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Assessment of the final national energy and climate plan of Czechia

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1. SUMMARY

Czechia's final national energy and climate plan (NECP)¹ sets a target of reducing total greenhouse gas emissions by 44 Mt by 2030, corresponding to a 30% reduction relative to 2005 and implies a similar level of ambition. Under the Effort Sharing Regulation (ESR), Czechia has a binding national target for **greenhouse gas (GHG) emissions** not covered by the EU Emissions Trading System (EU ETS) of -14% by 2030, compared to 2005. While with existing measures the projected emissions reductions correspond to 12.5%, with additional measures, the binding national target under the Effort Sharing Regulation would only be attained if the LULUCF commitment is met. The national long-term GHG reduction objective is -80% in 2050, as set out in the National Long-Term Strategy. The main policy measures to attain the 2030 target include promoting electromobility and sustainable transport, and providing incentives for renovating buildings. As regards the contribution of the land use, land use change and forestry (**LULUCF**) sector, less removals are projected with additional measures than with existing measures, due to increased bioenergy use, and the plan states that with accounting rules applied Czechia is unlikely to generate credits to be used for ESR compliance.

Czechia's **renewable energy** contribution to the 2030 EU-level target is 22% of gross final energy consumption in 2030. This is an increase of 1.2 percentage points over the draft plan, but is considered unambitious as it is below the share of 23% by 2030 resulting from the formula in Annex II to Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (the Governance Regulation). Czechia plans to increase its share of electricity consumption from renewable sources to 16.9% by 2030, which constitutes a significant slow-down compared to 2010-2018, despite the massive cost reductions in wind and solar photovoltaic power generation (PV) and the increasing role of renewables in electrifying other sectors. For heating and cooling, Czechia plans to increase the share of renewable energy by 1.0 percentage point annually. This is below the indicative 1.1 percentage points set in the Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (the Renewable Energy Directive).

For **energy efficiency**, the Czech contribution to the EU target translates into energy consumption levels of 41.4 Mtoe (primary energy consumption) and 23.7 Mtoe (final energy consumption). The first figure reflects a low level of ambition, while the second reflects a modest level of ambition². For Czechia, the cumulative target in line with Article 7 of the Energy Efficiency Directive is 11.03 Mtoe (462 PJ). The policy measures to attain the energy efficiency target are described clearly, but it remains unclear whether the planned measures are sufficient to attain the targeted savings by 2030. The 'energy efficiency first' principle is not explicitly applied. Czechia has provided in the final NECP some information about the energy efficiency of buildings, including a target to increase the depth and rate of building renovation. It has submitted its long-term renovation strategy.³

¹ The Commission publishes this country-specific assessment alongside the 2020 Report on the State of the Energy Union (COM(2020)950) pursuant to Article 13 of Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action.

² In accordance with the methodology described in SWD (2019) 212 final.

³ Czechia submitted the long-term renovation strategy pursuant to Article 2a of Directive 2010/31/EU on the Energy Performance of buildings on 16 June 2020. However, this assessment is only based on the building-related elements provided in the final NECP.

In its plan, Czechia has set objectives for **energy security** to maintain import dependency of no more than 65% by 2030 and 70% by 2040. As regards the **internal energy market**, the plan outlines the envisaged reform in the electricity sector as well as some measures aimed at notably promoting a better integration of renewables at favouring the active role of prosumers and consumers. There are plans to increase the electricity **interconnection** level to at least 30% by 2030, well above the EU target of 15% by 2030.

Czechia has no specific quantifiable targets for public **research, development and innovation** related specifically to the Energy Union objectives. Research areas relating to energy and climate are covered in the overall national research priorities.

Czechia has not provided any information about the total amount of **investment** it needs to implement the NECP between 2021 and 2030. However, the plan does contain information on the country's investment needs in the fields of renewable energy sources; energy efficiency; and infrastructure, including transmission system development. EU funding sources, ETS-related revenues and additional budgetary means are considered as funding sources. There is no impact assessment of planned policies and measures.

The final plan includes a list of renewable and **fossil fuel subsidies**. The list is largely consistent with the categories of subsidies identified in recent Commission analyses of energy subsidies. The plan gives no specific figures for fossil fuel subsidies, although they have been estimated in recent Commission analyses of energy subsidies.

The final plan does specifically address interactions with **air quality and emissions policy**, making reference to the national air pollution control programme under the National Emission Reduction commitments Directive⁴. Projections for emissions of five pollutants regulated under this Directive are also provided, following the recommendation issued on the draft NECP, however the correspondence between the scenarios considered in this assessment and in the overall NECP is not entirely clear.

On **just and fair transition**, the plan presents the RESTART programme, designed to support the restructuring of Czechia's coal regions. This covers businesses and innovation, direct investment, R&D, human resources, social stabilisation, infrastructure, and the environment. However, there is no assessment of the social, economic and skills impacts of the transitions. The programme has been strengthened through the setting up of a Coal Commission which is responsible for completing a roadmap for the transition from coal to a climate-neutral economy.

Czechia refers to ongoing work on defining **energy poverty**. It considers the level of energy poverty to be very low, believes that it is already being addressed by general social measures, and does not propose any specific measures at this stage.




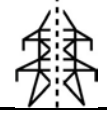
There are **several examples of good practices** in Czechia's final energy and climate plan. Specifically, the plan aims at ensuring that the energy and climate objectives and policies and measures are compatible with the objectives relating to landscape protection, to air quality and reduction of air pollutants and to water bodies quality, the safeguarding of biodiversity and soil protection. Furthermore, it incorporates support to organic farming development to reduce the use

⁴ Directive (EU) 2016/2284

of mineral fertilisers and protection of biodiversity in forest management, for instance giving priority to autochthonous species and raising the risks of bioenergy expansion in the energy mix.

Overview of the key objectives, targets and contributions

The table below shows Czechia's objectives, targets and contributions under the Governance Regulation⁵:

	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) (%)	4% (2018)	9%	-14%	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	15% (2018)	13 %	22%	unambitious (23% is the result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe) Final energy consumption (Mtoe)	40.4 (2018) 25.3 (2018)	43.3 23.9	41.43 23.65	Low ambition Modest ambition
	Level of electricity interconnectivity (%)	26.6% (2018)	29.6%	44.1%	N.A.

Sources: European Commission, Energy statistics, Energy datasheets: EU countries; European Semester by country; Czechia's final national energy and climate plan.

2. FINALISATION OF THE PLAN AND CONSIDERATION OF COMMISSION RECOMMENDATIONS

Preparation and submission of the final plan

Czechia **notified** its final national energy and climate plan (NECP) to the Commission on 22 January 2020.

⁵ 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.

A **public consultation** on the final energy and climate plan was launched on 11 November 2019. This was done by publishing the plan on the Ministry of Industry and Trade's website. Czechia has not provided a summary of the public's views or of how they have been taken into account in the final plan, but says the material is available on request. Strategic documents underpinning the policies and measures listed in the plan were subject to a strategic environmental impact assessment. However, Czechia has not carried out any strategic environmental impact assessment (SEA) on the NECP, as required by Directive 2001/42/EC.

Czechia consulted its neighbours while preparing the NECP. It discussed the NECP with the other V4 (Visegrád) countries (Poland, Slovakia, and Hungary), and with Austria. Czechia also invited all the other EU Member States to comment on its draft NECP⁶. However, no such comments were received in the subsequent consultation.

Consideration of Commission recommendations

In June 2019 the Commission issued 10 recommendations on Czechia's draft national energy and climate plan (NECP) for follow-up in the final plan⁷. Annex II to this staff working document gives a detailed account of how the final NECP reflected these various elements. Overall, the final NECP **partially addresses** most of the Commission's recommendations. The main changes introduced in the final plan are as follows.

On **renewables**, Czechia has **partially addressed** the recommendation to increase its contribution to at least 23%, include an indicative trajectory, detail policies and measures, and increase its level of ambition in the heating and cooling sector. Its contribution to the EU renewables target for 2030 has been increased to 22% from the 20.8% referred to in the draft. However, this increase has not brought it up to the level recommended by the Commission. An indicative trajectory is included. The average annual change of RES in heating and cooling sector has been increased from 0.8 p.p. to 1.0 p.p. (without waste heat), which is less than the indicative increase of 1.1 p.p. Czechia mentions that new renewable measures will be introduced through an ongoing review of the renewables law (tariff support for small renewables, renewable auctions, new support schemes for sectoral targets, renewables in heating and cooling, and bio-methane). However, it is unclear whether, after years of stagnation, it would be sufficient to accelerate deployment, for example, building up sufficient geothermal energy capacity that is currently absent, or adding 2 GW of photovoltaic capacity within the next decade, without providing specific support or announcing future auctions. There is currently still no support for RES above 10kW (non-bioenergy), and Czechia has not done enough to clarify future tendering and investment conditions in its final plan. No provision is made for measures to do with the enabling frameworks for renewable self-consumption, private purchasing agreements, simplifying grid access, or encouraging renewable energy communities. Many first-generation renewable assets will be reaching the end of the support period, but no policy measures for repowering have been specified. In general, the sectoral target structure seems to underestimate the cost-competitiveness of renewable electricity production from mature technologies, such as solar and wind, and of the decarbonisation of transport and the heating and cooling sector. Instead, it relies on large increases in bioenergy, mainly in heating.

