estonia currently does not have sufficiently effective policies in place to support the achievement of the LULUCF target.

2.1.3 Carbon capture and Storage

Estonia has partially addressed recommendation 2. The plan does not provide a strategy for carbon capture, use and storage (CCUS), and mentions that there are no geological CO₂ storage options in Estonia. The plan does not identify the amounts of CO₂ that could be captured but mentions to electricity production and the oil shale industry as sectors where this might be possible. The plan considers that any CO₂ captured would have to be transported to the North Sea.

2.1.4 Adaptation

Estonia has partially addressed recommendation 4. The plan refers to the 2017 'Development Plan for Adaptation to Climate Change until 2030' (KOHAK) in response to the recommendation and elaborates on its contents with regards to risk analysis and actions, acknowledging the importance of integrating adaptation planning. It also refers to the preparations for the Climate-proof Economy Act, which would also update their adaptation policy.

The plan partially embeds adaptation policies and measures in the relevant Energy Union dimensions. It contains an overall **analysis of climate vulnerabilities and risks**. The final NECP cross-references the 2017 KOHAK, which highlights several risks related to changes in precipitation, ice and snow cover, heat and drought, flooding, sea level rise, storms, health, and energy demand patterns. The plan outlines policies and measures to address these vulnerabilities and risks in KOHAK and in sectoral policies. However, it is short of quantifiable assessment of impacts.

The plan partially outlines the **links to specific Energy Union objectives and policies**, which adaptation policies and measures are meant to support. However, the impacts and benefits of adaptation policies for other Energy Union objectives have generally not been quantified. The plan does not set out **additional adaptation policies and measures** to support the achievement of national objectives, targets and contributions under the Energy Union.

2.1.5 Fossil fuels

Estonia partially addressed recommendation 18. The plan indicates Estonia's objective to achieve climate neutrality by 2050 without detailing commitments to phase-down fossil fuels for energy use.

The plan lists and quantifies existing fossil fuel subsidies, noting that the main one is the reduced rate of excise duty on dedicated diesel, which according to Estonia accounted s for

92% of fossil fuel subsidies in 2023. The plan indicates that no phase-out is planned at this stage for the most significant fossil fuel subsidies.

2.2 RENEWABLES

Estonia has partially addressed recommendation 5. Estonia includes estimated trajectories for deployment of renewable energy technologies up to 2030, but the outlook up to 2040 is missing. The updated plan contains a target that **innovative renewable energy technologies** should account for 5% of gross final consumption to contribute to the indicative target in line with Directive (EU) 2018/2001¹⁰ (revised ‘RED II’). The plan also includes specific targets to contribute to the indicative sub-targets in **buildings** and **industry** for 2030 and provides an indicative target for district heating for the period 2021-2030.

Estonia does not include a target for renewable fuels of non-biological origin (RFNBOs) in industry by 2030 by stating that as its industry sectors do not consume hydrogen. The plan does not clarify whether Estonia’s target in transport is based on a minimum share of renewable energy or a reduction of the emission intensity of transport energy consumption. Instead, it provides different hypotheses on the transport target, without specifying which is the chosen target. Estonia does not indicate a specific RFNBO or a green hydrogen target for transport.

Estonia has partially addressed recommendation 6. Estonia has developed additional policies and measures to enable cost-effective delivery of its national contribution to the EU’s binding renewable energy target, including the target for renewables electricity generation (100% by 2030) with specific support measures for wind power through auctions. The plan further outlines measures aimed at effective production of renewable heat, and on increased uptake of alternative fuels in transport. While the plan includes information on the existing legal framework for energy communities and self-consumption, it does not provide additional measures to enhance the enabling framework to promote such solutions.

The plan gives an **overview on guarantees of origin** and includes efforts to enable the issuing of guarantees of origin for RFNBOs, heat and fossil energy. The plan refers to measures to promote deployment of heat pumps and says that Estonia will prolong the measure to upgrade district heating boilers and inefficient heat pipelines. However, no further information is given on how Estonia aims to develop an enabling framework for increasing integration between electricity, heating and cooling networks. Estonia has also included additional measures to support the promotion of the uptake of hydrogen and electrolyser technologies, but the plan does not give details of those measures, and there is no reference to renewable hydrogen trade. As regards transport, the plan refers to the Liquid Fuels Act that sets out requirements for fuel suppliers, but it does not specify in detail how the obligation on fuel suppliers is meant to ensure that 2030 minimum levels are achieved.

Estonia has addressed recommendation 7. Estonia has provided projections of bioenergy demand up to 2030, including energy use from woody biomass. It has also confirmed that it will meet both national and LULUCF targets while ensuring its compliance with the revised

¹⁰ Directive (EU) 2018/2001 on the promotion of energy from renewable sources, as amended by Directive (EU) 2023/2413

RED II. On biogas and biomethane, Estonia has provided additional information on the numbers of plants as well as on the investment support provided to support biomethane production.

Estonia has partially addressed recommendation 8. The plan provides a description of the policies and measures with an expected timeline, but without providing details on the steps leading to the adoption of legislative and non-legislative policies and measures aimed at transposing and implementing the revised RED II.

2.3 ENERGY EFFICIENCY DIMENSION

Estonia has partially addressed recommendation 9. Estonia includes an indicative national contribution to the Union's indicative primary energy consumption target for 2030 of 5.49 Mtoe for primary energy consumption. This contribution is not in line with Article 4 of Directive (EU) 2023/1791¹¹ ('EED recast).

