EUROPEAN
COMMISSION

Brussels, 18.10.2024
SWD(2024) 850 final

COMMISSION STAFF WORKING DOCUMENT

Assessment of the draft updated National Energy and Climate Plan of Austria

Accompanying the document

COMMISSION RECOMMENDATION

on the draft updated integrated national energy and climate plan of Austria covering the period 2021-2030

{C(2024) 8100 final}

Contents

1 SUMMARY

1.1 Overview of key objectives, targets and contributions in the draft updated NECP

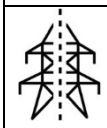
The European Green Deal, the fast-evolving geopolitical context and the energy crisis have led the EU and its Member States to accelerate the energy transition, and to set more ambitious energy and climate objectives, with a strong focus on the diversification of energy supplies. These developments are reflected in the legislative framework adopted under the 'Fit for 55' package and the REPowerEU plan.

Austria's draft updated national energy and climate plan ('the draft updated NECP' or 'the plan'), submitted on 20 August 2024, partially takes into account this new geopolitical and legislative framework.

Table 1: Summary of key objectives, targets and contributions of Austria's draft updated NECP

		2020	Progress based on latest available data	2030 national targets and contributions	Assessment of 2030 ambition level
	Binding target for greenhouse gas emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)		2021: -14.7% 2022: -19%[1]	-48%	NECP: -41.7% up to -46%
	Binding target for net greenhouse gas removals under the Regulation on Land Use, Land Use Change and Forestry (LULUCF)		Reported net removals of 4 474 $ktCO_2eq$ in 2022	- 879 $ktCO_2eq$. (additional removal target) - 5 650 $ktCO_2eq$.(total net removals)	Meets target
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	36.55% (SHARES)	2021: 36.44%	at least 57%	Austria's contribution of at least 57% is in line with the 57% required under the formula set out in Annex II to the Governance Regulation

[1] The ESR emissions for 2021 and 2022 are based on 2024 inventory reports. However, the final ESR emissions for 2021 and 2022 will only be established in 2027 after a comprehensive review.

	National contribution for energy efficiency				
	Primary energy consumption (Mtoe)	31.5 Mtoe	2022: 30.2 Mtoe	25.9 Mtoe when EED will be transposed into the national legislation	Austria's primary energy consumption contribution is 25.9 Mtoe after transposition into the national legislation. EED recast Annex I formula results: 24.9 Mtoe
	Final energy consumption (Mtoe)	25.1 Mtoe	2022: 26.3 Mtoe	22 Mtoe (21.6 Mtoe when EED will be transposed to the national legislation)	Austria's final energy consumption contribution is 22 Mtoe. (21.6 Mtoe when EED will be transposed into the national legislation). Austria's corrected contribution by the Commission: 21.6 Mtoe
	Level of electricity interconnectivity (%)	37.6%	2023: 30.3%	15%[2]	

Source: Eurostat; Austria's draft updated national energy and climate plan

1.2 Summary of the main observations[3]

Austria submitted its draft updated NECP more than 13 months after the deadline of 30 June 2023. Therefore, the European Commission had limited time to draft its assessment in this staff working document, in order to enable Austria to submit the final updated NECP as soon possible. The plan refers to the revised energy and climate targets agreed under the

[2] Calculated by the European Commission based on the ENTSO-E data (Winter Outlook 2022-2023). The 2030 level represents the general interconnectivity target of 15%. The level of ambition cannot be assessed, because the actual 2030 interconnectivity levels will depend on the implementation of the planned interconnectors and changes in the generation capacity. The 2020 figure covers also interconnectors with the neighbouring countries outside the EU.

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

Fit for 55 package and the **REPowerEU plan.** However, it does not sufficiently elaborate on how these targets will be reached.

Based on the emissions projections provided, even with implementing additional measures, Austria does not seem to be on track to achieve its **greenhouse gas (GHG) emissions reduction target under the Effort Sharing Regulation (ESR)**[4] of -48% by 2030, compared to 2005 levels. According to Austria's projections, they would underachieve by 6.3 percentage points but with measures to capture and permanently reuse or store GHG emissions from point sources in ESR industry or the elimination of counterproductive subsidies, they can reach -46%. They also plan to use EU ETS flexibility.

On the **Land Use, Land Use Change and Forestry (LULUCF) Regulation**[5], the projections in the plan indicate that Austria will meet its 2030 target. However, the plan does not set out a clear pathway to increase the land sector's contribution to the EU's overall more ambitious climate target. The plan does not provide a clear implementation timeframe, nor does it quantify the impacts of specific policies and measures. It also lacks detail on the status and progress in ensuring higher tier levels and geographically explicit datasets needed to ensure the robustness of net removal estimates.

The relevance of **circular economy** is acknowledged, and the draft plan provides details about actions, especially in the section on waste (e.g. ecodesign, compulsory repairability, refilling of plastic packages and other packaging measures, circularity on construction), though without quantifying the impact of the measures to reduce GHG emissions.

On **Carbon Capture Utilisation and Storage (CCUS)**, the plan identifies emissions that could be captured in 2040, from both ETS and non-ETS sources. However, the plan does not identify emissions that could be captured by 2030 nor does it assess the CO_2 storage capacity. Legislation to lift the existing CO_2 storage ban and enable the deployment of dedicated CO_2 transport capacity are to be developed.

The plan reflects partial progress towards **international commitments under the Paris Agreement**. Austria outlines its plans to decarbonise heating systems by 2027 (or for low-income households by 2030). No date, timeline or commitment to phase-out fossil fuel subsidies are given, although the plan refers to the need to reduce counterproductive subsidies and incentives.

Regarding **adaptation to climate change**, the plan marks remarkable progress. Compared to Austria's initial 2019 plan, which did not identify any adaptation goals, it includes climate adaptation as a horizontal policy with significant importance in achieving national climate mitigation targets. More specifically, it incorporates - albeit generally in a qualitative way – the relevant climate risks and the adaptation goals and measures of the revised Austrian

---

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

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

Strategy for Adaptation to Climate Change adopted in spring 2024, including its links with the Biodiversity strategy, which is an integral part of the adaptation strategy.

For **renewable energy**, the plan puts forward a contribution for a share of **57% of renewables in national gross final energy consumption by 2030 to the overall EU target.** This is in line with the share of 57% resulting from the formula in Annex II to Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action ('Governance Regulation'). Overall, the plan includes trajectories for renewables in the electricity, transport and heating and cooling sectors. However, the plan does not include trajectories for renewable fuels of non-biological origin (RFNBO). At the same time, the plan provides, for the most part, a comprehensive list of measures that Austria has adopted or intends to adopt to support the deployment of renewable energy in line with Directive (EU) 2018/2001 on the promotion of energy from renewable sources, as amended by Directive (EU) 2023/2413 ('revised REDII').

On **energy efficiency**, the plan is **comprehensive, informative and detailed**. The increased ambition set out in Directive (EU) 2023/1791 on energy efficiency and amending Regulation (EU) 2023/955 ('EED recast') has been taken into account only marginally, notably in revising the 2030 energy efficiency targets. The reported national contribution to the EU's 2030 energy efficiency target for final energy consumption is not in line with the corrected contribution sent to Austria by the European Commission in March 2024.The plan reflects on the '**energy efficiency first' principle**. Regarding planned measures, the plan puts forward a set of comprehensive measures addressing most of the relevant sectors, including buildings, transport and business sectors. The planned measures to comply with the energy savings obligation provide a sufficient level of detail on expected savings.