⁶ On 23 August 2019, Czechia published its draft NECP for regional consultation with a deadline of 15 October 2019 and informed all other Member States accordingly.

⁷ Commission Recommendation of 18 June 2019 on the draft integrated national energy and climate plan of Czechia covering 2021-2030, C/2019/4403.

On **energy efficiency**, Czechia **did not address** the recommendation to increase its level of ambition and to include new measures. It has not increased its contribution, and the levels of primary energy consumption are even higher than those given in the draft plan. Although the country has clarified its policies in some measure, it has not done so to the extent required by Annex III of the Governance Regulation. On buildings, the final plan does not include the long-term renovation strategy, it does contain some additional information.

On **energy security**, Czechia has **partially addressed** the recommendation to include projections for the future energy mix and related measures, and to detail measures to reduce its energy dependency and diversify gas imports. Specifically, Czechia considered the impact of increased energy imports to replace lignite and coal in the energy mix, and at the potential role of renewable gases. However, no measures to ensure that they can enter the market (e.g. infrastructure) have been specified.

Related to the **internal energy market**, Czechia has **largely addressed** the recommendation to define its objectives, targets and measures for market integration and to assess measures to develop competition. The plan outlines measures to reform the electricity market, promote the integration of renewables, and support prosumers and consumers.

Czechia has **partially addressed** the recommendation to clarify national objectives and funding targets and specify measures for **research, innovation and competitiveness**. The objectives for research and innovation lack a specific timeline and quantified targets, and are not supported by specific policies and measures.

Czechia has **partially addressed** the recommendation to deepen existing **regional cooperation**. During the finalisation of the national energy and climate plan, various meetings were held with other EU countries, and areas for future cooperation were identified. However, no defined topics, measures or planned future cooperation have been described.

On **investment needs** and mechanisms and funding sources to leverage investment, Czechia has **largely addressed** the recommendation to include a general overview of investment needs, to include financing and to consider cost-effective transfers under Regulation (EU) 2018/842. In particular, Czechia has provided estimates of the needs for investment in renewables, energy efficiency and infrastructure. However, a more detailed calculation of the budget needed in order to comply with Article 3 of the Energy Efficiency Directive is missing.

Czechia has **partially addressed** the recommendation to list actions taken and plans to **phase out energy subsidies, especially those allocated for fossil fuels**. Although the plan includes a list of subsidies for renewables, energy efficiency and fossil fuels, there is no information on actions or plans to phase out fossil fuel subsidies. The plan states that Czechia does not intend to systematically phase out subsidies that are key to meeting the EU's climate protection objectives. However, some of these subsidies, such as those granted for biomass boilers, when they also use coal, can be viewed as indirect subsidies for fossil fuels.

Czechia **largely addressed** the recommendation to complement the **analysis on air quality**. Air emission projections are available in the national energy and climate plan and links are made to

the National Air Pollution Control Programme developed under the National Emission reduction Commitments Directive⁸.

Finally, Czechia has **partially addressed** the recommendation to integrate **just and fair transition aspects** better. Some additional information has been provided on the RESTART project for coal regions, but without any additional impact assessment. Although Czechia is in the process of defining the criteria for energy poverty, no information is available about any policies or measures in this field.

Links with the European Semester

In the context of the European Semester framework for the coordination of economic policies across the EU and of the country report 2019⁹, Czechia received one country-specific recommendation¹⁰ on climate and energy, calling on it to ‘focus investment-related economic policy on transport, notably on its sustainability, digital infrastructure, and low-carbon and energy transition, including energy efficiency, taking into account regional disparities.’ In the 2020 country report¹¹ adopted on 20 February 2020, the Commission found that Czechia had achieved limited progress on this recommendation. The report notes that while Czechia’s plan supports the recommendations, it gives no specific details of how they are to be achieved.

Due to the COVID-19 crisis, the European Semester country-specific recommendations for 2020 considered Member States’ responses to the pandemic and made recommendations to foster economic recovery. In particular, they focused on the need to mature public investment projects as soon as possible and promote private investment, including through relevant reforms, notably in key sectors to promote the green and the digital transitions. In this context, Czechia received a country-specific recommendation¹² stressing the importance of focusing investment on ‘the green and digital transition, clean and efficient production and use of energy, and sustainable transport infrastructure, including in the coal regions. Ensure access to finance for innovative firms and improve public-private cooperation in research and development’.

The Governance Regulation requires Member States to ensure that their national energy and climate plans take into consideration the latest country-specific recommendations issued in the context of the European Semester. Czechia’s national energy and climate plan has the potential to support the implementation of the European Semester recommendations, as it identifies investment needs and financial resources to meet them.

⁸ Directive (EU) 2016/2284

⁹ The Annex D to the 2019 Country report also sets out priority investments for the 2021-2027 cohesion policy, substantially contributing to the clean energy transition.

¹⁰ Recommendation for a Council Recommendation on the 2019 National Reform Programme of Czechia and delivering a Council opinion on the 2019 Stability Programme of Czechia, COM(2019) 503 final.

¹¹ Commission staff working document, Country Report Czechia 2020, SWD/2020/502 final.

¹² Recommendation for a Council Recommendation on the 2020 National Reform Programme of Czechia and delivering a Council opinion on the 2020 Stability Programme of Czechia, COM(2020) 503 final.

3. ASSESSMENT OF THE AMBITION OF OBJECTIVES, TARGETS AND CONTRIBUTIONS AND OF THE IMPACT OF SUPPORTING POLICIES AND MEASURES

Decarbonisation

Greenhouse gas emissions and removals

Czechia has set a **national target of reducing its total GHG emissions** by at least 44 Mt CO₂eq by 2030 compared to 2005, corresponding to a reduction of 30%. It has also set indicative GHG emission targets at 70 Mt CO₂eq (to be achieved by 2040) and 39 Mt CO₂eq for 2050 (80% reduction compared to 1990).

Czechia's binding 2030 **non-ETS greenhouse gas (GHG) emission target** is -14% compared to 2005. The country aims to meet this target through domestic measures.

It is no straightforward matter to compare the two levels of ambition. With existing policies, the final Czech NECP projections come close to meeting Czechia's total GHG target if LULUCF is excluded, though they do not fully achieve it. For the non-ETS the effort sharing projections correspond to emission reductions of 12.5% relative to the 2005 base year under the Effort Sharing Decision¹³. This is close to the 2030 target within effort-sharing sectors, but falls slightly short of the target. The total GHG reduction target thus seems to reflect a similar level of ambition.

Projections of GHG emissions reductions under the scenarios with existing measures (WEM) and with additional measures (WAM) differ very little¹⁴ For greenhouse gas emissions outside the EU ETS sector, the WAM projections correspond to 14% (13.5%) reductions relative to 2005, thus attaining the binding national target under the Effort Sharing Regulation if the LULUCF no-debit commitment is met.

The plan provides some information on the projected LULUCF sink with existing and additional measures (the additional measure being a transition to more diverse forests). When it comes to the implications of these projections for the generation of LULUCF debits or credits, the plan does not provide exact figures; however, based on the projected trend in managed forest land, the plan concludes that Czechia is unlikely to be able to create any LULUCF credit and use the flexibility from the LULUCF sector to the effort sharing sectors. The plan does not provide a similar assessment for managed cropland, grassland and wetlands.

Czechia has no target for reducing GHG emissions in the **transport** sector by 2030. In fact, GHG emissions from transport represent around 14% of overall GHG emissions, but the figure can be expected to increase by 2030. There is an action plan for clean mobility, which supports

¹³ The current 2005 base year under the Effort Sharing Decision for Czechia is 61.66 Mt, as published in SWD(2019)396, which takes account of the extension of the scope of ETS that took place in 2013. The Czech plan contains several 2005 non-ETS emission values, which differ either slightly or significantly.