Estonia does not provide figures for the annual reduction in energy consumption to be achieved by all public bodies, but it does set out some policies and measures for achieving that reduction by public bodies, as well as for the renovation of public buildings. Examples include programmes to refurbish central and local government buildings and to install efficient street lighting.

Estonia specifies the amount of cumulative energy savings of 1.8297 Mtoe to be achieved from 1 January 2021 to 31 December 2030. This is in line with Article 8 on energy audits and energy management systems of the EED recast. Estonia also includes an explanation on how the annual savings rate and the calculation baseline were determined.

Estonia has partially addressed recommendation 10. Estonia sets out policies and measures to achieve the national contributions on energy efficiency, but it does not quantify the expected energy savings or the contribution for each of the reported energy efficiency measures towards the overall target. Among the main measures, Estonia includes support for energy and resource audits in industrial plants and a pilot energy storage programme. Estonia specifies how the energy efficiency first principle will be implemented and mentions public procurement as a key measure for implementing it and monitoring its implementation.

Estonia does not quantify the savings from the policies and measures designed to help meet the energy savings obligation under Article 8 of the EED recast.

Estonia specifies robust energy efficiency financing programmes and support schemes, including financial instruments and public guarantees, able to mobilise private investments and additional co-financing. Estonia outlines existing policy measures to promote the uptake of energy efficiency lending products and innovative financing schemes (such as Energy Performance Contracts and third-party financing).

Estonia has partially addressed recommendation 11. Estonia does not include an updated ambition level to ensure a highly energy efficient and decarbonised national building stock and to transform existing buildings into zero-emission buildings by 2050. Estonia does not provide intermediate milestones for 2030 and 2040 nor energy savings milestones for the buildings

¹¹ Directive EU 2023/1791 on energy efficiency and amending Regulation (EU) 2023/955 (recast).

stock. No details are given of the impact in terms of energy savings of each new measure put forward. The Estonian NECP specifies that the missing information will be provided with the upcoming national building renovation plan, required by Article 3 of Directive (EU) 2024/1275¹² ('recast EPBD'). Nevertheless, Estonia includes sufficient information on terms of funding and costs for measures related to buildings, but on energy and emission savings. Specific information is provided on policies and measures addressing deep renovation, with a specific focus on worst-performing buildings and vulnerable consumers and on policies and measures addressing decarbonisation of heating and installation of renewables in buildings.

2.4 ENERGY SECURITY DIMENSION

Estonia has partially addressed recommendation 12. For gas, the final updated NECP contains several objectives relating to diversification of supply. It sets a target of 70% for the share of imports from the largest source of supply by 2030. The plan also refers to ongoing works on a national roadmap for biomethane and biogas as part of this diversification policy. However, the final plan does not describe any new concrete measures for further diversification. As regards the demand side, the plan clarifies that no further reductions are to be expected for gas demand, as it has already declined by 25% since the beginning of the energy crisis in 2022. In fact, the WEM scenario forecasts anticipate an increase in the gross inland consumption of gas from 14,572 TJ in 2020 to 16,304 TJ by 2040.

For electricity, the plan does not yet contain a target for energy storage. Estonia describes the necessary preparatory measures for deploying nuclear energy, including the establishment of an appropriate regulatory framework and a competent nuclear regulator, although a final decision on the introduction of nuclear power has not yet been made. The final NECP does not address supply diversification or nuclear waste management.

For oil, the plan does not address the recommendations as it does not assess the adequacy of the oil infrastructure (pipelines and oil storage) in the long run with the expected decline in the demand for oil and the move to lower-carbon alternatives.

On the need to address climate adaptation through the energy system, no further information was provided beyond what was already in the draft plan.

2.5 INTERNAL ENERGY MARKET DIMENSION

Estonia has partially addressed recommendation 13. The plan aims to ensure that sufficient dispatchable capacities are available, through market-based measures to promote the entry of storage into the market. A pilot energy storage programme is being implemented and a study on centralised settlement market model to promote demand-side response is on-going. Targets and sub-targets are given for electricity system adequacy and flexibility by 2030. The final plan does not provide information on specific measures aimed at energy system integration to facilitate system integration of renewable electricity in accordance with Article 20a of the revised RED II.

Estonia describes in detail the consumer protection measures in place, particularly those that were applied during the energy prices crisis in 2021 – 2022. It mentions that the legal

¹² Directive (EU) 2024/1275 on the energy performance of buildings (recast) (Text with EEA relevance)

framework for the establishment of renewable energy communities is in place, and refers to the challenges energy communities face to be competitive in the market. However, it does not describe how it tackles these challenges and does not say how it plans to empower consumers to play a more active role in the retail market.

Estonia has partially addressed recommendation 14. Estonia addresses energy poverty through a subsistence allowance under the Social Welfare Act. The NECP acknowledges that energy poverty is not yet addressed as an independent issue in the national framework, hence, there is no specific reduction target. Reference is made to integrating energy-poor households into renovation and energy efficiency programmes, but these references are not detailed. Also, no energy efficiency obligation scheme has been implemented; Estonia uses alternative measures instead. According to the plan, Estonia aims to establish a framework for assessing and monitoring of energy poverty in line with the EED Recast, to be transposed into national law by October 2025.

2.6 RESEARCH, INNOVATION AND COMPETITIVENESS

Estonia has partially addressed recommendation 15. The plan does not sufficiently detail specific targets and measures to support research, innovation and competitiveness in clean energy technologies.