On **buildings**, the plan does not increase the ambition of the 2020 long-term renovation strategy (LTRS) but recalls some of its key elements, such as the CO_2 emission reductions milestone for 2030, 2040 and 2050. It is important to note that neither the 2020 LTRS nor the plan set milestones for energy savings in the building sector. Some measures are described in the plan with their expected impacts in terms of energy savings. The source of funding of these measures is not always specified.

On the **energy security** dimension, the plan sets out targets and policies to ensure the national security of gas, electricity and oil supply. For the **gas sector,** the plan mainly focuses on Austria's traditional role as a regional gas hub and on the development of renewable hydrogen to further diversify its gas supply, although specific measures are not always very well defined. The plan lacks a clear description of the implemented gas demand reduction measures and how they are integrated into the medium-term planning to 2030.

For the **electricity sector**, the plan aims to further expand renewable energy sources and the efficient use of energy and to further develop the electricity grid to facilitate cross-border exchanges. For the **oil sector**, the plan does not provide any quantified information on the outlook for oil consumption to 2030, any targets on decreasing oil import dependency, nor does it assess the adequacy of the oil infrastructure (refinery, oil stocks) and take into account the expected oil demand decline and the move toward lower-carbon alternatives.

On the internal energy market, the plan puts forward some policies and measures to boost electricity transmission infrastructure development including interconnections (through Projects of Common Interest and other infrastructure projects set out in the

network development plan (NEP) 2023) as well as to promote consumer empowerment (e.g. through smart metres roll-out and energy communities). The market integration will also be accompanied by initiatives to foster the development of flexibility, electricity storage and demand response. However, the draft updated NECP does not include any flexibility needs assessment, nor specific indicative targets for storage or demand response.

On **energy poverty**, the plan provides a detailed overview of the measures currently in place to protect and support both vulnerable consumers and energy poor households, both in terms of price support measures and income support schemes, as well as more structural measures, including a national coordinating body. Looking ahead, however, the plan does not contain a specific national target for reducing energy poverty.

The **research, innovation, competitiveness and skills dimension** contains qualitative targets and measures to support research, innovation and investments in clean energy technologies. While the plan outlines funding for energy research and innovation (R&I) programmes until 2026, it does not include any concrete breakdown of investments in R&I specific for the energy sector for 2030 and 2050, nor does it provide clear competitiveness targets and measures in this area, in particular for boosting investments needed for the manufacturing of key components and equipment for net-zero technologies. In addition, the plan lacks information on measures and investments to overcome the identified skills gaps apart from the ones mentioned in the TJTP (see following para.).

Just transition aspects are partially addressed in the plan. Some quantitative results on the distributional and employment related effects of the energy and climate transition are presented. The plan refers to Austria's Territorial Just Transition Plan (TJTP), which foresees investments to unlock employment in green business lines, support research and innovation projects that enable a climate and energy transition as well as re- and upskilling measures. The plan does not, however, include specific targets in areas related to the just transition such as education, employment and energy poverty. The draft plan does not provide sufficient information for the preparation of the **Social Climate plan** and how the consistency of the two plans will be ensured. As regards ETS2 auction revenues, the plan does not explain how Austria intends to comply with the rules of the revised ETS Directive, notably Articles 10(3) and 30 d(6), on revenue use.

On the **strategic alignment with other planning tools**, the plan covers the implementation of most of the measures included in the amended **Recovery and Resilience plan** ('RRP) as well as those in the new REPowerEU chapter, endorsed by the Commission and adopted by the Council on the 19 October and 9 November 2023, respectively.

The measures in the plan reflect the 2023 **European Semester country-specific recommendations**, in particular on the accelerated deployment of renewable energy, including a simplification of permitting procedures. The plan also considers lowering emissions in the transport sector, though related measures could be strengthened, and reducing Austria's reliance on fossil fuels.

The plan provides aggregate data per sector on the **main sources of financing** used to implement the planned key policies and measures. However, this is not done consistently for all individual measures. The plan is based on a quantitative **analytic basis**. The methodologies used for both projections With Existing Measures ('WEM') and With Additional Measures ('WAM') scenarios and the impact assessment of specific policies and measures are only partly explained and referenced. The energy system model that has been applied is not described.

2 PREPARATION AND SUBMISSION OF THE DRAFT UPDATED NECP

2.1 Process and structure

The draft updated NECP was notified to the European Commission on 20 August 2024, more than 13 months after the legal deadline for submission. The draft updated plan is generally well developed and follows the structure set out in the template in Annex I to the Governance Regulation. It covers all five dimensions, and includes objectives, targets or contributions, and policies and measures for each dimension.

The plan provides a good description of the interaction between different levels of government (including the local) in relation to policies and measures under various dimensions. The role of cities and local authorities is mentioned and supported particularly in relation to the phasing out of fossil fuels in district heating, sustainable mobility planning, land use planning and building planning. However, the plan does not provide information on whether Strategic Environmental Assessment has been conducted, or if Austria plans to do so.

There is also little evidence of the establishment of a multi-level energy and climate dialogue in a structured format and how public engagement will be taken care of moving forward.

2.2 Public consultation

The public participation process outlined in Austria's plan provided some space for stakeholder engagement but exhibits notable shortcomings. The involvement of the National Climate Protection Committee (KSG) is mentioned, but the plan does not clarify the Committee's composition, role, or decision-making procedures, leaving the influence and representation within this body unclear. While the plan mentions the involvement of key stakeholders and social partners, it does not demonstrate that a wide range of interest groups and ordinary members of the public were identified and encouraged to take part in the consultation. The plan does not explain whether adequate communication channels and mechanisms to notify and reach the public regarding their participation in the process of updating the plan were implemented. The plan does not describe whether the necessary information was provided on its key objectives, targets, and contributions and whether the public and stakeholders were informed of the regulatory context for the review, and the decision-making procedure followed for the update. The plan does not contain a clear and detailed summary of the comments received and if and how the public's views were taken into account and addressed.

All Länder, as well as the Association of Cities and Municipalities, have been consulted on the plan and have submitted their positions. However, the plan does not describe if and how these positions were taken into account. The plan also describes climate neutrality in cities as a prominent aspect for research and innovation.

2.3 Regional consultations for preparing the draft updated NECP

There have been consultations with neighbouring countries (Slovenia, Italy, Croatia, Hungary and Czechia) for the preparation of the draft updated NECP. However, the plan fails to summarise the main outcomes or explain the scope and procedural aspects of these consultations.

Austria's regional collaboration with Germany is focused on electricity markets, security of supply, flexibility, energy efficiency and decarbonisation, as reflected in the joint chapter of the Pentalateral Energy Forum (including Austria, Belgium, the Netherlands, Luxembourg, Germany, France and Switzerland).

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

3.1 Decarbonisation dimension

3.1.1 Greenhouse gas emissions, removals and storage

The plan fully embeds the new and revised climate targets included in the Effort Sharing Regulation and LULUCF Regulation, as part of the Fit for 55 legislative package.