¹⁴ The WEM scenario projects slightly higher total GHG emission reductions including LULUCF than the WAM scenario. This is linked with projected emissions from the LULUCF sector; the WAM scenario envisages changes in the age structure and species composition of forests. No WAM scenario is developed for industrial processes and product use, or for agriculture. Within the energy sector, WAM projections are given for transport but not for other areas. WAM projections resulting in lower emissions are provided for the waste sector. The implied effort sharing emissions under WAM have been calculated starting from Table 72 of the plan, in the light of Czechia's GHG WAM projection under the Monitoring Mechanism Regulation.

alternative fuel infrastructure, clean mobility in public transport (including electric buses) and for freight, and low-emission zones. Measures to support alternative fuels are described in detail and the plan also provides different scenarios on the uptake of **electromobility**. Electromobility and the underpinning charging infrastructure are supported by the national action plan for clean mobility. It is estimated that there will be between 220,000 and 230,000 battery electric vehicles (BEVs) in use by 2030; about 6 200 charging points are planned for 2025, to be increased to 19 000 by 2030. However, with only 16.9% renewable electricity share planned for 2030, only a limited percented of the electricity use in transport can be counted as renewable. Further policies and measures include broad strategies, such as the strategic sustainable urban mobility plan or the freight transport strategy, and accompanying measures. Measures to promote the modal shift and intelligent transport systems are mentioned, but no detailed information is provided.

Czechia does not provide a quantitative target for emission reductions in the **building** sector. The plan lists a series of measures for the sector that are linked to the long-term renovation strategy. Investments in improvements in the energy performance of single-family and apartment buildings are to be supported through a subsidy programme, the New Green Savings programme and its successor programme respectively, financed by the proceeds from the auctioning of ETS emission allowances. Further programmes detailed in Annex II to the plan include support to improve energy efficiency in public buildings, services and industry.

The plan includes contributions and some possible measures both in the product use and **fluorinated gas** sector (EU-level policies) and in the **waste** sector. In the former sector, however, decreasing use of fluorinated gases is considered only in relation to existing measures. No consideration is given to the impact that additional measures could have on fluorinated gases.

The plan considers **LULUCF and agriculture** in Czechia, including policies and measures in the two sectors. It describes several existing measures in **agriculture** that are also relevant to LULUCF and renewables, and which are supported by the Czech Rural Development Programme. These includes biogas plants, land management for better nitrogen retention and organic farming. In addition, for **forestry**, the plan addresses subsidies for afforestation of agricultural land, support for preventing damage of forests, increase wood and wood product consumption. Specific attention will be given to more resilient forest management, better adapted to changing environmental conditions.

The plan acknowledges the country's vulnerability to climate change and the relevance of climate resilience to achieving mitigation objectives. It refers to Czechia's **adaptation** strategy (approved in October 2015) and highlights adaptation in terms of objectives, priority actions and tasks. The following are identified as priority areas expected to be most affected by climate change: forestry, agriculture, the water regime and water management, urbanised landscapes, biodiversity and ecosystem services, health and hygiene, tourism, transport, industry and energy, emergencies and protection for the population and the environment. The interactions between biodiversity and climate adaptation are well raised. Although the adaptation goals are mentioned in Section 3.1.3, they are not stated in Chapter 2.1, where objectives and targets under the decarbonisation dimension, including adaptation goals, should normally be listed.

Czechia notified its long-term strategy to the Commission on 20 December 2019. It outlines trajectories for a shift towards a low-carbon economy by 2050, with an indicative target of an 80% reduction in GHG emissions compared to 1990, excluding the natural sinks. The long-term strategy addresses most of the elements required by Article 15 of the Governance Regulation, but does not present any specific objectives for sectoral emission reductions.

Renewable energy sources

The plan specifies the national contribution to the 2030 EU renewable energy target. The **renewable share** is set at 22% of gross final energy consumption by 2030. This is considered unambitious, as it is below the share of 23% by 2030 resulting from the formula in Annex II to the Governance Regulation. The final plan includes an indicative trajectory with 17% by 2022, 18.7% by 2025 and 19.9% by 2027, which reaches all the reference points of the stated contribution¹⁵.

The Czech authorities have announced a revision of the renewable energy law, but admit that the revised version will not be adopted for another year or two. The authorities describe several possible measures, including tariff support for small-scale renewable energy supply, auctions for renewables, new support schemes for sectoral targets, renewables in heating and cooling, and bio-methane. No support is currently provided for new RES installations above 10 kW (non-bioenergy). These measures are not sufficiently detailed, nor are their impacts quantified to a sufficient extent to make it possible to assess whether they will suffice to turn around the current stagnation in renewables, especially as no mention is made of any additional measures to be introduced in the first few years of the coming decade. Nor is there any budgetary information. This makes it difficult to assess whether the measures concerned are sufficient, i.e. whether they will meet the objectives set for 2030 as regards PV, wind electricity, geothermal electricity (in which there is no existing capacity) and heat, or the relatively ambitious share of advanced biofuels.

The national energy and climate plan does not include a forward-looking auction schedule. It announces tendering bonuses for up to 1 MW for photovoltaics and up to 6 MW for wind, but does not specify the level. Moreover, the bonus will apply only once new legislation is adopted. It thus seems questionable whether Czechia will improve an investment climate that is still hampered by past retroactive changes in financing.

Czechia aims to cover 16.9% of its **electricity** consumption from renewable sources by 2030. This corresponds to a 3.3% increase over the coming decade, compared with a doubling of the renewable electricity share between 2010 and 2020, and thus represents a significant slowdown at a time when the key technologies, wind and solar energy, have reached cost parity. It is envisaged that the increase will come mainly from solar energy, followed by wind and biogas. In view of the role electricity could play in cost-effectively decarbonising the heating and cooling sector and the transport sector, and the Czech NECP's heavy reliance on large-scale biomass heating, the targeted increase in electricity from renewables is low.

In **heating and cooling**, Czechia plans to increase the share of energy from renewable sources by 1.0 percentage points annually, without counting waste heat. This is below the indicative 1.1 percentage points calculated as annual averages for 2021-2025 and 2026-2030 respectively. The justification Czechia provides for this is the large existing share of renewables in heating (20%), and the lack of scope to further increase the share of bioenergy without negative environmental impacts and scarcities in other sectors. However, the national plan provides for significant increases in biomass combustion up to 2030. The heating potential of waste is not taken into consideration, though. The key policies and measures in the heating and cooling sector are green bonuses for biomass and geothermal energy. Detailed support measures are spelled out for

¹⁵ Pursuant to Article 4(a)(2) of Regulation 2018/1999.

bioenergy in heating only, so the policies and measures mentioned are considered insufficient in relation to the target. District heating is widespread in Czechia, but no comprehensive plan to decarbonise it has been developed. Nor is it listed among the plan's priorities – in contrast, for example, to securing a long-term supply of coal.

In relation to the **transport** target in the final plan, as requested in Articles 25-27 of Directive 2018/2001¹⁶, the national energy and climate plan specifies that renewables must supply 14% of energy used in transport by 2030, starting from 8.8% in 2020. It is envisaged that this increase will be achieved through renewable electricity sources, biofuels, bioethane and, to a lesser extent, hydrogen. Fiscal measures would support the blending of biofuels with petrol or diesel. Czechia will continue to meet the fuel supplier obligation. First-generation biofuels will be capped at 7% in final energy consumption. The share of advanced biofuels is expected to increase significantly from the existing zero to 40% of the transport target by 2030. However, although an increase is projected in the number of e-vehicles from 1 200 today to 217 000 by 2030, no financial incentives are detailed that could help promote such a rise. The plan only provides details of support measures for biomethane in transport. The policies and measures discussed appear to rely too much on bioenergy, at the expense of the electrification of the transport sector. Increasing bioenergy would increase pressure on land use, and would not help initiate a structural transformation of the transport sector.

Energy efficiency

The Czech national contribution to energy efficiency is set as a final energy consumption intensity of 0.157 MJ/CZK by 2030. It translates into 41.4 Mtoe (primary energy consumption) and 23.7 Mtoe (final energy consumption). The 2030 target means that final energy consumption must fall by 9.3% by 2030 compared to the business as usual scenario. The plan states that the energy efficiency scenario (WAM) represents the maximum potential for reducing energy consumption in each economic sector. In addition, Czechia has set a national target to cover 60% of its heat supply from combined heat and power by 2040.

The plan provides information on policies and measures targeting mainly buildings, industry, transport, and the public sector specifically. Grants and other financial instruments are set to contribute 44% of cumulative energy savings, voluntary agreements 32%, fiscal measures 4%, and regulatory and information/behavioural measures 20%. These policies and measures are considered broadly credible, but insufficient to meet the target. However, the plan makes provision for introducing further policy measures in future. Czechia will promote decentralised heating solutions and the use of combined heat and power.