The NECP outlines measures to promote the development of net-zero projects, for instance on energy intensive industries the Research, Development, Innovation (R&D&I) and Entrepreneurship Development Plan 2021-2035 (*TAIE Development Plan*), which includes a roadmap for ‘Smart and Sustainable Energy Solutions’. Estonia’s 2030 Energy Development Plan (ENMAK) aims to boost security of energy supply and reduce greenhouse gas emissions, while also supporting competitiveness. According to the NECP, a national plan ‘Estonia 2050’ is in preparation, which will also include energy related targets. However, the financing of the measures remains unclear.

In terms of R&D&I projects, Estonia relies on the participation of research institutes in competitive European Horizon Europe calls. In addition, Estonia supports the SET Plan through its participation in the CETP partnership and the DUT partnership.

The plan still provides scarce information on how to facilitate through R&D&I support to manufacturing to create resilient and sustainable supply chains of net-zero components and equipment.

With regards to competitiveness, the plan describes how Estonia will ensure a predictable and simplified regulatory framework for permitting procedures, for example through a new common digital entry point for renewable projects, an amendment to the Planning Act facilitating spatial planning, building permits and drawing a standardised environmental impact assessment programme. However, the plan does not specify if this simplification will also concern projects relating to the manufacturing of clean technologies. The plan does not specify if access to national funding will be simplified.

The plan mentions investments in green skills to support the green transition for businesses. However, it gives only incomplete information on measures for developing these investments.

2.7 FINANCING THE ENERGY AND CLIMATE TRANSITION

Estonia has partially addressed recommendation 16. The plan does not provide comprehensive and consistent estimates of the overall and sectoral investment needs. It focuses mainly on public support (including EU funds and revenues from the EU ETS) available in 2021-2027. Nevertheless, the plan provides estimates at least for some dimensions: i) EUR 13 billion for energy efficiency, of which EUR 5 billion supported with public funds; ii) EUR 14 billion for climate-neutral electricity generation; iii) EUR 2 billion for heating; and iv) EUR 1-5 billion for decarbonisation of the gas network. The plan also provides aggregate information on how EU financial resources contribute to climate objectives. However, it does not provide information on the specific dimensions and/or policies the funds will support. Overall, the information presented in the Plan is insufficient to determine whether a potential financing gap exists in relation to the investment needs, or how such a gap would be addressed

Estonia has not addressed the recommendation to provide a robust assessment of the macroeconomic impact of the planned policies and measures.

2.8 JUST TRANSITION

Estonia has partially addressed recommendation 19. The final updated NECP includes analysis of the social, employment and skills impacts of the energy and climate transition for the Just Transition Fund (JTF) in the Ida-Virumaa region but fails to do so for the entire country. Detailed information on distributional impacts on vulnerable groups is also missing.

The plan indicates that there are oil shale commitments in the Territorial Just Transition Plan (TJTP) but does not provide a timeline for shale oil phase-out. Moreover, the plan does not specify the form of support, the impact of initiatives or the resources available for just transition, except for JTF.

The plan lacks the analytical basis needed for the preparation of the Social Climate Plan, such as information on the estimated impact of ETS2 and the identification of vulnerable groups. The plan does not explain how the policy framework identified in the NECP will contribute to the preparation of Estonia's social climate plan nor how the consistency of the two plans will be ensured.

2.9 PUBLIC CONSULTATION

Estonia has not addressed recommendation 20. The final plan provides no additional information beyond what is in the draft plan regarding consultations on the final NECP. Estonia organised two engagement workshops and a public consultation on the draft NECP in 2023, but no public consultation appears to have taken place on the final plan, although the NECP references stakeholder consultations in the context of developing the Climate-proof Economy Act. Estonia does not describe any process whereby all relevant authorities, citizens and other stakeholders, including social partners, were able to provide input into the final version of the NECP. In addition, there is no summary of the views expressed by different stakeholders, or how the final plan integrates them.

2.10 REGIONAL COOPERATION

Estonia has addressed recommendation 21. The final updated NECP sets out how Estonia participates in the Baltic energy market interconnection plan (BEMIP). Regional cooperation is being pursued, including cooperation on offshore wind, expanded to cover energy efficiency and renewable energy development with a specific focus on the transport sector. Moreover, the recent Baltic synchronisation connected the Baltic States' electricity system with the Continental European synchronous area. This is expected to remove bottlenecks and risks in the electricity system and increase the interconnection between the Baltic States and Poland.

2.11 ANALYTICAL BASIS

The plan provides a description of the analytical framework, with projections up to 2050. However, only WEM projections are provided, as discussions are ongoing on the Climate-proof Economy Act, which will propose additional measures. The analytical basis covers all dimensions of the Energy Union, embedding economic and social impacts. However, the methodologies used are only loosely described, with limited transparency on the model-based projections.

2.12 STRATEGIC ALIGNMENT, COHERENCE AND INTERACTION WITH OTHER PLANNING INSTRUMENTS AND POLICIES

Estonia addressed recommendation 17. The plan sufficiently covers the main reforms and investments under the recovery and resilience plan that contribute to implementing the Energy Union's objectives, targets, and contributions.