Austria has committed to achieve **climate neutrality** by 2040. The draft updated plan shows concrete pathways to 2030 and 2050 and includes emission projections to 2050 under both the WEM and WAM scenarios. The WAM projections are new since in March 2023 Austria did not submit projections 'with additional measures'. On additional measures, GHG emissions (excluding LULUCF) of 24.9 million tonnes of CO_2 equivalent are projected in 2050, translating to a reduction of 68.5% compared to 1990. Net GHG emissions (including LULUCF) are estimated to total 22.4 million tonnes of CO_2 equivalent in 2050, equating to a 66.8% reduction compared to 1990. However, a large discrepancy remains between Austria's 2040 climate neutrality target and its submitted projections. How this national target might be achieved remains very unclear.

In December 2023, based on the Climate Law assessment[6], the Commission issued specific recommendations on climate neutrality to Austria[7], urging Austria to step up climate mitigation efforts, by making tangible progress on the existing and planned policies and consider additional, urgent measures to align the expected GHG emission reductions and projections with the climate-neutrality objective. On 18 June, Austria replied to the Commission listing recent measures taken by the government to mitigate climate change, including CO_2 pricing introduced in October 2022 for all fossil fuel consumption outside EU ETS sectors, the environmental tax reform, several measures in mobility, in renewables development, and to support a just transition. Austria also confirmed its objective to reach climate neutrality by 2040.

Further details are needed for the plan to fully reflect the required ambition under the Effort Sharing Regulation (ESR). The ESR sets Austria's 2030 ESR emissions reduction target of 48% by 2030 compared with 2005 levels. The plan projects ESR emissions to be above this target, both with existing (WEM) and with additional planned measures (WAM). Austria intends to reduce the remaining emissions by supplementing measures not reflected in their WAM. In 2021, Austria's ESR emissions exceeded the annual emission allocation (AEA) by 0.04 $MtCO_2eq$.

---

6 In accordance with Article 7(3) of the European Climate Law.

7 C(2023) 9627 final

In the WEM scenario, Austria would reach a 29.8% reduction in 2030, falling short of the target by 18.2 percentage points while in the WAM scenario they would reach a 41.7% reduction, which is still an underachievement by 6.3 percentage points.

The draft plan explains that by capturing and permanently reusing or storing GHG emissions from point sources in ESR industry and the elimination of counterproductive subsidies, Austria expects additional savings of 2.5 Mt CO2eq., which would result in an ESR emission reduction of 46% in 2030. However, no specific projects or measures with a timeline are described in the draft plan, and these additional emissions savings are not reflected in Austria's WEM or WAM emissions projections.

Member States have flexibilities under the ESR to comply with their targets. To assess whether Member States comply, the use of saved annual emissions allocations (AEAs) from previous years and, if needed, ETS flexibility are taken into account. In the plan, Austria states they intends to use ETS flexibility in 2030, which would reduce their ESR target by up to 2 percentage points. Assuming Austria uses the ETS flexibility, it would be in compliance with the ESR.

Table 2: ESR target and projections in Austria's draft updated NECP

ESR target and projections[8]					
	2030 target*	**2021 performance (inventory data) ***	**2022 performance (approximated data) ***	**2030 WEM projection***	**2030 WAM projection***
AT	-48%	-14.4%	-19.5%	-29.8%	-41.7%
EU	-40%	-14.5%	-16.9%	-27%	-32%

*Compared to the 2005 emissions as set out in Annex I of Commission Implementing Decision (EU) 2020/2126.

The plan reflects the increased ambition of the LULUCF Regulation. The projections in the plan show that Austria will achieve its 2030 target in the LULUCF sector, requiring Austria to deliver additional - 880 kt CO_2eq net removals to reach the total value of - 5 650 kt CO_2eq.

The plan describes some policies and measures to support the LULUCF sector, focusing on forestry. However, it does not provide information on the timeframe for their implementation nor, most importantly, the quantification of their mitigation impacts in terms of removals or emissions. Therefore, the plan does not set out a clear pathway to increasing the contribution of the land sector to the EU's overall enhanced climate target.

The plan does not provide information on the status and progress needed to ensure the enhancements to higher tier levels geographically explicit datasets for the monitoring, reporting and verification (MRV), in line with Regulation (EU) 2018/1999.

Overall, Austria does not clearly present how its policies and measures for the LULUCF sector will contribute to the long-term transition to climate neutrality by 2050.

---

8 The comparison between the ESR target and emission projections does not take into account the flexibilities available for Member States under the ESR to comply with their 2030 targets. The ESR emissions will be comprehensively reviewed in 2027 (for the years 2021-2025) and 2032 (for the years 2026-2030).

The plan includes measure to promote active **mobility** (walking and cycling) within the master plan for mobility 2030, with an ambitious budgetary endowment, but 'avoid' measures aiming at curbing transport demand are not clearly presented. Overall, the plan is aligned with the new Alternative Fuels Infrastructure Regulation, referring to the legislative instrument and to the upcoming revision of the national policy frameworks for alternative fuel infrastructure across transport modes. However, the plan does not detail specific measures on charging and hydrogen refuelling infrastructure. The plan refers to the deployment of sustainable aviation fuels (SAF) and inland waterway fuels for the Danube, albeit without providing further details.

Austria also presents ambitious plans for rail development, encompassing zero-emission technologies and related infrastructure in rail, and substantial incentives, fiscal measures and investments to boost modal shift towards low-carbon modes for both passengers and freight. The co-benefits of these measures for air quality are also explained.

A strong framework incentivising e-mobility is in place, but results are so far lagging compared to the ambitions for 2030 and beyond. Besides the existing measures, additional measures (e.g. on corporate cars) and funding are needed to conclude that the plan is broadly in line with the revised CO_2 standards for car[9].

On **Carbon Capture, Utilisation and Storage (CCUS)**, the plan identifies emissions that could be captured in 2040, from both ETS and non-ETS sources. According to Austria's recently published Carbon Management strategy referred in the plan, 4.4 to 12 million tonnes per year (Mtpa) of CO_2 will be captured in 2040 from industry. Additionally, 1-2 Mtpa of biogenic CO_2 are to be captured by 2040. The captured volumes will be either stored geologically or utilised. The plan, however, does not identify emissions that could be captured by 2030. It does not provide an assessment of the CO_2 storage capacity. However, it mentions that the CO_2 storage ban currently in place is to be lifted and relevant legislation will be enacted. Similarly, the plan does not refer to the deployment of dedicated CO_2 transport capacity but mentions that planning and legislation are to be developed. The Austrian Carbon Management strategy referenced throughout the plan includes actions meant to enhance cross-border cooperation in view of transport, to develop fit-for-purpose legislation and to introduce incentives to support the deployment of all parts of the value chain.

The plan pays some attention to mitigating **non-CO_2 emissions** in different sectors. In agriculture, the plan reiterates existing targets to address agricultural soils (i.e. reduction of mineral fertiliser usage by 20% by 2030 compared to the WEM scenario) as well as manure management (i.e. 30% of manure to be used for biogas and biomethane production). However, the plan does not cover methane emissions from enteric fermentation, which is by far the largest source of non-CO_2 emissions. More generally, the draft plan does not include sufficient information on policies and measures, including the quantification of their specific impact.

---

[9] An EU-level reduction per OEM of 55% for cars and 50% for vans of CO_2 emission per km by 2030; 100% reduction (only Zero-Emission Vehicles - ZEV) by 2035. Measures such as corporate cars incentives and any fiscal incentive for ZEV shall be reported.