The national energy and climate plan reports that the impacts of measures are to be notified in accordance with Article 7 of the Energy Efficiency Directive, yet the contribution of the other measures remains mostly unquantified. The methodology used to calculate energy savings, including monitoring and verification, is well described and robust, and complies with the recommended methodology.

Czechia states that the **cumulative savings** to be achieved under Article 7 of the Energy Efficiency Directive¹⁷ come to 11.03 Mtoe (462 PJ), calculated on the basis of Eurostat's final energy consumption data for 2016 and 2017. The objective will be updated to take account of the

¹⁶ 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.

¹⁷ 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.

2018 data. No exemptions have been applied. The savings will be achieved through policies that are well described in Annex II to the plan, with few issues remaining to be clarified. Czechia expects these policies to achieve savings of 7.9 Mtoe (331.4 PJ). However, the plan acknowledges that the target will not be met without further policy measures. Meeting the target may be even more difficult once some of the estimates of cumulative savings have been verified. In the light of more recent annual savings data, some of the estimated policy impacts appear overstated. Much emphasis is placed on a voluntary agreement that would achieve one third of the targeted savings, although this is backed up by the option of introducing an energy efficiency obligation scheme. Savings from the voluntary scheme are estimated in terms of theoretical potential declared by the entities concerned, and the engagement of all major relevant market actors is assumed. Furthermore, rebound effects and potential overlaps, in particular between fiscal measures and other programmes, might further hinder the attainment of the energy savings target. As the operational programmes are predicted to be late in starting, there are not expected to be any savings before 2022 at the earliest.

Attainment of the target set out in Article 7 of the Energy Efficiency Directive is linked to a total investment of CZK 524.1 billion, of which CZK 156.6 billion would come from public funds. The sources of the finance needed for investment are the EU budget, the Czech Government budget, corporate measures, and households.

Based on assumptions about the energy performance of the **buildings of the central public institutions** in 2020, Czechia has committed to achieving energy savings of 124 TJ in the non-compliant buildings of these institutions by 2030, in accordance with Article 5 of the Energy Efficiency Directive.

To address energy efficiency in the energy production sector, investment support is available for the implementation of combined heat and power, covered by both operational and national programmes.

As regards energy efficiency in buildings, the Czech plan provides some information on the expected increase in the rate and depth of building renovation. However, this information is provided only in relative terms (as percentages). Overall investment is given as CZK 153 billion in the residential sector and CZK 109 billion in the public and commercial sector. These figures are not related to square metres renovated or energy savings achieved, and more information would be needed to assess the ambition, effectiveness and feasibility of the measures. The plan presents a subsidy programme for single-family and apartment buildings and other measures targeting public buildings, services and industry. Czechia has submitted its long-term renovation strategy.¹⁸

Energy savings in the **transport** sector are expected to arise from the increased use of public transport for passengers, and of rail instead of road transport for freight. Consideration is also given to setting up low emissions zones, as supported also under the national environment programme, and the implementation of sustainable mobility plans.

Energy security

Maintaining a high level of security of supply is a priority in the transformation of the energy system. With an objective of 16.9% of renewable **electricity** system and the increasing share of

¹⁸ Czechia submitted the long-term renovation strategy pursuant to Article 2a of Directive 2010/31/EU on the Energy Performance of buildings on 16 June 2020.

domestic renewable energy towards 21% by 2030, renewables will not play a decisive role in energy security. As regards **oil and gas**, the plan describes measures relating to import dependence, promoting renewable gas (biomethane and hydrogen) production, and maintaining the role of gas storage and oil refining capacity. The 10-year development plan for the transmission system is designed to ensure security of supply (diversification of sources and transport routes of natural gas, and ensuring a robust transmission system). To overcome any bottlenecks arising from the phase-out of fossil fuels, there are plans to establish a strategic reserve. Coal would be replaced by nuclear power and to a small extent by renewables. Further integration of the electricity market is scheduled to improve the security of supply. The plan includes some cybersecurity considerations.

The planned policies and measures are considered sufficient in relation to the objectives to be achieved: they cover all sectors, take account of the impact of a changing energy mix, and identify measures to address it. The plan mentions ensuring the long-term supply of coal as a priority for the heating sector.

Internal energy market

The plan states that Czechia's **interconnectivity level** is likely to be 29.6% by 2020. This is above the EU electricity target for 2030. According to the methodology used at national level, interconnectivity will reach 44.1% by 2030. Several electricity projects of common interest are under construction, the aim being to maintain a secure supply in Czechia, with a view to increased trade in the region and an exit from the use of coal.

The plan provides a detailed overview of current **market conditions** for both gas and electricity, in particular as regards levels of competition and liquidity of markets. However, it does not seem to propose any solutions at regional level to the congestion management issue in Central Europe that would both facilitate cross-border electricity flows and ensure system security.

Objectives and targets for **market integration** were established in line with the updated national action plan on smart grids, together with a comprehensive list of projects. Relative to the draft, the final national energy and climate plan has been further developed in terms of flexibility, demand response and aggregation, with a list of specific projects (pilot, supporting and implementing projects). Policies and measures are developed up to 2030. However, the final plan does not include any policy objectives or measures associated with other aspects of the internal energy market, such as distributed generation, demand-side flexibility, or dynamic pricing contracts. The measures proposed are considered to be insufficiently developed in relation to the objectives to be achieved.

Czechia reports that a very low percentage of households suffer from **energy poverty** (2%). The plan refers to a working group on the subject tasked with developing a certified methodology to identify energy poverty and vulnerability of consumers. Apart from social or consumer protection policies, Czechia has no policies or measures specifically designed to reduce energy poverty, and no such measures are specified in the plan. The energy-saving measures do not deal with energy poverty or vulnerable consumers.

Research, innovation and competitiveness

Czechia has no aggregate objective with regard to research and innovation in the climate and energy field that readily lends itself to quantification. The national energy and climate plan refers to two main documents: the updated version of a strategy for 2016-2020, and the national research and innovation strategy for smart specialisation, to be supported by European structural

and investment funds. The latter strategy paper states that about 18% of total research development and innovation budgets should be allocated to the ‘sustainable energy and material resources’ priority.

The THETA programme for 2018-2025 supports research in the field of energy transformation. Apart from that, Czechia has no research and development target as regards energy or the energy transition. The national energy and climate plan only describes existing priorities and research programmes, but does not refer to the associated budgets. The priorities of the innovation strategy for smart specialisation relate to nuclear and renewable energies, but also to energy from fossil fuels. It is therefore impossible to determine the level of public funding for research, development and innovation in low-carbon technologies. However, the national energy and climate plan estimates the amount of public finance earmarked for energy-related research.

As regards **competitiveness**, the emphasis is on affordable energy, making the economy less energy-intensive, and managing exposure to energy imports. Measurable objectives are specified in these three areas. Low-carbon technologies are not specifically targeted. The plan states that the current state of the low-carbon technology sector and that the sector’s position in global markets lie beyond its remit.

Czech participation in the activities associated with the **strategic energy technology (SET) plan** is relatively limited and not further developed in the national plan. Czechia participates in three international working groups dealing with positive energy districts, energy efficiency in industry, and nuclear safety.

4. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

As regards policy coherence and interlinkages, the national energy and climate plan indicates that data and forecasts were provided for all Energy Union dimensions. It remains unclear, however, whether the same data and parameters were used in analysing all dimensions. Major reductions in GHG emissions are forecast in energy production and manufacturing industry. Final energy demand is projected to fall further in transport and industry, while energy consumption in households and services is projected to decline. Energy-efficiency policy measures relating to buildings are the most developed, especially those covering households and public sector buildings. Significant efficiency measures are planned for industry. The potential for improved efficiency in transport is discussed, but little detail is provided. Electrification does not play an important role in the transport sector; instead, the focus is on biogas. The development of nuclear power, considered an important energy source in Czechia’s energy transition, is intended to offset the decreasing use of coal. Interlinkages between Energy Union dimensions are mentioned for a few policies and measures, but not spelled out in detail. Overall, the description of interactions across the dimensions is limited.

Information is provided on **investment needs** and on mechanisms and funding sources to leverage investment to promote renewables, energy efficiency, infrastructure, and the transmission system. The sources of financing referred to are EU programmes, proceeds from the sale of emission allowances, and the state budget. However, the plan does not provide an overall assessment of the investment needed to achieve the objectives it specifies. Nor does it provide any information on market risks and barriers.