3 GUIDANCE ON THE IMPLEMENTATION OF THE NATIONAL ENERGY AND CLIMATE PLAN

The Commission encourages Estonia to ensure a timely and complete implementation of the final updated NECP. Estonia should pay particular attention to the elements listed below:

- On **ESR**, finalise the design and implementation of additional measures to reduce emissions in the effort sharing sectors in the context of the preparation of the Climate-proof Economy Act, paying particular attention to transport. Closely monitor the impacts of the policies included in the plan. Explore flexibilities to ensure compliance with ESR obligations.
- On **LULUCF**, design and implement additional measures, in particular measures concerning the promotion of sustainable forest management on degraded/unmanaged forest land, peatland restoration and extraction, quantifying their expected impacts. Continue strengthening regional development in the Baltic region in relation to monitoring, reporting and verification for the LULUCF sector and climate-smart agricultural practices.
- On **adaptation**, further quantitatively assess the relevant climate vulnerabilities and risks for the national objectives, targets, and contributions and the policies and measures in the different Energy Union dimensions. Ensure that the risk assessment specifies anticipated impacts and sets clear, measurable long-term targets. Develop a more detailed strategy for




the implementation, financing, scaling, and scheduling of adaptation measures, to ensure effective mitigation of climate risks. Carry out a comprehensive vulnerability assessment on the network and infrastructure, based on different climate scenarios. This would make it possible to identify and addressing potential weaknesses of the energy system.

- On **fossil fuels**, enable the gradual phasing-out of solid fossil fuels in line with TJTPs commitments. Outline a roadmap for phasing-out of the fossil fuel subsidies.
- On **renewable energy**, ensure that the planned measures will enable Estonia to meet the ambitious renewable energy targets by 2030, and address delays related to wind auctions.
- Promote the use of renewable energy in **industry** and further increase **energy system integration**. Put in place enabling measures to enhance **self-consumption** and energy communities. Facilitate access to environmental impact assessment data for permitting and greater transparency and promote sandboxing and experimentation with innovative renewables technologies.
- On **energy efficiency**, take additional measures to support delivery of the national contribution and the required end-use energy savings, particularly targeting the industrial and transport sector, where there is still untapped potential for further energy efficiency.
- On **buildings**, ramp up the pace and depth of renovation of the overall building stock, for residential and non-residential buildings, and speed up the roll-out of the national financing scheme for the building sector, also by increasing technical assistance among other things.
- On **research and innovation**, ensure that research and innovation objectives and funding pathways for 2030 and 2050 promote the transition towards a net zero and circular economy and support the decarbonisation of the energy system, transport, buildings and industry.
- Adopt a more comprehensive just transition strategy that addresses the impact on **vulnerable households** and allocates sufficient funding.

Slovakia


1 Overview of key objectives, targets and contributions in the final NECP

Table 2: Summary of key objectives, targets and contributions of Slovakia's final updated NECP

		2020	Progress based on latest available data	2030 national targets and contributions	Assessment of 2030 ambition level
	Binding target for greenhouse gas (GHG) emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)		2023: -16.6% ¹³	-22.7%	NECP: -31.5%
	Binding target for additional net GHG removals under the Regulation on Land Use, Land Use Change and Forestry (LULUCF)		2023: Reported net removals of -6.1 Mt CO ₂ eq. (2025 inventory submission, comprehensive review)	-0.5 Mt CO ₂ eq. (additional removal target)	Insufficient ambition based on projections: A gap of 1.9 Mt CO ₂ eq in 2030
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	17.3% (SHARES) 14% (target)	2023: 17.0%	25%	SK contribution of 25% is significantly below the 35% required according to the formula set out in Annex II of the Governance Regulation ¹⁴
	National contribution for energy efficiency:				
	Primary energy consumption	16.4 Mtoe	2023: 15.5 Mtoe	16.4 Mtoe	SK primary energy consumption contribution is 16.4 Mtoe, which is not in line with the EED recast Annex I formula results of 13.9 Mtoe
	Final energy consumption	10.4 Mtoe	2023: 9.3 Mtoe	9.6 Mtoe	SK final energy consumption contribution of

¹³ The ESR emissions in 2023 are based on the results of the comprehensive review that took place in 2025. The percentage reduction is compared with the 2005 emissions as set out in Annex I of Commission Implementing Decision (EU) 2020/2126. However, the final ESR emissions for 2021- 2025 will only be established in 2027 after a comprehensive review.

¹⁴ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action OJ L 328, 21.12.2018, p. 1–77 ('Governance Regulation').

					9.6 Mtoe is not in line with the national contribution of 8.7 Mtoe submitted by the Commission.
	Level of electricity interconnectivity (%) ¹⁵	41.4%	2024: 47.8%	15%	SK surpasses the EU- wide interconnectivity target

Source: Eurostat; Slovakia's final updated national energy and climate plan

2 CONSIDERATION OF COMMISSION RECOMMENDATIONS ON DRAFT NECP UPDATE

In December 2023, the Commission published a thorough assessment of Slovakia's draft updated NECP and provided recommendations¹⁶ for the preparation of the final updated NECP. Slovakia submitted its final updated NECP on 15 April 2025, more than nine months after the deadline of 30 June 2024¹⁷.

2.1 DECARBONISATION

Based on the information provided in the NECP, Slovakia expects to reduce total GHG emissions (excluding LULUCF) by 64.3% in 2030 compared to 1990. No projections post-2030 are provided.

2.1.1 Effort Sharing Regulation

Slovakia has addressed recommendation 1. The final NECP provides sufficient information on how Slovakia will meet its ESR target of -22.7% emission reductions by 2030 compared to 2005.

The plan provides updated projections that constitute an improvement compared to the draft plan. According to the projections existing and planned policies and measures, alongside implementing EU policies, are set to lead to a decrease of 31.5% by 2030 compared to 2005. This represents an overachievement of 8.8 percentage points compared to the national ESR target. In 2023, GHG emissions from ESR sectors accounted for 53.4% of the total in Slovakia (expected to be 60.5% in 2030)¹⁸, with transport projected to account for the largest share. The WAM projected value for ESR in 2030 is approximatively 16% lower than the WEM, which suggests that implementing the plan and complementing it with additional measures to reach the target will require a significant effort.