On **waste management**, the plan lists existing measures (e.g. waste prevention; aerobic and anaerobic digestion; and review of landfill gas collection systems) to continue the declining trend of methane emissions from landfill sites.

The plan describes several **circular economy** measures (e.g. ecodesign, compulsory repairability, refilling of plastic packages and other packaging measures, circularity on construction), but their actual impact to reduce GHG emissions is not quantified.

n **F-gases**, the plan refers to EU legislation and lists several existing measures (e.g. cooperation with customs authorities to combat illegal trade; reduction of cooling demand in buildings; early phase-out of F-gases with high global warming potentials).

The **analytical basis of the plan** includes an assessment of the impact of policies and measures on the achievement of the GHG mitigation targets contained in the plan. Based on the comparison of WEM and WAM scenarios, the policies and measures proposed in the plan will allow Austria to reach its 2030 LULUCF, renewable energy and energy efficiency targets. However, the plan projects that Austria will miss its ESR target.

The plan mentions synergies between climate and health policy, as well as between digital, mobility and energy policy. However, few concrete details are provided on how, practically, synergies could be exploited across these different areas. It is not clear whether the policies will be effective and cost efficient. Their impact on competitiveness is not described in sufficient detail. A fair and just transition is considered, with changes to employment levels estimated across sectors. Estimates of future changes to income levels across the income distribution are provided graphically. Overall, the policies and measures are not described in sufficient detail in terms of their scope, timing and likely impact.

The plan reflects partial progress towards **international commitments under the Paris Agreement**. The plan reiterates the government's objective of decarbonising the heating systems and phasing out fossil fuels, including coal, from heating by 2027 (or for low-income households by 2030). However, it provides little detail on the phasing out of coal. The plan also refers to the need to reduce counterproductive subsidies and incentives, notably for transport, and to achieve the renewable energy target, as well as the need for a phase-down of unabated coal power. However, it does not provide a list of existing fossil fuel subsidies and lacks detailed measures and a timeline for the overall phasing out of fossil fuel subsidies.

3.1.2 Adaptation

The Austrian draft updated NECP has been prepared and is expected to be implemented in tandem with the national climate change adaptation strategy. Climate adaptation is presented as an integral part of the plan, which in fact includes references to it throughout the document. Except for the internal energy market dimension, the plan highlights the main relevant climate vulnerabilities and risks that may threaten the achievement of national objectives, targets and contributions, and it lists the policies and measures which are in place to address these risks.

On decarbonisation, the plan stresses the need to protect and stabilise terrestrial carbon pools and maintain ecosystem services against climate impacts. It describes both planned and implemented policies, as well as legal and financial measures to strengthen nature-based solutions and biodiversity protection and restoration measures for this purpose.

In addition, the plan highlights the growing cooling needs of buildings which may undermine long-term energy efficiency objectives. Emphasis is also placed on the need to adapt agriculture and forestry to climate change to successfully reduce emissions and strengthen the sinks in the sector. For this purpose, the plan lists all relevant measures of the Austrian adaptation strategy.

On energy security, the plan mentions potential climate risks arising from hydropower shortages during periods of low water levels and growing energy demand for cooling in summer. Again, these observations are followed by measures in the national adaptation strategy.

The interdependence between climate mitigation and adaptation is also guiding many of the objectives and measures in the research, innovation and competitiveness dimension.

Compared to Austria's initial 2019 NECP, which did not identify adaptation goals, the inclusion of the mentioned, albeit usually qualitative, adaptation goals and measures in the 2023 NECP marks therefore considerable progress.

The plan does seem to consider innovative approaches such as insurance policies and fiscal measures to address the climate protection gap, such as the development of risk-spreading tools for agriculture or the inclusion of climate risk management as an area of action in Austria' planned 'Green Finance agenda'.

3.1.3 Renewable energy

The renewable energy contribution proposed by Austria in the draft updated NECP is a share of at least 57% of Austria's national gross final consumption of energy in 2030[10]. The proposed contribution is in line with the formula set out in Annex II to the Governance Regulation. The scenarios provide yearly overall renewable energy trajectories and respective technologies, up to 2030 but not until 2040. With a view to 2040, the plan states that a RES share of 73.8% will be reached under the WAM scenario but does not explain how this is compatible with the government's goal of reaching climate neutrality. The indicative trajectory to reach the 57% contribution in 2030 is provided, including specific reference points for 2022 (renewables share of 38.1%), 2025 (43.9%) and 2027 (49%). The submitted reference point for 2022 (38.1%) reaches the trajectory (36.2%) calculated in line with the EU 2030 renewable energy target of 32%, which was in force at that time. The reference points for 2025 and 2027 are in line with the trajectory (44% and 49% respectively) calculated in line with the increased EU 2030 renewable energy target of 42.5%.

The renewable electricity generation is projected to reach 103% in 2030[11], with hydropower remaining the main source of renewable electricity (48% share and 47 TWh of production), followed by wind energy and solar PV (19.4% share respectively and 19 TWh of production). Bioenergy is expected to represent a 6.1% share and 6 TWh of production by 2030, compared with a share of 7.2% in 2020. The wind power electricity

---

10 The share of 57% is based on the WAM scenario; however, in the WAM scenario Austria projects a renewable energy share of 56.8% in gross final energy consumption in 2030. Austria states that a measure to abolish counterproductive subsidies is expected to reduce the consumption of fossil fuels and therefore to allow reaching at least 57%.

11 Austria indicates in its plan that it has set a target of 100% of electricity generated from renewable sources in total electricity consumption by 2030.

share will be roughly doubled by 2030 compared with 2020 (ca. 10%), and information is provided up until 2040. While the plan includes detailed information on support to renewable energy innovative technologies to reach the commercial stage, it does not link this information to the **innovative target for renewable energy technologies deployment** and does not explain how the target will be achieved.

For the heating and cooling sector, the share of renewable energy is expected to reach a share of 39.6% by 2025 and 53.7% by 2030. Based on the plan, this figure corresponds to an annual increase of 1.9 percentage points between 2020 and 2030, which is higher than the mandatory average annual increase of Article 23(1) the revised REDII, including indicative top-ups. However, the plan is lacking a clear description of how Austria intends to deliver this increase or description of the role of waste heat and cold and of the accounting of renewable electricity in the trajectory and its impacts on the target setting and achievement. However, the plan states that details will be set out in a national heating strategy, for which a mandate has been agreed with the federal states.

By 2040, **Austria aims to use exclusively renewable energy sources or district heating largely based on renewables**[12] for heating in buildings. The plan mentions the increase of biomass, solar thermal and ambient heat (including geothermal) for heating and district heating by 2030, as well as the continued or increased use of waste heat. Under the WAM scenario, bioenergy will remain dominant with 39 TWh in 2030, although it is projected to grow by only 11.4% compared to 2021. The use of ambient heat (including geothermal energy) by heat pumps is projected to more than double between 2021 and 2030 under the WAM scenario, reaching 15 TWh. Publicly supported district heating projects are subject to binding decarbonisation plans whereby the renewable share needs to reach 60% by 2030 and 80% by 2035. The plan does not clearly establish whether this corresponds to the target established in REDII and no information is provided on the role of waste heat and renewable electricity accounting for the calculation.