The final national energy and climate plan provides information on investment needs divided up by policy areas (renewables, energy efficiency, infrastructure, some research and innovation), but does not cover overall needs. The information is presented in terms of total amounts and the share of public funding. There are no details of investment needs in the field of GHG emissions

and removals, or in the area of energy security. As regards renewables, the plan refers to investments of CZK 511.2 billion. Of this, CZK 411.4 billion is current operational support for existing resources, CZK 53.5 billion is follow-up operational support for existing resources to keep them operating, and CZK 46.4 billion is support for new resources (CZK 35.1 billion for renewables, and the remainder for other supported energy sources, in particular high-efficiency cogeneration and secondary sources). CZK 524.1 billion is the total investment in energy efficiency – of which CZK 156.6 billion would come from public funds – further detailed by specific measures. These investments relate to the energy savings measures under Article 7 of the Energy Efficiency Directive. About 30% of total investment needs would thus be covered through public support, and the remainder from other public and private sources. A total of CZK 262 billion is expected to be invested in renovating buildings between 2021 and 2030. CZK 651 billion altogether would be invested in electricity infrastructure between 2021 and 2030, and about CZK 35 billion in energy transmission infrastructure in 2021-2028. Concerning research, innovation and competitiveness, CZK 5.7 billion would be available for the THETA project on energy research (in 2018-2025), of which CZK 4 billion would be public funding.

Investment needs appear to have been estimated using a bottom-up approach. However, the national energy and climate plan does not specify the methodology used.

Czechia has not provided any information about the total amount of investment it needs to implement its plan. This lack of information makes it impossible to conduct a sound analysis of investment needs, funding sources and gaps. As regards energy efficiency and renewables, there seems to be no gap between investment needs and funding. No information has been provided on sources of funding for electricity and transmission infrastructure. Czechia has not looked at investment needs and funding for the other dimensions of the Energy Union.

The main sources of public funding are provided, together with estimates of the quantities of funding involved. Most measures depend, at least partially, on financing from the European structural and investment funds (EUR 10.5 billion from the European regional development fund, EUR 6.44 billion from the cohesion fund, EUR 2.737 billion from the European social fund (2021-2027) and the EU Emissions Trading System (which would be the main source of financing for the modernisation fund and the Green Savings programme). The remaining share of investment, about 70%, is covered by other national sources, both public and private. Although still unclear what sources will be used, they will include state, regional, and municipal budgets, as well as the private sector (companies and households).

In describing fossil fuel **energy subsidies**, the plan refers to the International Energy Agency's definition. The final plan does not mention any timeline for phasing out energy subsidies, in particular for fossil fuel subsidies.

To provide for a **just and fair transition**, Czechia's final national energy and climate plan presents the RESTART programme, designed to support the restructuring of the coal regions of Ústí, Moravia-Silesia, and Karlovy Vary. Its key objective is to change the structure of the economy and provide for faster growth and regional convergence. It is based on businesses and innovation, direct investment, R&D, human resources, social stabilisation, and infrastructure and environment, for which specific action plans are being drafted. The national energy and climate plan does not examine the transition's impact on these regions in terms of social, economic and skills impacts. The coal commission, set up in mid-2019, is tasked with studying these impacts, and the results of its analysis are not yet available.

Although the plan takes some account of the **interlinkages** between the various dimensions of the Energy Union, they are still not fully examined, and neither are synergies between decarbonisation, energy security, and internal market dimensions.

On **air quality and air emissions** policy, the plan provides emission projections for the five air pollutants regulated under the National Emission reduction Commitments (NEC) Directive¹⁹, albeit without a consistent elaboration to the overall scenarios considered. The NECP however makes several useful references to the National Air Pollution Control Programme (NAPCP) developed under the NEC Directive, which foresees additional measures to reduce emissions of selected air pollutants targeting sectors of public energy generation, domestic heating, transport and agriculture. Reverse links to the NECP are also made in the NAPCP and this integration is particularly welcome.

The plan notes that the availability of **agricultural land** for the production of energy biomass will grow only slightly at best. To avoid sharply rising demand for agricultural land for energy purposes, the plan proposes focusing on efficiency of use in terms of the unit amount of energy from renewable sources in final consumption per hectare. This includes energy generated through biomethane production or biodegradable waste. The trajectories of **bioenergy demand and biomass supply** by feedstocks and origin have been estimated, as have sources of forest biomass and its impact on the **LULUCF** sink.

The plan also acknowledges issues related to **biodiversity** and the resilience of ecosystems that arise through changes in land use and climatic conditions. It recalls Czechia's **adaptation** strategy and the national action plan for adaptation to climate change, which both refer to synergies and trade-offs between climate policy and biodiversity (notably the impact of biomass production and energy use), as well as the role of ecosystem services in mitigation and adaptation.

The **circular economy** and its potential for GHG emissions reduction are very partially integrated in the final plan and not quantified. Further efforts would be welcome in future plans, in line with the most recent scientific evidence.

Energy is one of the sectors covered by the strategy on adaptation to climate change. However, the plan does not look at how climate change risks might affect energy supply, even though energy is one of the sectors covered by the adaptation strategy to which the plan refers.

Existing policies and measures to do with emergency system management and emergency prevention are being given detailed consideration. However, it lacks information about adaptation co-benefits and trade-offs for energy efficiency, such as in the thermal management of buildings.

The plan does not sufficiently identify the wider **economic and social benefits of energy efficiency** measures. While the plan takes the view that energy savings help make the energy system more flexible, it does not mention such savings as a means of reducing energy import dependency. The multiple benefits they offer are not adequately described or quantified.

The national energy and climate plan contains information on the overall **macroeconomic impact** of the planned measures, indicated by annual sectoral production in CZK, as well as the expected sectoral energy intensity (shown in graphs, not in numbers). However, it does not compare the macroeconomic impact with the baseline. The plan does not include other effects of

¹⁹ Directive (EU)2016/2284

the policies proposed, such as their social and environmental impact or their effect on employment. The impact on coal will be detailed in a different document.

There is no specific explanation of how the ‘**energy efficiency first**’ principle is applied. It has not been applied to energy security, to the internal energy market, or to the planning of future infrastructure needs.

The final national energy and climate plan fully complies with **data transparency** requirements and with the use of European statistics. Statistical data in the plan are presented in a transparent way, Eurostat data are widely used, and the sources of the data presented are specified for all tables and charts.

5. GUIDANCE ON THE IMPLEMENTATION OF THE NATIONAL ENERGY AND CLIMATE PLAN AND THE LINK TO THE RECOVERY FROM THE COVID-19 CRISIS

Czechia needs to swiftly proceed with implementing its final integrated national energy and climate plan as notified to the Commission on 22 January 2020. This section provides some guidance to Czechia for the implementation phase.

This section also addresses the link between the final plan and the efforts to recover from after the COVID-19 crisis, by pointing to possible priority climate and energy policy measures Czechia could consider when developing its national recovery and resilience plan in the context of the Recovery and Resilience Facility²⁰.

Guidance on the implementation of the national energy and climate plan

Czechia’s energy and climate plan sets a 2030 target of 14% for non-ETS greenhouse gas (GHG) emission reductions compared to 2005, in line with the provisions of the Effort Sharing Regulation. Czechia plans to reduce its effort sharing sector emissions for 2005-2030 by 12.5% under existing measures. With additional measures the binding national target of -14 % would just be attained if the LULUCF commitment is met.

The Czech contribution to the EU 2030 renewables target is not ambitious when compared to the share resulting from the formula in Annex II to the Governance Regulation, whereas the Czech contributions to the 2030 energy efficiency target are of low and modest ambition for primary and final energy consumption respectively. Czechia’s plan therefore leaves very considerable scope for further developing and stepping up policies and measures on both renewables and energy efficiency, so as to contribute more to the EU climate and energy targets and strengthen the green transition.

Czechia has committed to increasing the share of **renewables** in gross final energy consumption to 22% by 2030. Achieving a larger share of renewables in gross final energy consumption by 2030 would call for additional policies and measures to restore investor certainty. These would need to be based on more specific, detailed and forward-looking planning and auctions of the

²⁰ On 17 September 2020, the Commission has put forward the Annual Sustainable Growth Strategy 2021 (COM(2020) 575 final), as well as guidance intended to help Member States prepare and present their recovery and resilience plans in a coherent way. The guidance has no bearing on the negotiations on the proposal for a Regulation on the Recovery and Resilience Facility in the European Parliament and the Council (Commission staff working document, Guidance to Member States – Recovery and resilience plans, SWD (2020) 205 final).

renewable energy generation sources that would improve the investment climate, which is still suffering from retroactive changes. The planned support for development of on-building renewables would benefit from coherent simplification of administrative processes and of supportive grid tariffs. Currently, no support is available for large-scale renewables above 10 kW and tendering needs to be relaunched as soon as possible. To strengthen implementation capacities, Czechia would benefit from exploring the right enabling frameworks for renewable energy self-consumption and energy communities and simplified administrative and regulatory frameworks (in particular for grid connection), together with the promotion of market-based direct contracts (PPAs). The increase of renewables in the heating sector could be facilitated with more focus on the link between the modernisation and decarbonisation of district heating networks, maximising the use of waste heat, building renovation and by harnessing domestic renewable sources apart from biomass-based sources. In the other sectors, additional reforms and investments in e-mobility could allow for more ambition beyond the NECP.