¹⁵ Calculated by the European Commission based on the ETNSO-E data (Winter Outlook 2025). The 2030 level represents the general interconnectivity target of 15%. Slovakia intends to keep its interconnectivity level above 50% in 2030.

¹⁶ SWD(2023) 925 final, and Commission Recommendation of 18 December 2023, C/2023/9615.

¹⁷ Article 14(2) of Governance Regulation

¹⁸ Total GHG excluding LULUCF. Source: Commission calculations based on the results of the 2025 comprehensive review for 2023 and on the Slovak final updated NECP for 2030.

The final plan only partially complemented the information on the policies and measures provided in the draft but still omits relevant information on their scope, timeline and expected greenhouse gas reduction impact. The plan covers all ESR sectors comprehensively and notes that the achievement of the WAM scenario depends on the take-up of electric vehicles, insulating buildings, electrification, and implementing ETS2.

On **transport**, the WAM projections describe an increase in emissions up to 2025, followed by a downward trend but not enough to offset earlier increases; emissions in 2030 would still be 7.7% higher than in 2005. For **buildings**, a sector representing almost a quarter of Slovakia's ESR emissions, the WAM projections describe a significant decrease in emissions up to 2030 (-42.8% compared to 2005). On **waste**, the plan is more ambitious than the draft and shows a large drop in emissions from 2025 to 2030. However, the plan does not clearly explain which measures generate the drop.

The plan refers to the introduction of the emission trading system for fuel combustion in buildings, road transport and additional sectors (ETS2). However, Slovakia has not transposed the measure into national law, thus potentially delaying the social climate plan. The WAM scenario projections account for the effect of ETS2 but do not quantify its impact in terms of achieving the ESR target.

2.1.2 LULUCF

Slovakia has partially addressed recommendation 3. The LULUCF sector in Slovakia generates net removals, absorbing roughly 27.4% of total GHG emissions in 2023. According to the LULUCF Regulation, Slovakia has to improve its net removals by -0.5 Mt CO₂eq in 2030, compared to its average in the 2016-2018 reference period. Nevertheless, based on the projections included in the plan (dating back to 2019), Slovakia will still have a gap of 1.9 Mt CO₂eq in 2030.

The plan does not provide information on how the additional measures in the WAM scenario, including the decrease in forest harvesting, will help Slovakia to meet the 2030 LULUCF target, nor does give details of how each of these measures will be funded. The plan also lacks information on the status and progress in ensuring higher-tier levels and geographically explicit datasets needed to ensure the robustness of net removal estimates.

2.1.3 Carbon capture and storage

Slovakia has partially addressed recommendation 2. The plan includes some elements for a carbon capture, utilisation and storage (CCUS) strategy. However, Slovakia does not plan to deploy CCS before 2030. The plan states that no large CO₂ storage options exist within Slovakia and estimates that 6 million tonnes of CO₂ could be captured and stored by 2030. A study referenced in the plan¹⁹ also provides details on the various industries where CCS could be applied, together with information on how the captured CO₂ could be transported, namely via pipeline to saline aquifers in Poland.

¹⁹ Decarbonization of the Slovak economy by 2030: Formulation of marginal abatement cost curves (2022), Value for Money Department, Ministry of Finance of the Slovak Republic.

2.1.4 Adaptation

Slovakia has partially addressed recommendation 4. In response to the recommendation, the plan refers to Slovakia's 2018 Climate Change Adaptation Strategy, its 2021 Action Plan and to the update of the Strategy, due to be approved by the end of 2025. It acknowledges the importance of integrating adaptation planning. It partially embeds adaptation policies and measures in the relevant Energy Union dimensions. The plan does not contain a comprehensive **analysis of climate vulnerabilities and risks**. It refers to the currently ongoing preparatory work of a new national adaptation strategy, including a comprehensive risk and vulnerability assessment. It also refers to the 2021 Action Plan, which provides the framework for addressing, for example, a crisis management and response system for extreme events such as floods or fires. The plan does not outline adequate policies and measures to address these vulnerabilities and risks.

The plan partially outlines **links to the specific Energy Union objectives and policies**, that adaptation policies and measures are meant to support. However, the impacts and benefits of adaptation policies on other Energy Union dimensions have generally not been quantified. The plan does not set out **additional adaptation policies and measures** to support the achievement of national objectives, targets and contributions under the Energy Union.

2.1.5 Fossil fuels

Slovakia has partially addressed recommendation 19. The plan clarifies that coal-fired electricity production was phased out in 2024, although the Vojany Power Plant may continue to produce a small amount of electricity from coal. The use of imported coal in heating plants is due to be phased out by the end of 2028.

The plan lists some fossil fuel subsidies, indicating the yearly amounts provided up to 2021. The plan states that public economic interest subsidies for generating electricity from indigenous coal were phased out in 2023. However, no clear phase-out timeline and roadmap are provided.

2.2 RENEWABLES

Slovakia has partially addressed recommendation 5. Slovakia has slightly increased the ambition level for the share of renewable energy sources to 25%. However, this is still significantly below the 35% needed as a contribution to the Union's binding renewable energy target for 2030 laid down in Article 3(1) of Directive (EU) 2018/2001²⁰ (revised 'RED II'), calculated in line with the formula in Annex II to the Governance Regulation. Slovakia included indicative trajectories for 2025 and 2027, but they are below the reference points set out in Article 4 (a)(2) of the Governance Regulation.