The plan does not include overall targets for the **use of renewable energy in the industry** nor for the **renewable energy share in buildings**.

In the transport sector, the share of renewable energy is projected to reach 43.1% in 2030 energy terms (taking into account multipliers). The target for the share of renewable energy in transport is set at the level of 14%. The plan includes an already set GHG reduction target in transport of 13% in 2030 at the beginning of 2023. On the transport sub-targets, the plan presents a mandatory quota for the consumption of biofuels. Other measures aim to improve energy efficiency and increase renewable electricity use in road and rail. For example, the plan refers to the extension of the 'E-Mobilitätsoffensive' for zero-emission vehicles as well as support programmes for recharging infrastructure in undersupplied regions (LADIN), for heavy duty vehicles and along the whole core road network. However, the plan lacks information on the targets for advanced biofuels and RFNBOs as well as the limitations to the contribution of conventional biofuels. The plan does not include a specific target for electric cars by 2030 albeit providing details about measures on promoting electro-mobility (both relating to vehicles and to recharging infrastructure).

---

12 District heating would have to be based on at least 80% renewable energy sources, heat from highly efficient combined heat and power plants, waste heat or a combination thereof.

The plan provides information on the targeted capacity of electrolysers of 1 GW in 2030 and sets out measures for RFNBO use in demand sectors, mostly in transport and industry. For **energy-intensive industries, the plan sets a target of replacing at least 80% of fossil-based hydrogen with renewable hydrogen** According to Austria's Hydrogen Strategy, hydrogen will play an important role in selected applications in industry such as the iron and steel industry, and the chemical industry. The plan also refers to the repurposing of the existing gas infrastructure for the transportation of hydrogen and the construction of new hydrogen infrastructure 'on demand'. The plan lays out the creation of the legislative framework for the construction, operation and permitting of hydrogen pipelines (new or converted), including technical rules for repurposing. In addition, policies and measures for the electrification and use of renewable hydrogen in land transport are included in the plan. Although the import of hydrogen is mentioned as an objective of the national hydrogen strategy, no information **regarding international partnerships** to facilitate imports of renewable hydrogen has been included.

The **policies and measures** to support the achievement of the proposed objectives and contributions for renewable energy are rather comprehensive. However, some measures lack sufficient details (i.e. scope, timeframe, and budget expected impacts) or are not yet defined in detail (e.g. national heating strategy). In the **electricity sector,** the objective is to accelerate the production of electricity from renewable energy through the use of investment aid and market premiums as well as various regulatory measures. The plan does not, however, include information on the promotion of long-term power purchase agreements. On guarantees of origin, Austria aims to enhance the current system through an extension to renewable gases that is aligned with a quota obligation. When it comes to **joint projects**, the plan lacks information on a planned cooperation framework. The plan indicates that to reflect the EU's Solar Energy Strategy, Austria has put in place increased investment aid for solar PVs (for 2023 to 2026), tax measures, as well as a match-making platform for areas for ground-mounted PV. In addition, Austria has introduced measures to simplify and accelerate permit-granting procedures for solar energy (eased rules for grid connection of small installations) and plans to implement Council Regulation (EU) 2022/2577 as amended. **Individual and collective self-consumption of renewable energy as well as renewable energy communities** are considered as a means to achieve the objectives and will be promoted through fiscal incentives for self-consumed electricity and advisory assistance for communities. However, no quantitative goals for self-consumption and for energy communities are included in the plan and details are lacking on the planned measures to promote individual and collective self-consumption as well as renewable energy communities.

The plan does not indicate if Austria has put in place a strategy on **energy system integration.** However, the plan does state that Austria intends to introduce measures to promote **demand response and storage to increase the flexibility of the electricity grid** to facilitate higher integration of renewables, through the revision of the electricity market law and based on exchanges and cooperation in the Pentalateral Forum. Austria also plans to establish a national platform for the intelligent integration of electro-mobility in electricity grids.

Measures for **renewable heating and cooling** include the extension of the ban on fossil heating based on oil and coal in new buildings to cover all fossil heating systems, extension and redesign of the financial support to replace existing fossil heating (with a particular

attention to low-income households), financial support for district heating systems, compulsory renovation under certain conditions and exemplary action by the public sector.

Other important pillars are the national CO_2 pricing system (to be integrated in the ETS2 in the course of 2027/2028), removal of regulatory barriers and qualification, as well as awareness-raising and advisory measures. The replacement of fossil gas with renewable gas in the gas network is targeted mainly at hard-to-abate sectors, including industry. Further measures are planned as part of an upcoming national heating strategy with the goal of decarbonising the heating sector by 2040 with no specific timeline. The plan provides information on measures to be implemented under Article 23(4) of the revised REDII.

On the **industry sector**, Austria intends to continue using national CO_2 pricing for industrial installations not yet covered by the EU ETS. In addition, the plan refers to financial support instruments for the decarbonisation of energy-intensive industries, including via the Recovery and Resilience Facility, the Just Transition plan and channelling additional funding through the EU Hydrogen Bank, as well as via a dialogue with industry on its transformation towards climate neutrality.

Measures to ensure **woody biomass sustainability** have been included in the plan. While projections on biomass demand per sector have been included until 2030 for the electricity, heating and transport sectors, no projections have been included for biomass supply by feedstocks and origin due to a lack of available results from the scenario used. In this regard the plan does not assess how biomass will be supplied in a sustainable manner in the long term. The importance of the cascading principle has been highlighted without mentioning specific policies to implement it. The plan does not assess the impact that bioenergy trajectories may have on LULUCF sinks, biodiversity and air quality, nor does it include the assessment of the domestic supply of forest biomass for energy purposes in 2021-2030 in line with the strengthened sustainability criteria set out in the revised REDII, and of the compatibility of the projected use of forest biomass for energy production with Austria's obligations under the revised LULUCF Regulation, particularly for 2026 to 2030. The plan does, however, set out an action to carry out these assessments.

On **biomethane**, the plan highlights a national biomethane target of 5 TWh or 0.51 bcm to be injected to the national gas grid per year by 2030, as well as an action plan and trajectory. Biomethane production is linked with Austria's ambitious target to increase the proportion of national manure fermented in biogas to 30% and streaming that biogas towards upgrading and injection to the national gas grid (the Renewables Expansion Act (EAG) with incentives and Network Infrastructure plan (BMK) with grid infrastructure). There is also support for retrofitting the existing biogas cogeneration plants to upgrade units. In 2023, a one-stop-shop, the Renewable Gases Service Point, was set up within the Austrian Energy Agency (AEA) as an independent information and advisory facility on issues relating to the production and use of renewable gases (biomethane, hydrogen, etc.). The estimated investment costs to deliver 7.5 TWh of domestically produced renewable gases (biomethane and hydrogen) by 2030 range between EUR 2.6 - 3.8 billion. Biomethane sector development serves as a good practice example to accelerate sustainable biomethane deployment (GHG emission savings from manure, digestate).