On **energy efficiency**, Czechia would benefit from adopting and implementing additional policies and measures to achieve additional energy savings by 2030, covering the entire energy savings obligation under Article 7 of the Energy Efficiency Directive. New energy-saving measures would need to be implemented as soon as possible to avoid any delay in achieving such savings. Particular attention is necessary as regards voluntary agreements, as they are new, represent nearly a third of the savings expected, and require regular verification of progress. Czechia is also invited to ensure that the ‘energy efficiency first’ principle is properly implemented across all areas of the energy system, taking into account the co-benefits of energy efficiency when prioritising investments. In this context, redirecting funds away from energy efficiency programmes would need to be avoided by identifying and planning energy efficiency projects. Using the funds earmarked for the green transition to finance energy efficiency policy could also help achieve a higher level of ambition.

Improving energy efficiency in buildings has much potential for speeding up energy savings and contributing to the recovery of the economy after the COVID-19 pandemic. Building on the momentum of the ‘**renovation wave**’²¹ initiative, there is scope for Czechia to intensify efforts to improve the energy performance of the existing building stock with specific measures, targets and actions, while giving due attention to energy poverty. Energy poverty could be, among other measures, addressed through specific support to socially innovative solutions and social enterprises that work on addressing this challenge (e.g. energy-awareness campaigns, retraining unemployed as energy advisors, supporting green installations by cooperatives, buying energy-saving appliances for social enterprises to rent out). It will be important to ensure the upskilling of the workforce in the construction sector. Further support for the renovation of public and private buildings could be provided through increased public funding and by leveraging EU and national budgets with private money, combining grants, lending, guarantees and loan subsidies. Czechia would need to underpin the substantial energy-saving potential of the existing building stock by implementing the long-term renovation strategy, in accordance with Article 2a of the Energy Performance of Buildings Directive²².

As regards **energy security**, Czechia would benefit by further developing measures to support the energy security objectives, including measures ensuring system resilience and flexibility.

²¹ Communication ‘A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives’, COM(2020)662 and SWD(2020)550.

²² Czechia submitted the long-term renovation strategy in accordance with Article 2a of Directive 2010/31/EU on the Energy Performance of buildings on 16 June 2020.

Given the plans to step up the role of nuclear energy production, Czechia would also benefit from implementing a long-term strategy for diversifying the supply of nuclear fuels.

As regards the **internal energy market**, Czechia is encouraged to step up the implementation of planned objectives and targets set in the plan as regards further market integration within regional and cross-border cooperation, and for further digitalisation, smart grids and consumer engagement, including energy communities and demand flexibility supported by flexible tariffs.

Czechia would benefit from defining clear indicators to track achievement of milestones towards its **research and innovation and competitiveness** objectives. Over time, the gathering of granular research, innovation and competitiveness data will be useful to strengthen this process. Czechia would need to ensure the link with the SET plan activities undertaken. Czechia would also benefit from stronger links between the competitiveness objectives and the policies and measures to be put in place in the various sectors concerned by 2030. The Czech economy's large industrial base would benefit from a supportive environment to strengthen research, innovation and the competitiveness of the decarbonised technologies and sectors.

Czechia's energy and climate plan indicates sector-specific **investment** needs (for renewables, energy efficiency, infrastructure, and the transmission system), for the different time spans covered. About 30% of the overall investment taken into account (very approximately EUR 20 billion) is expected to come from EU structural and investment funds under the forthcoming programming period. A comprehensive assessment of overall investment needs extending over all sectors and policy areas covered by the plan is imperative if the plan is to be reliably implemented and its objectives attained.

Czechia is invited to continue ongoing efforts on **regional cooperation** with a view to intensifying exchanges and initiatives that will facilitate the implementation of its national energy and climate plan, in particular as regards relevant cross-border issues, including those in the context of the CESEC High-Level Group. Czechia is also invited to better exploit the potential of the **multilevel climate and energy dialogues** to actively engage with regional and local authorities, social partners, civil society organisations, business community, investors and other relevant stakeholders and to discuss with them the different scenarios envisaged for its energy and climate policies.

Czechia is invited to reinforce the analysis of **just and fair transition aspects**, notably by developing a more comprehensive assessment of the social, employment and skills impact of planned objectives, policies and measures, especially in coal regions and carbon-intensive industries. In addition, the country needs to ensure that measures to be mapped by the Coal Commission, and other measures to mitigate the impact of the transition, are effectively implemented. In this regard, the Just Transition Mechanism as part of the European Green Deal may provide an opportunity to intensify efforts by providing financial and technical assistance.

Czechia is encouraged to continue to carefully monitor the evolution of **energy poverty**, and accordingly respond with targeted policies and measures to the associated concerns. Czechia is encouraged to consult the Commission Recommendation of 14 October 2020 on energy poverty and its accompanying staff working document providing guidance on the definition and quantification of the number of households in energy poverty and on the EU-level support available to Member States' energy poverty policies and measures. Czechia is encouraged to translate the outcomes of the working group mapping the issue into specific measures, including legal definitions. In this regard, the momentum of the 'renovation wave' initiative of the European Green Deal provides an opportunity to intensify efforts to tackle energy poverty by

improving the energy performance of the existing building stock through specific measures and actions.

Czechia is invited to continue and update reporting on **energy subsidies** and to initiate actions to phase out subsidies, in particular for fossil fuels. The green transition in Czechia would receive a further boost from rapid phase-out of the fossil fuel subsidies identified in the NECP and recent Commission analyses. This would involve the further development and implementation of specific plans with associated timelines, coupled with measures to mitigate the risk of households' energy poverty.

For all investments implementing the national energy and climate plan, Czechia is invited to ensure these are in line with national, regional or local plans for **air pollution** reduction, such as the National Air Pollution Control Programme (NAPCP), and relevant air quality management plans.

In implementing its plan, Czechia is invited to make the **best possible use of the various funding sources available**, combining scaled-up public financing at all levels (national and local, as well as EU funding) and leveraging and crowding in private financing. Tables 1 and 2 of Annex I provide an overview of EU funding sources which should be available to Czechia during the forthcoming multiannual financing period (2021-2027), and EU funding addressed to all Member States and companies. For the forthcoming period, the European Council has committed to the mainstreaming of climate action into all EU programmes and instruments and to an overall target of at least 30% of EU funding to support climate objectives. At the same time, EU expenditure should be consistent with the Paris Agreement and the 'do no harm' principle of the European Green Deal. At EU level, funding will be available for Czechia from the Innovation Fund and the Modernisation Fund, and will also be based on revenues from the auctioning of allowances under the EU Emissions Trading System.

Link to the recovery from the COVID-19 crisis

The vast majority of Member States' final national energy and climate plans were drafted before the COVID-19 crisis, and the present Staff Working Document assesses Czechia's plan in that context. Nevertheless, the implementation of Czechia's final integrated national energy and climate plan will need to take full account of the context of the post-COVID-19 recovery.

In the context of the Recovery and Resilience Facility, which is expected to be operational on 1 January 2021, **Czechia's final plan constitutes a strong basis for it to design climate and energy-related aspects of its national recovery and resilience plan**, and to deliver on broader European Green Deal objectives.

In particular, **mature investment projects outlined in the plan, as well as key enabling reforms that address inter alia, investment-barriers, should be frontloaded as much as possible**. The link between investments and reforms is of particular relevance for the national recovery and resilience plans, to ensure a recovery in the short to medium term and strengthening resilience in the longer term. In particular, Member States' recovery and resilience plans should effectively address the policy challenges set out in the country-specific recommendations adopted by the Council.

In addition, **the Commission strongly encourages Member States to include in their recovery and resilience plans investment and reforms in a number of ‘flagship’ areas**²³. In particular, the ‘Power up’, ‘Renovate’ and ‘Recharge and refuel’ flagships are directly related to energy and climate action and to the final national energy and climate plans. Investments and measures under the ‘Reskill and upskill’ flagship, in particular as regards green technologies, are also essential to foster the climate and energy transition in all Member States.