Slovakia has partially addressed recommendation 6. Slovakia provides an estimated trajectory for the deployment of renewable energy technologies over the next five years. However, it does not give information on the trajectory for 2020-2025 or the outlook to 2040. The plan includes an indicative target for innovative renewable energy technologies by 2030

²⁰ Directive (EU) 2018/2001 on the promotion of energy from renewable sources, as amended by Directive (EU) 2023/2413

in line with the revised RED II. The final NECP states that financial support for renewable energy sources will prioritise innovative renewable energy technologies.

Slovakia does not provide specific targets to contribute to the indicative targets for buildings and industry for 2030. The plan confirms that projections in the draft plan do contribute to the binding targets for heating and cooling for both 2021-2025 and 2026-2030, and to the indicative target for the top-ups referred to in of Annex IA to the revised RED II.

Slovakia specifies the expected contribution from individual renewable technologies to the share of renewable energy sources in the transport sector from 2025 to 2030, towards the 29% target. This includes a sub-target for advanced biofuels and for hydrogen from renewable energy sources, including renewable fuels of non-biological origin.

Slovakia has partially addressed recommendation 7. Slovakia points to several measures to be implemented to transpose the revised RED II. Examples include the designation of renewables acceleration areas, starting with the designation of two pilot areas for wind energy by 2026, and the simplification and shortening of permitting procedures for renewable energy projects.

Slovakia announces the introduction of a legislative and regulatory framework to support the development of power purchase agreements (PPAs) and contract for differences (CfDs), but it does not provide any details. Regarding guarantees of origin, the plan mentions the setting-up of a system for guarantees of origin in 2022 but gives no information on forward-looking measures. Slovakia intends to increase the number of renewables self-consumers and energy communities by continue to support households financially through existing programmes.

In 2023, Slovakia approved an Action Plan to implement the National Hydrogen Strategy by 2026, focused on addressing the regulatory barriers, supporting start-ups and providing financial support for hydrogen. It has put forward a State aid scheme that will run until 2026 to support, the production of renewable hydrogen among other things.

Slovakia has partly addressed recommendation 8. The final NECP provides some projections on biomass supply, however this is not disaggregated by sector (heat, electricity, transport). The updated NECP also provides some data for imports, although it is not clear if the wood in question is intended for energy use. Further, the plan does not include information on the source of forest biomass used for energy and an assessment of the domestic supply of forest biomass for energy purposes in 2021-2030 in line with the strengthened sustainability criteria under Article 29 of Directive (EU) 2018/2001 as amended. In addition, as no projected use of forest biomass for energy production is included, Slovakia has not provided an assessment of the compatibility of the projected use of forest biomass for energy production with Slovakia's obligations under the revised LULUCF Regulation.

Slovakia has not addressed recommendation 9. Slovakia has not provided an expected timeline of the steps leading to the adoption of legislative and non-legislative policies and measures aimed at transposing and implementing the revised RED II.

2.3 ENERGY EFFICIENCY DIMENSION

Slovakia has partially addressed recommendation 10. Slovakia includes an indicative national contribution of 9.6 Mtoe for final energy consumption to the Union's binding final energy consumption target for 2030. This contribution is not in line with the corrected

indicative national contribution that the Commission submitted to Slovakia in March 2024 under Article 4(5) of Directive (EU) 2023/1791²¹ ('EED recast').

The plan sets an indicative national contribution of 16.4 Mtoe for primary energy consumption to the Union's indicative primary energy consumption target for 2030. This contribution is not in line with Article 4 of the EED recast.

Slovakia provides the energy consumption reduction (0.09 Mtoe a year) to be achieved by all public bodies, but without disaggregating it by sector as required by Article 5 of the EED recast. Slovakia reported the yearly energy savings to be achieved to comply with the obligation under Article 6 of the EED recast on the renovation of buildings owned by public bodies, and it also specified that it opted for the alternative approach. Slovakia sets out complete policies and measures to achieve the reduction of energy consumption from public bodies.

Slovakia has partially addressed recommendation 11. Slovakia sets out complete policies and measures for achieving the national contributions on energy efficiency, but the plan does not quantify the expected energy savings or the contribution for each of the reported energy efficiency measures.

Slovakia cites robust energy efficiency financing programmes and support schemes, including financial instruments and public guarantees, capable of mobilising private investment and additional co-financing. It names existing policy measures aimed at promoting the uptake of energy efficiency lending products and innovative financing schemes such energy performance contractors and energy service companies (ESCOs).

Slovakia has partially addressed recommendation 12. Slovakia has not updated the milestones given in the long-term renovation strategy (LTRS) submitted in 2020 or the 2023 draft plan, nor does it give intermediate milestones for 2030 and 2040. However, the plan specifies many measures on building renovations, with financial instruments and expected savings under Article 6 and 8 of the EED recast. Slovakia also mentions also that the public sector requirement will necessarily mean increasing the renovation rates. Furthermore, Slovakia provides sufficient information on related measures for buildings in terms of energy savings, funding and costs. Slovakia also includes specific information on policies and measures addressing deep renovation, with a specific focus on the worst-performing buildings or vulnerable consumers. In addition, it gives specific information on policies and measures addressing decarbonisation of heating and installation of renewables in buildings.

2.4 ENERGY SECURITY DIMENSION

Slovakia has partially addressed recommendation 13. In the gas sector, the final plan does not include new objectives or measures for reinforcing security of supply by diversifying its energy supply or by encouraging demand reduction. The plan does not set a target date for phasing out Russian gas imports. On positive development, Slovakia has objectives to enhance gas storage capacity, to foster infrastructure diversification, and to produce 300 mcm of biomethane by 2030. The reference to domestic extraction potential, which could account for 10% of national gas needs, is also noted.