The plan emphasises spatial planning for energy infrastructure, but it does not refer explicitly to the **mapping of the areas** necessary to achieve the national contribution to the EU's renewable energy target or the designation of renewables acceleration areas and

dedicated infrastructure areas. As regards the **streamlining of administrative procedures** and time limits for granting permits, the plan refers to the recent revision of Austria's environmental impact assessment act, the planned implementation of the Council Regulation (EU) 2022/2577[13] to accelerate the deployment of renewable energy and the planning and permitting provisions in the revised REDII, and the ongoing adoption of the national law to accelerate the deployment of renewables (including a reference to a contact point for project promoters and measures related to spatial planning). The plan does not set out the human resources that are required to accelerate permitting for renewable energy projects and related infrastructure.

3.2 Energy efficiency (including buildings) dimension

Austria's contribution to the 2030 energy efficiency target is 22 Mtoe for final energy consumption according to the relevant national legislation already in force. This deviates from the corrected contribution of 21.6 Mtoe sent to Austria by the European Commission in March 2024 by 1.9%. The target for final energy consumption for 2030 is set at a 12.5% lower level as compared to the Austrian 2020 energy efficiency target. Austria did not include a contribution for primary energy consumption.

Austria stated in its draft updated NECP that the national contributions to the 2030 energy efficiency targets will be updated in the national legislation. The contributions will be revised to 21.6 Mtoe for final energy consumption and 25.9 Mtoe for primary energy consumption.

The plan estimates a target on reducing total final energy consumption of **all public bodies** by of 788 ktoe (or 91.65 GWh) and includes information regarding the measures planned by 2030 and there is not any information provided on whether public transport or armed forces are included or excluded from the estimated target. Austria opted, in line with the period 2014-2020, for the alternative approach to implement Article 6 Energy Efficiency Directive (EED) recast on the **exemplary role of public bodies' buildings**. Austria has not updated the information on the annual energy savings to be achieved corresponding to 3% of the floor area of public buildings to be renovated, with the justification that additional surveys and calculations still need to be carried out.

Austria plans a total cumulative **energy savings target** for 2021 to 2030 of 15.52 Mtoe, which is not in line with the new provisions of Article 8 EED recast on energy savings obligation. However, it plans to update the target to 17.13 Mtoe when the EED recast will be transposed into national legislation. The planned measures would deliver only 16.8 Mtoe, but Austria notes that existing measures are expected to deliver additional savings. Energy savings are consistently expressed in final energy consumption. The average minimum savings rate over the 2021-2030 period is 1.05%, but it should be at least 1.49% for 2024 to 2030 to achieve the target. For the implementation of the **energy savings obligation**, the plan opts for alternative policy measures.

Austria has specified the share (i.e. 3%) of the required cumulative end-use energy savings to be achieved among people affected by energy poverty. The policies and measures contained in the plan under the energy efficiency dimension are sufficiently described and

---

[13] Council Regulation (EU) 2022/2577 of 22 December 2022 laying down a framework to accelerate the deployment of renewable energy.

include an adequate estimation of energy savings for the alternative measures. However, the estimation of the energy consumption following the implementation of additional measures (WAM) of 24.7 Mtoe of final energy consumption and 31.6 Mtoe of primary energy consumption is significantly above the announced national contributions.

The plan covers in detail the planned measures to achieve the 2030 energy efficiency goals, with a range of measures covering all sectors. The expected final energy savings of measures contributing to the target of Article 8 EED recast on **energy savings obligation** are shown in detail. The new measures adopted after 2020 and the new planned measures to reach the higher 2030 target are well presented in the plan. The plan also mentions the **'energy efficiency first principle',** that should apply e.g. in the areas of electro-mobility, buildings and in hard-to-abate sectors, without specifying concrete measures. It is mentioned that long depreciation times for investment goods make energy efficiency prioritisation difficult. Most of the energy efficiency related measures are cross-sectoral, and the remaining ones focus on the building (residential, public, and services) and the transport sector. Measures targeting the development of district heating are included in the plan. There is potential to increase the efficiency of **power generation**.

The plan does not raise the ambition of the 2020 **long-term renovation strategy** (LTRS) but recalls some of its key elements, such as the CO_2 emission reductions milestone for 2030, 2040 and 2050. It is important to note that neither the 2020 LTRS nor the plan set milestones in terms of energy savings to be achieved in the building sector. Therefore, it is not possible to identify any increase of ambition in this regard.

The plan describes four main **measures relating to building renovations**, which were not identified in the 2020 NECP. The measures are housing, energy and environmental support from the Lander, domestic environmental support schemes, federal Remediation Plan support instrument in the housing and private business sectors with a focus on building renovation and fossil fuels phase-out, and the climate and energy fund programme. Their cumulative impact for 2021 to 2030 is equal to 8 360.3 ktoe, corresponding to the 53.9% of the total expected energy savings targeted (48.8% if the updated target is considered).

The plan also includes measures targeting energy efficiency, public procurement, and energy performance contracting. It defines effective mechanisms to promote **investments in building renovations**. An important incentive for savings contracting measures is the savings obligation under the Federal Energy Efficiency Act for federal buildings. It should be noted that for some of the measures, the plan indicates the amount of public funding without specifying the source.

3.3 Energy security dimension

Fossil fuels comprise the majority of energy supply in Austria, accounting for 67% of the energy mix in 2021, standing slightly below the EU-27 average[14]. The share has fallen only marginally over the past decade (-3 percentage points since 2011) and the plan does not provide any forecast of the evolution of this indicator towards 2030. At 32[15]**, import dependency** on non-EU countries is lower than the EU average, but Austria nonetheless imports more than half of its energy needs.

14 Eurostat data.
15 Eurostat data.

The main objectives for the energy security dimension are diversification of natural gas import routes and development of alternative sources of supply, resilience of supply chains for energy imports, strategic evolution/adaptation of national electricity, gas and hydrogen infrastructure, prevention in the area of security of supply through further measures and creation of import opportunities for renewable hydrogen and development of an appropriate hydrogen infrastructure.

Natural gas is a substantial part of both the Austrian energy and electricity mix, accounting respectively for around 23% and 18% in 2021[16]. Before Russia's war of aggression of against Ukraine, Austria was heavily dependent on Russia for its gas imports, representing around 64% in 2021[17]. The country has traditionally acted as a regional gas hub, and its security of gas supply benefits from large gas storage capacities consisting of nine facilities, representing 97.6 TWh of working volumes in September 2023. The storage volume usually exceeds national annual consumption (9.1 bcm or 89 TWh in 2022, 9.4 bcm or 92 TWh in 2021). Furthermore, in 2022, Austria introduced a 20 TWh strategic gas reserve, of which 8.5 TWh from non-Russian origin, that can be released in the event of an emergency as well as a storage obligation for gas-fired power plants. Austria also introduced an obligation to connect the Haidach storage facility to the Austrian market area. Austria produces only a small amount of natural gas domestically, covering around 10% of its annual consumption, with little potential to increase production in the short term. The draft updated NECP does not provide any forecast on the evolution of domestic gas production towards 2030.

In terms of **diversification**, the plan sets a number of targets, including at least 7.5 TWh of domestically produced renewable gases by 2030 and 1 GW electrolysis capacity to produce renewable hydrogen by 2030. For consumption, the plan sets a target of 2 TWh of hydrogen per year by 2030 (against none today) and 5 TWh of biomethane, biogas and synthetic methane per year by 2030 (against 2 TWh today); as well as target to minimise the use of fossil gas for heating and cooling by 2040. To achieve these objectives, the plan refers to the development of international partnerships for climate-neutral hydrogen and its derivatives as well as to the adaptation of existing natural gas pipelines to hydrogen pipelines (but also the construction of new hydrogen pipelines, where needed), notably through the creation of legal and technical rules. Overall, however, the plan does not provide sufficient details on the planned measures to reach these targets and to phase-out remaining Russian gas imports.