In turn, the Recovery and Resilience Facility will provide opportunities to accelerate Czechia’s green transition while contributing to economic recovery. In order to follow the European Council’s commitment to achieve a climate mainstreaming target of 30% for both the multiannual framework and Next Generation EU, **Czechia’s recovery and resilience plan will have to include a minimum of 37% expenditure related to climate**. Reforms and investments should effectively address the policy challenges set out in the country-specific recommendations of the European Semester, and will have to respect the principle of ‘do no harm’.

Based on Czechia’s final national energy and climate plan, and on the investment and reform priorities identified for Czechia in the European Semester, **the Commission services invite Czechia to consider, while developing its national recovery and resilience plan, the following climate and energy-related investment and reform measures:**

- Measures to promote renewables and energy efficiency to reduce dependency on coal and improve the flexibility of the grid, including by reducing administrative burdens to speed up building renovation;
- Measures increasing the roll-out of electric and hydrogen vehicles by developing charging infrastructure and alternative fuels, and tax reforms;
- Measures to promote sustainable transport infrastructure, in particular by investing into the backbone railway infrastructure and improving suburban transport networks.

The above mentioned measures are indicative in nature and not meant to be exhaustive. They aim to orient reflections in the development of the national recovery and resilience plan. They do not prejudice the position of the Commission on the actions to be proposed. This position will, inter alia, need to comply with the agreed legislative text on the Recovery and Resilience Facility.

²³ Cf. Annual Sustainable Growth Strategy 2021 (COM(2020) 575 final), pp. 9-12.

**ANNEX I: POTENTIAL FUNDING FROM EU SOURCES
TO CZECHIA, 2021-2027**

Table 1: EU funds available, 2021-2027: commitments, EUR billion

Programme	Amount	Comments
Cohesion policy funds (ERDF, ESF+, Cohesion Fund)	19.8	In current prices. Includes funding for European territorial cooperation (ETC). Does not include amounts transferred to the Connecting Europe Facility.
Common agricultural policy – European Agricultural Fund for Rural Development, and direct payments from the European Agricultural Guarantee Fund.	7.9	In current prices.
Recovery and Resilience Facility	6.7	In 2018 prices. Indicative grants envelope, sum of 2021-2022 and estimated 2023 commitments. Based on the Commission’s summer 2020 GDP forecasts.
Just Transition Fund	1.5	In 2018 prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU.
Modernisation Fund	2.8	Approximation: 7/10 of the allocations of ETS allowances to provide revenue to the Modernisation Fund tentatively allocated to Member States for 2021-2030 and assuming a carbon price of EUR 20 per tonne.
ETS auction revenue	0.6	Indicative: average of actual 2018 and 2019 auction revenues. The amounts in 2021 to 2027 will depend on the quantity and price of auctioned allowances.

Table 2: EU funds available to all Member States, 2021-2027, EUR billion

Programme	Amount	Comments
Horizon Europe	91.0	In current prices. Includes Next Generation EU credits.
InvestEU	9.1	In current prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU. Includes the InvestEU fund (budgetary guarantee to public and private investment) and the advisory hub (technical advice). Does not consider appropriations available to beneficiaries through implementing partners, such as the European Investment Bank.
Connecting Europe Facility <ul style="list-style-type: none"> • Transport • Energy 	24.1 5.8	In current prices. The commitment for transport includes the contribution transferred from the Cohesion Fund. Excludes Connecting Europe Facility Military Mobility funding for dual use infrastructure.
Recovery and Resilience Facility	360.0	In 2018 prices. Non-allocated commitments for loans. Loans for each Member State will not exceed 6.8% of its gross national income.
Technical Support Instrument	0.9	In current prices.
Programme for Environment and Climate Action (LIFE)	5.4	In current prices.
European Agricultural Fund for Rural Development	8.2	In current prices. Commitments under Next Generation EU.
Innovation Fund	140.0	Approximation: 7/10 of the allocations of ETS allowances to provide revenue to the Innovation Fund for 2021-2030 and assuming a carbon price of EUR 20 per tonne.

Note to both tables

The figures provided by programmes under the EU budget include both the proposals under the forthcoming multiannual financial framework, and the reinforcement of these under the Next Generation EU instrument outside the EU budget.

The figures quoted in this document are based on the conclusions of the European Council of 17-21 July 2020. They however do not prejudice the outcome of the ongoing discussions between the European Parliament and the Council on the elements of the recovery package, such as the Multiannual Financial Framework, the sectoral programmes, their structure and budgetary envelopes, which will be concluded in accordance with their respective adoption procedure.

For most of the above funds, support to the climate and energy transition is one objective among others. However, for the forthcoming period, the European Council has committed to the mainstreaming of climate action into all EU programmes and instruments and to an overall target of at least 30% of EU funding to support climate objectives. EU expenditure should also be consistent with the Paris Agreement and the 'do no harm' principle of the European Green Deal.

Some of the programmes listed in Table 2 provide funding through open calls to companies, not public administrations.

ANNEX II – DETAILED ASSESSMENT OF HOW COMMISSION RECOMMENDATIONS²⁴ HAVE BEEN ADDRESSED

Recommendations		Assessment	
Decarbonisation – GHG	No recommendation	n.a.	-
Decarbonisation - renewables	Increase the level of ambition for 2030 to a renewable energy share of at least 23 % as Czechia's contribution to the Union's 2030 target for renewable energy, as indicated by the formula in Annex II under Regulation (EU) 2018/1999. Include an indicative trajectory in the final plan that reaches all the reference points pursuant to Article 4(a)(2) of Regulation (EU) 2018/1999 in accordance with that share, in view of the need to increase the level of efforts for reaching this target collectively.	Partially addressed	Although Czechia has increased its contribution to the EU renewables target from 20.8% to 22% as a share of gross final consumption by 2030, this contribution is still below the 23% by 2030 that results from the formula set out in Annex II to the Governance Regulation. The NECP does give a reason for remaining below the Commission’s recommended contribution. The indicative trajectory to reach the 2030 contribution is set out for all the years between 2021 and 2030, with an indicative trajectory reaching the reference points of 18% by 2022, 43% by 2025 and 65% by 2027. (The final plan includes an indicative trajectory with 17% by 2022, 18.7% by 2025 and 19.9% by 2027.) The estimated trajectories for the sectorial share of renewable energy technologies to achieve the overall sectoral trajectories for renewable energy from 2021 to 2030 and sector are provided in yearly steps and in absolute values.
	Put forward detailed and quantified policies and measures that are in line with the obligations laid down in Directive (EU) 2018/2001 of the European Parliament and Council (8), to	Partially addressed	The main policy announced is the revision of the renewable energy law, which is expected to be adopted in one to two years. This will delay the effect of the measures it contains. Details of other policies

²⁴ Commission Recommendation of 18 June 2019 on the draft integrated national energy and climate plan of Czechia covering the period 2021-2030 ([2019/C 297/03](#)), OJ C 297, 3.9.2019, p. 9.

	enable a timely and cost-effective achievement of this contribution.		have been added, but the descriptions and impact assessments of these policies are not such as to enable a full assessment of whether the measures concerned can meet their objectives, whether the budget is adequate, or whether sufficient resources are available to cover the budget.
	Increase the level of ambition in the heating and cooling sector to meet the indicative target included in Article 23 of Directive (EU) 2018/2001.	Partially addressed	The target has been increased from 0.8 to 1.0 percentage points of the annual increase in renewables in the heating and cooling sector. However, the figure remains below the obligatory 1.1 percentage points (without use of waste heat). The measures described in the NECP are limited. District heating is missing from among the priorities.
	Put forward measures to meet the transport target set in Czechia's plan in line with Article 25 of Directive (EU) 2018/2001.	Largely addressed	The measures to promote the renewable transport target are included in the proposed amendment to Act No. 165/2012 Coll., on supported energy sources, which sets out a support scheme for renewable and/or supported renewable sources after 2020. Fiscal measures are also included to support the blending of biofuels with petrol or diesel. Czechia plans to lay down mandatory percentages of renewables in national legislation and will implement measures to promote the development of the market for vehicles running on alternative fuels. However, the deadline for transposing the relevant provisions into national legislation is 30 June 2021, so there is still some time to go. An additional problem is the age of the Czech vehicle fleet, which averaged 14.75 years in 2018. Moreover, failure to introduce sufficient support has resulted in a slow and uncertain renewal rate.
	Include measures to reduce administrative burden and related to the enabling frameworks for renewable self-consumption and renewable energy communities, in line with Articles 21 and 22 of Directive (EU) 2018/2001.	Partially addressed	The NECP announces that the transposition will contain legislative, non-legislative and financial measures to support Communities that produce energy from renewable sources and self-consumption of renewables. However, the plan does not include any specific measures. It provides no detailed information about plans to reduce administrative burden in permitting, authorisation and network charging. It also lacks information about power purchase agreements.