²¹ Directive EU 2023/1791 on energy efficiency and amending Regulation (EU) 2023/955 (recast).

For electricity, the final plan clarifies that Slovakia does not have a specific objective for flexibility to integrate more renewables into the system. Slovakia does not set a specific objective for energy storage. However, the plan does include some information on energy storage projects and their role in providing various flexibility services. There are no specific numbers on new storage capacity installations, and although the plan acknowledges the increasing importance of demand response solutions, no roadmap is provided for storage or other flexibility instruments. The plan sets out general information on the development of new supply products (e.g. dynamic tariffs) to stimulate the uptake of storage and flexibility products.

In the oil sector, the plan does not assess the adequacy of oil infrastructure (pipelines, refineries and oil storage) in the long run with the expected decline in demand for oil and the move to lower-carbon alternatives. The plan does not specify plans for phasing out Russian crude oil supply in the long term.

The final plan contains no additional information beyond what was found in the draft plan regarding the need to adapt the energy system to the climate change.

On nuclear energy, Slovakia describes in detail measures taken to diversify the supply of nuclear materials and fuel. It also provides information on spare parts and maintenance services. The final NECP gives some, although limited, information on the long-term management of nuclear waste.

2.5 INTERNAL ENERGY MARKET DIMENSION

Slovakia has partially addressed recommendation 14. The plan takes account of the need for faster integration of the internal energy market to provide greater flexibility and empower and protect consumers. Slovakia does not quantify flexibility needs or set clear targets and objectives for demand response, storage, and flexibility. Slovakia plans to set an indicative target for non-fossil flexibility based on the assessment report on system flexibility needs, which uses the methodology referred to in Articles 19e and 19f of Regulation (EU) 2024/1747²².

The plan includes policies and measures that enhance flexibility and enable non-discriminatory participation in new flexibility services. The Slovak market operator is currently setting up an Energy Data Centre, which will allow market participants to aggregate flexibility through an independent aggregator. The government supports deployment of smart grids and electricity storage systems and Slovakia has started preparing for implementation of the 2024 package on electricity market design reform.

Slovakia indicates its intention to facilitate the integration of electricity from renewable energy sources into the energy system as part of the transposition of the Article 20a of the revised RED II. However, the final NECP lacks sufficient detail on how this will be accomplished.

The plan mentions active participation of consumers in the energy market and implementation of relevant EU legislation. However, the level of consumers engagement in practice is not very

²² Regulation (EU) 2024/1747 amending Regulations (EU) 2019/942 and (EU) 2019/943 as regards improving the Union's electricity market design.

clear, considering, for instance, that Slovakia applies regulated prices for vulnerable customers and all households are defined as vulnerable.

Slovakia has partially addressed recommendation 15. Slovakia has taken steps towards a more precise definition of energy poverty. The plan refers to a proposal for a national definition of energy poverty, but it lacks information on tailored future measures and strategies that will primarily target those in energy poverty.

2.6 RESEARCH, INNOVATION AND COMPETITIVENESS

Slovakia has partially addressed recommendation 16. The plan includes a comprehensive approach, although it does not include targets on support for research, innovation, and competitiveness in clean energy technologies, nor does it describe a funding pathway towards 2030 and beyond.

Relevant policies and measures include the National Research, Development and Innovation Strategy 2030, the Strategy for Smart Specialisation 2021-2027 and the Action Plan for Implementation of the National Hydrogen Strategy by 2026. The plan includes some measures to promote the development of net-zero projects, including those relevant for the energy intensive industries for example in the hydrogen sector.

With regards to competitiveness, Slovakia intends to implement a simplified regulatory framework for permitting procedures regarding the establishment of the renewable acceleration areas and eliminating permitting hurdles. It mentions specify technologies such as geothermal but does not specifying if the simplified permitting will also cover manufacturing facilities for net zero technologies, or if access to national funding will be simplified where needed. The plan includes information on policies and measures for developing clean energy related skills.

The plan refers to the manufacturing of clean technologies in Slovakia, for example in relation to mobility and heat pumps, but does not specify any related measures.

2.7 FINANCING THE ENERGY AND CLIMATE TRANSITION

Slovakia has partially addressed recommendation 17. The plan estimates that investments worth EUR 80 billion are needed to implement the WAM scenario for 2021-2030. This estimate covers industry, households, services and the transport sector, and is based on two energy and macroeconomic models. However, the plan does not present investments needs, investment gaps and funding sources for the policy measures. The plan does not distinguish between public and private investment needs and does not describe measures to mobilise private investment. The plan describes in general terms how Slovakia plans to use EU financial instruments, such as the Modernisation Fund, the Social Climate Fund, the cohesion policy funds and ETS revenues. However, the available public funds are significantly lower than the estimated investment needs.

Slovakia has partially addressed the recommendation to provide a robust assessment of the macroeconomic impact of the planned policies and measures. The methodological framework underpinning the macroeconomic analysis is well-established and robust. However, the assessment in the plan lacks a comprehensive impact analysis with respect to key macroeconomic variables such as GDP, consumption, or the general government balance. The

plan does not explain and quantify the impact of the identified investment needs on key economic and fiscal indicators.