As a consequence of Russia's war of aggression against the Ukraine, Austria **reduced its gas demand** by 21% between August 2022 and May 2024, more than the -15% voluntary objective and more than the EU-27 average (-18%)[18]. The plan does not however describe the implemented gas demand reduction measures, nor does it explain how these measures are integrated in the medium-term planning towards 2030.

On the **electricity sector**, the security of supply objectives and actions of Austria are based on three pillars, which are the use of domestic resources instead of dependence on energy imports, resilient supply chain; and holistic approach to the transformation of the energy

---

16 EU energy statistical pocketbook and country datasheets (europa.eu)

17 https://economy-finance.ec.europa.eu/system/files/2023-05/AT_SWD_2023_620_en.pdf

18 DG ENER Chief Economist Team based on ESTAT NRG_CB_GASM (sub-series IC_CAL_MG subtracted by TOS) in TJ (as of 29 September 2023, 11:00).

system. More specifically, the electricity objectives in the plan include a 100% share of electricity from renewable energy sources by 2030, efficient and careful use of energy, reduced import dependency on components and technologies relevant for the energy transition and increased investments in storage infrastructure, transmission and distribution networks and generally to adapt the energy infrastructure to support the integration of renewable energy sources.

The plan also refers to **short-term objectives of reducing electricity consumption** in general and during peak times in line with the Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices. Austria adopted the Electricity Reduction Act (SVRG) as a measure to create a system to reduce gross electricity consumption at peaks, reduce energy prices and minimise fossil fuel consumption.

Moreover, on the electricity system as a whole, key policies and measures indicated in the plan for security of supply include measures related to renewable energy and **flexibility**. The plan states that a Climate and Energy Fund supports the deployment of electricity storage facilities, including in existing electricity generation facilities based on renewable sources. According to a study on storage commissioned by the European Commission, the current operational Austrian power storage capacity is around 6 705 MW (mainly pumped hydro) and one of the main barriers identified for further storage build-out was the lack of a definition of energy storage in the regulatory framework[19]. According to the plan, EUR 50 million will be made available to the further development of a programme on innovative electricity and heat storage. Other measures related to batteries, thermal storage, pumped storage, load shifting/management, demand response, etc. are mentioned but not further detailed.

The plan also includes policies and measures to develop infrastructure and ensure long-term security of supply. The ambitious target of 100% electricity from renewable energy sources by 2030 is accompanied by measures that aim to adapt and develop the electricity grid to enable the roll-out of renewables. In this regard, the plan refers to the 'Austrian Integrated Network plan' published in April 2024, which was designed to coordinate the planning of the electricity and gas network with the development of renewable energy. In addition, the plan highlights projects from the network development plan 2023, such as the Carinthia Network Room project, which aims to reinforce the transmission grid in the south and close a 380 kV ring, fostering security of supply in Carinthia, East Tyrol and Austria as a whole.

Further, according to Austria's national law, an electricity supply security strategy was supposed to be provided by mid-2023. Austria refers to the Security of Supply strategy (E-VSS) as a key measure for electricity security of supply. Besides investments in renewables, efficiency measures and the strategic planning of the grid expansion, the strategy will address flexibility instruments, while also identifying indicators and

---

[19] This figure is derived from the database which accompanied the ENTEC study on Storage funded by the European Commission and published in November 2022, by taking into account only the 'operational' facilities: https://op.europa.eu/en/publication-detail/-/publication/dfcaa78b-c217-11ed-8912-01aa75ed71a1/language-en?WT_mc_id=Searchresult&WT_ria_c=37085&WT_ria_f=3608&WT_ria_ev=search&WT_URL=https%3 A//energy.ec.europa.eu/.

monitoring processes for security of supply. The E-VSS must be updated with a 5-year interval. However, the current development status of the E-VSS is not clear from the plan. The work of the Pentalateral Energy Forum, which includes joint crisis exercises, regional resource adequacy assessments and a common framework on risk preparedness, is also indicated.

The plan does not refer to **cybersecurity**. However, it acknowledges the adverse impacts of **climate change** on electricity infrastructure and power generation. The plan says its implementation will go hand in hand with the Austrian Strategy for Climate Adaption and its action plan, which provides an assessment of the vulnerabilities of the electricity sector to climate risks, as well as recommendations, including on issues related to water stress and scarcity, although without much detail. The regular evaluation of the strategy for climate change adaptation is therefore mentioned as one of the measures for security of supply.

Oil represented about 34.5% of the energy mix[20] in 2021 and is used mostly for transport. Austria is a landlocked country dependent on the Transalpine pipeline (TAL). Domestic oil production is marginal, but crude oil imports are well diversified, with Kazakhstan, Libya and Iraq representing the top three suppliers in 2021. Austria also imports oil products, mainly from Germany, Italy, Slovenia and Slovakia, as Austria's only refinery is insufficient to cover all of Austria's national consumption. Austria maintains consistently the level of emergency oil stocks required by the oil stocks directive.

The plan announces a forthcoming update of the oil emergency plans. The plan projects that oil consumption will fall over the coming years due to the uptake of renewable energy sources and the ban of oil heating in households by 2035. Beyond this, however, the plan does not provide quantified information on the outlook for oil consumption in 2030 nor any targets related to decreasing import dependency. No assessment is provided on the adequacy of the oil infrastructure (refinery, oil stocks) with the expected oil demand decline and the move toward lower-carbon alternatives.

The plan only briefly describes **measures in the event of security of supply crisis** for electricity and for gas. In this regard, Austria submitted its National Risk Assessment, Preventive action plan, Emergency plan, as well as the Common Risk Assessments for Ukraine, Belarus, Algeria, Libya and Caspian regional risk groups. At the time of writing, they are all being assessed by the European Commission. In this regard, the plan refers to broadening the definition of both protected customers and solidarity protected customers, although without providing further details on the content of this update and whether this was reflected in the relevant plans submitted to the European Commission. Lastly, the draft updated plan also mentions the *immunisation of quantities of gas stored by companies or industrial plants of up to 50% of their consumption of the previous calendar year in the case of quantitative steering measures*. The statement is not further developed in detail, however, including in terms of practical implementations or compatibility with the EU security of supply regulatory framework.

---

20 Eurostat. Share of oil in the gross available energy.

3.4 Internal energy market dimension

On **electricity interconnectivity**, Austria achieved the 2030 electricity interconnection target of at least 15%, which will allow an efficient transmission of electricity within and across national borders. The plan states that there are direct network connections between Austria and all its neighbouring Member States except from Slovakia. Austria does not set any further explicit interconnectivity target for 2030 but will maintain the electricity interconnection above 15%.

On **energy infrastructure**, the plan includes information on electricity projects. The plan states that there are seven electricity and one smart electricity grid PCI projects on the first PCI/PMI list under the revised Regulation (EU) 2022/869 (revised TEN-E Regulation). Austria also confirms that the latest PCI/PMI list includes two hydrogen projects. Austria envisages a number of other infrastructure projects that are included in the network development plan (NEP) 2021, such as network supports, line connections and replacements, which must promote the electricity transmission and enable the grid integration of renewable energy sources.