Energy efficiency	Increase its ambition towards reducing primary energy consumption in view of the need to increase the level of efforts to reach the Union's 2030 energy efficiency target.	Not addressed	Czechia does not plan to increase its ambition in the area of energy efficiency. This is because of necessary investments going beyond the ones needed to meet the target set in Art. 7 of the Energy Efficiency Directive.
	Support it with policies and measures that would deliver additional energy savings by 2030. Better identify the policies and measures which are planned to be adopted in the period 2021-2030, also based on the assessment of their expected impacts.	Partially addressed	In the final NECP, policies and measures relating to Art. 7 of the Energy Efficiency Directive are listed in Annex 4. The information provided on the renovation of the building stock has been improved, but remains limited. The long-term renovation strategy was notified to the Commission on 16 June 2020.
Energy security	Include projections for the future energy mix, including renewable sources of gas, and planned measures in the area of resilience of the energy system, demand side measures, cybersecurity and critical infrastructure.	Partially addressed	The final plan includes measures to improve diversification and prevent existing levels of energy dependency from worsening. It now also describes measures to make the energy system more flexible overall. However, most of these measures lack specific timelines for implementation.
	Provide more detailed policies and measures aiming at increase of the diversification natural gas supply from third countries.	Partially addressed	The level of development of the gas system, together with access to gas hubs with diversified supply, ensures increased diversification of supply sources.
	In addition, specify the measures supporting the energy security objectives on diversification and reduction of energy dependency, including measures ensuring flexibility and the long-term supply of nuclear materials and fuel, particularly in view of the development of the nuclear generation capacity.	Partially addressed	Measures to support overall energy security, diversification and the resilience of the energy system are identified. Nuclear energy is accorded an important role, replacing coal and lignite in the energy mix.
Internal energy market	Define forward-looking objectives and targets concerning market integration, in particular well defined new and planned measures. Set out the potential of renewable gases.	Largely addressed	The final plan provides more details of the potential offered by renewable gases. It also refers to the existence of assessments of specific legislative measures designed to develop competition. However, for administrative reasons these are not included in the plan.
	Include in the final plan an overall assessment of existing and future measures related to the development of competition.	Largely addressed	The final plan outlines electricity market reforms better. It also promotes the participation of all resources, and better integration of renewables, and promotes an active role and protection for prosumers and consumers.
Research innovation and competitiveness	Further clarify their national objectives and funding targets in research, innovation and competitiveness, specifically related to the Energy Union, to be achieved between now and 2030,	Partially addressed	There are several national documents that include relevant areas where R&I objectives are defined. However, these objectives do not have a specific timeline or quantified targets, nor are they supported

	so that they are readily measurable and fit for purpose to support the implementation of targets in the other dimensions of the integrated national energy and climate plan.		by specific policies or measures. For this reason, the Commission takes the view that R&I efforts are only partly addressed. No specific or measurable objectives have been defined as regards competitiveness.
	Underpin such objectives with specific and adequate policies and measures, including those to be developed in cooperation with other Member States, such as the European Strategic Energy Technology Plan.	Partially addressed	Cooperation with the SET plan is mentioned, but no reference is made to appropriate policies or measures to be developed in this context.
Regional cooperation	Continue the already excellent approach to regional cooperation in the framework of the Visegrad Group involving Czechia, Hungary, Poland and Slovakia, as well as bilateral dialogues with other Member States. Such cooperation could include topics such as further integration in the internal energy market, measures related to assessing system adequacy in light of the planned continuation of a capacity market, just transition, decarbonisation and further renewables deployment, including resulting impacts on the energy system and cross-border electricity trade.	Partially addressed	Czechia has consulted neighbouring Member States (bilaterally or as part of cooperation within the Visegrad group) in the course of drafting the NECP. Opportunities for further cooperation have been discussed, although no information is available on any specific decisions or measures for cooperation. The discussion has consistently been conducted at a high level. Czechia states clearly that it does not favour setting up a regional platform for cooperation on the NECP. Rather, it prefers to take a bottom-up approach based on bilateral and multilateral cooperation groups set up to discuss specific individual issues. In the final plan, Czechia has added information on cooperation in the field of renewables. However, it only states that it is open to implementing certain measures if needed (statistical transfer/ opening up support schemes to foreign producers). A chapter has been added on the impacts of planned policies on other Member States, but it remains vague and does not identify any negative impacts. No further information has been provided on cooperation in other dimensions highlighted in the Commission recommendation.
Investments and funding sources	Extend its analysis of investment needs and sources, including appropriate financing at national, regional and Union level, which is currently provided for specific policies, to a general overview of investment needs to reach its energy and climate objectives.	Partially addressed	The areas considered are renewables, energy efficiency, infrastructure, and the transmission system, but there is no general overview of investment needs and funding. Issues such as transport are not covered. Funding sources discussed cover EU funds and funding from the state budget. Concerning cohesion policy, the plan estimates the potential overall allocation for the next programming period by fund (totalling about EUR 20.02 billion).
	Consider also the cost-effective generation of transfers to other Member States under Regulation (EU) 2018/842 of the	Fully addressed	So far, Czechia is not planning to use the cost-effective generation of transfers of GHG savings to other Member States, but maintains

	European Parliament and Council (9) as funding source.		the possibility of both positive and negative transfers linked to the share of renewables.
Energy subsidies	List all energy subsidies	Largely addressed	The final plan lists subsidies for renewables, energy efficiency and fossil fuels. The list is largely in line with the categories of subsidies identified in recent Commission analyses of energy subsidies.
	List in particular fossil fuel subsidies	Largely addressed	The final plan lists fossil fuel subsidies. The list is largely in line with the categories of subsidies identified in recent Commission analyses of energy subsidies.
	List actions undertaken as well as plans to phase them out.	Not addressed	The plan does not include any actions or plans to phase out energy subsidies. It states that Czechia does not intend to systematically phase out energy subsidies that are key to meeting the EU 2030 ambitions on climate protection, reducing air pollution, increasing the share of renewable energy sources and improving energy performance. Actions and timelines to phase out fossil fuel subsidies are not included in the plan.
Air quality	Complement the analysis of the interactions with air quality and air emissions policy presenting the impacts on air pollution for the various scenarios providing underpinning air pollutant projections and considering synergies and trade-off effects.	Largely addressed	<p>The complementing of the analysis of the interactions with air quality and air emissions policy has been fully addressed, notably in part 4.2.1 (iii) of the plan.</p> <p>The quantification of the impacts on air pollution for the various scenarios is only addressed only for a subset of scenarios in Table 76.</p> <p>Notably emissions until 2030 of five polluting substances are included for two scenarios (existing and additional measures respectively), albeit with no methodological information. Furthermore, the priority measures considered for these projections are not consistent with the WAM scenario of the overall plan.</p> <p>The consideration of synergies and trade-offs has been addressed, mostly through the link with air pollution in the energy sector, i.e. increased energy efficiency, phase out of coal, better use of biomass in household heating, including support scheme for replacement of stoves.</p>

Just transition and energy poverty	<p>Integrate just and fair transition aspects better, notably by providing more details on social, employment and skills impacts of planned objectives, policies and measures.</p> <p>The final integrated national energy and climate plan should particularly analyse the impact of the energy transition of the populations affected by the coal phase out or by adjustments in other energy-intensive sectors.</p> <p>Make a link to the Czech strategic framework, ReStart, promoting the just transition of the Czech coal regions.</p>	Partially addressed	<p>Specifically, the RESTART project supporting the transition of the Ústí, Moravia-Silesia, and Karlovy Vary regions is outlined. However, no impact assessment of the transition's social, employment and skills impacts is provided. The Czech authorities stress that they have had no time to conduct such an assessment, so Czechia is availing itself of the possibility provided for by Regulation (EU) 2018/1999 not to describe these impacts in detail, if this is not feasible.</p> <p>The analysis of the transition's impact on the populations affected by the coal phase-out and adjustments in other energy-intensive sectors is partially addressed. Specifically, these matters have been considered in some detail, but a more in-depth analysis is referred to the Coal Commission. Established in July 2019, this body has not yet been able to conduct the required analysis. It would also be relevant to provide a distributional impact assessment on households' income (including impact on housing costs) of the planned transition measures.</p>
	<p>Further develop the approach to addressing energy poverty issues, including by specifying the assessment as required by the Regulation (EU) 2018/1999.</p>	Partially addressed	<p>On energy poverty, the final NECP provides good background information but falls short of providing planned measures and impacts, and provides no objective for reduction of energy poverty. It underlines that Czechia has no definition of energy poverty. A contract has been launched to obtain a certified methodology for evaluating energy poverty and vulnerable consumers.</p>