2.8 JUST TRANSITION

Slovakia has not addressed recommendation 20. The final updated plan provides limited analysis of the social, employment and skills impacts of the energy and climate transition in coal regions and regions financed by Just Transition Fund (JTF). However, it lacks a comprehensive analysis of the impact across sectors and for all vulnerable groups beyond the scope of energy poverty. Moreover, the form of support and the financial resources to help ensure a just transition, except for JTF, are still not detailed. The commitments in the plan are aligned with those in the TJTPs.

The plan provides a limited analytical basis for the preparation of the social climate plan. The plan mentions the socio-economic impact of ETS2 and its link with the Social Climate Fund. However, it does not provide an impact analysis and only briefly mentions their synergies. It only briefly explains how the policy framework identified in the NECP will contribute to the Slovak social climate plan and how the consistency of the two plans will be ensured.

2.9 PUBLIC CONSULTATION

Slovakia has not addressed recommendation 21. The plan only describes the general consultation process used by the government but does not provide a clear and detailed overview of the specific consultation designed to feed into both the draft and the final updated plans. Slovakia does not describe whether the process enabled participation from all relevant authorities, citizens, and other stakeholders, including social partners. The plan also lacks a summary of the views expressed by different stakeholders, and of how the plan integrates the views expressed during the consultations.

2.10 REGIONAL COOPERATION

Slovakia has not addressed recommendation 22. Slovakia does not envisage any intensification of regional cooperation. The plan points to discussions on security of supply in the Visegrad Forum and the Central and Southeastern Europe Energy Connectivity High-Level Group (CESEC), but there is no clear indication that Slovakia plans to become more involved in the forum, the CESEC or any other in another cooperation framework, such as cooperation frameworks in line with Article 9 of the Renewable Energy Directive.

Apart from bilateral cooperation on implementation of the cross-border investment plans, wider regional cooperation to support cross-border transmission projects and other key electricity infrastructure projects is not currently considered necessary. Moreover, despite the reference to ongoing consultations with Czechia, Hungary and Austria (not Poland), no progress is reported on signing the four bilateral solidarity arrangements for the security of gas supply and the cooperation with the neighbouring countries does not seem to go beyond the gas interconnectors in place or planned ('Solidarity Ring').

2.11 ANALYTICAL BASIS

The plan provides a description of the analytical framework with WEM and WAM projections. However, these projections only go up to 2030. The plan partly covers all dimensions of the Energy Union, embedding economic and social impacts. The methodologies used are described for the economic impact assessment, although with limited transparency.

2.12 STRATEGIC ALIGNMENT, COHERENCE AND INTERACTION WITH OTHER PLANNING INSTRUMENTS AND POLICIES

Slovakia has partially addressed recommendation 18. The final NECP insufficiently covers the main reforms and investments in the recovery and resilience plan (RRP) that contribute to implementing the objectives, targets and contributions of the Energy Union.

While the RRP investments are well covered in the final NECP, the document still does not refer to many reforms of the Slovak RRP which are relevant climate and energy reforms of the RRP and its REPowerEU chapter. Moreover, some of the measures in the NECP are not adequately recognized as part of the RRP.

3 GUIDANCE ON THE IMPLEMENTATION OF THE NATIONAL ENERGY AND CLIMATE PLAN

The Commission encourages Slovakia to ensure a timely and complete implementation of the final updated NECP. Slovakia should pay particular attention to the elements listed below:

- On **ESR**, implement in a timely manner all policies aimed at meeting the **ESR target**, paying particular attention to the transport policies..
- On **LULUCF**, improve targeting of existing policies focusing on sustainable forest management, diversifying tree species to increase resilience to climate change and converting arable land to grassland. Implement additional measures including the reduction of forest harvesting and adoption of agroforestry to further close the gap. Ensure funding support through the common agricultural policy and other national sources for successful implementation.
- On **adaptation**, quantitatively assess the relevant climate vulnerabilities and risks for the national objectives, targets, and contributions and the policies and measures in the different Energy Union dimensions. This would make it possible to better outline and quantify the links to the specific Energy Union objectives and policies that adaptation policies and measures are meant to support. Also, set out additional adaptation policies in sufficient detail and in line with the anticipated new Slovak adaptation strategy.
- Develop a roadmap with specific measures to phase out **fossil fuels subsidies**.
- On **energy efficiency**, put in place measures to achieve the higher ambition for energy efficiency by 2030 by developing and implementing additional energy efficiency measures. Further energy efficiency measures should be introduced especially in the transport sector, where more ambition is needed to support the achievement of the target.

- On **energy poverty**, adopt the definition of energy poverty as well as plans and a roadmap with specific, tailored measures and strategies aimed at alleviating energy poverty, and targeting energy efficiency measures towards households in energy poverty.
- On **buildings**, ramp up the pace and depth of renovation of the building stock and adopt more ambitious targets for residential buildings and non-residential buildings for the years 2030, 2040 and 2050. Provide more details on measures promoting deep renovation and addressing the worst performing segments.
- On **research and innovation**, ensure that research and innovation objectives and funding pathways for 2030 and 2050 promote the transition of businesses towards a net zero and circular economy. Clarify how the growth and development of **innovative technologies and industries** will be supported in line with the **SET-Plan** and Horizon Europe. Detail the **planning of policies and measures to enhance flexibility and digitalise the energy system**, with a focus on grid infrastructure.
- On **industry**, put in place a pathway to decarbonise industry through key technologies, including CCUS and hydrogen, and robust measures to support implementation.
- Adopt a more comprehensive **just transition strategy** that addresses all the sectors and territories and allocates appropriate financial resources. Address potential green skills gaps, allocating sufficient resources to upskilling and reskilling.