On **hydrogen, including renewable hydrogen**, the plan points to the development of a roadmap for adapting existing natural gas pipelines to hydrogen pipelines and rebuild hydrogen pipelines on demand as well as of the necessary legal framework for the adaptation/new build of hydrogen pipelines. However, the plan does not include targets for hydrogen, and it is lacking information on infrastructure investment to enable the penetration of hydrogen to the market, and in particular in a cross-border perspective, as well as planned timeline to deploy these infrastructures.

With regard to the increase of the renewable energy target, and the need to enable consumers to rapidly reap the benefits of renewables, the plan provides some objectives such as further developing network charges, increasing system flexibility, and removing barriers to cross-border trade in electricity, though, without providing specific measures and policies to achieve them. Moreover, the plan does not indicate specific measures to accelerate the **deployment of electricity storage**, nor to engage the system operators in facilitating the penetration of flexibility services. The plan does not sufficiently elaborate on the quantification of flexibility needs, nor does it set clear targets and objectives for demand response, storage and flexibility. Additional policies and measures are missing to boost flexibility and enable a non-discriminatory participation of new flexibility services.

On **consumer empowerment**, the plan sets a target of 95% of all households being equipped with smart metres by the end of 2024 (originally by end of 2022). It furthermore highlights the easy and low-threshold access to energy exchange via new market roles such as energy communities or active customers, ensuring the affordability of housing and energy, protection and empowerment of consumers, and decoupling end-customer prices from wholesale market volatility, while not setting out specific targets.

On **energy poverty**, the plan identifies that 6.5% of all households are in or at risk of energy poverty based on indicators suggested by the Austrian government, in coherence with the EU statistics on income and living conditions (EU-SILC[21] as well as the

[21] https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions.

Commission Recommendation on energy poverty[22]. The plan also provides a good analysis supporting the basis for arriving at this number. While energy poverty is mentioned as a cross-cutting issue for all intervention areas, the plan fails to establish a national objective to reduce energy poverty. It nevertheless details well the policies and measures addressing energy poverty, focusing on promoting affordability, and confirming the need for effective long-term investments in Austria's building stock as the main structural intervention area.

3.5 Research, innovation, competitiveness and skills dimension

3.5.1 Research and innovation

Austria's plan includes **national objectives** for research and innovation (R&I) in clean energy technologies in the short-to-medium term (until 2026) only. Austria structures its research and innovation (R&I) measures around four main research missions: energy transition, mobility transition, circular economy and climate neutral city. Austria plans to allocate EUR 330 million for these four missions (2024-2026) and EUR 390 million for R&I in energy, mobility and climate neutrality channelled through the Climate and Energy Fund, including EUR 210 million for the new initiative on climate neutral industry (2023-2026). In addition, between 2023-2026, as part of the Climate and Transformation Plan, EUR 600 million will be made available for the sustainable transformation of the business location (through research and technology development support, location and investment support, and training measures).

This represents an absolute value of EUR 1 320 million (2023-2026) in planned energy, mobility and climate **R&I spending** (excluding substantial spending linked to Important Projects of Common European Interest (IPCEIs)). The plan does not specifically detail the split between public and private funds. Austria reports that public spending on energy research, development and demonstration projects amounted to EUR 224.1 million in 2021, an increase of 44.4% compared to 2020. While this upward trend is positively noted, the draft NECP does not set a detailed ambition for energy R&I spending for 2030 and 2050.

Overall, the plan identifies relevant areas where R&I efforts are needed. However, it does not provide quantitative **targets** for R&I for 2030 and 2050, for instance as annual spending on R&I related to clean energy and climate technologies. Moreover, the plan does not describe supporting measures in a measurable way, nor does it provide timelines or detailed funding and investment plans beyond 2026, making it difficult to establish how the measures help Austria achieve its R&I policy objectives. Austria pro-actively contributes to 5 out of 10 **SET plan** actions and connections with the SET plan are well explained.

There is already good **regional cooperation** taking place between Austria and other EU Member States. The plan further develops the potential for regional cooperation in energy, mobility and climate R&I through Austria's participation and involvement in the SET plan, the Clean Energy Transition Partnership, European Technology and Innovation Platforms, the Driving Urban Transition Partnership, and Horizon Europe. It also lays out the important cooperation and the substantial funding in the context of three IPCEIs on

[22] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020.1563.

batteries, hydrogen and photovoltaic. Austria also participates in Mission Innovation and the International Energy Agency technology collaboration programmes.

3.5.2 Competitiveness

The plan does not provide clear information on targets, objectives and actions to support the competitiveness of the energy and clean technologies sectors. Apart from the description of some short-term measures, Austria has not provided information about long-term plans concerning competitiveness in particular for the manufacturing of net-zero components and equipment. Through the circular economy and production research mission, Austria integrates the notions of recyclability and circularity and the need to reduce dependency, and effectively diversify the sourcing of imported raw materials and components required to manufacture clean energy technologies. The plan also describes several measures related to circular economy and aligned with the waste hierarchy which can have a positive effect on competitiveness.

Austria has not provided information on measures and investments related to the **digitalisation** of the Energy System EU action plan to make their energy system more digital.

3.5.3 Skills

The plan acknowledges the importance of addressing skills shortages for the development of strategic sectors and the transition to a competitive economy, particularly in regions structurally affected by the impacts of the transition. There are concrete examples of retraining programmes carried out by the social partner-affiliated Environmental Foundation and the Federal Ministry of Labour and Economy.

The plan mentions developing skills for future needs under the Research Mission Energy Transition and Mission Climate Neutral City. Nevertheless, it does not provide sufficient information on skills gaps, nor does it include detailed measures and investments to overcome them and to boost European competitiveness in clean energy technologies, equipment and components (skills development required for the clean energy transition, connecting for instance with relevant European Year of Skills initiatives, Pact for Skills large-scale partnerships, New Innovation agenda).

4 A FAIR AND JUST TRANSITION

The plan partially addresses just transition aspects. It includes national, regional and sectoral strategies to address the impacts of the transition away from fossil fuels, both for carbon intensive industries and households. The distributional impacts are presented by income groups. Employment impacts are provided for a selection of sectors most directly affected by the climate transition. The plan does not quantify in detail, the social, employment and skills related effects of climate and energy transition (or specific impacts on vulnerable groups).

The measures to preserve quality employment, address access to quality, affordable and inclusive education, training, (re)skilling programmes and life-long learning linked with green transition are presented, e.g. a professional recruitment initiative in the transport sector and a specific programme to encourage women undertake non-traditional training.

The plan does not provide sufficient information on the preparation of the social climate plan, as assessed in Section 7.

The Just Transition Fund (JTF) is described as a funding source in regions with the greatest transition challenges, but the plan barely mentions the regional or local socio-economic impacts of the climate and energy transition. The plan refers to the Territorial Just Transition plan (TJTP), which envisages investments to unlock employment in green business lines, support research and innovation projects that enable a climate and energy transition as well as re- and upskilling measures.

The plan does not elaborate on the resources specifically allocated to supporting the just transition.

5 REGIONAL COOPERATION

Austria takes note of the good collaboration in the Pentalateral Energy Forum concerning the work related to the NECPs, on security of supply, risk preparedness, market integration, flexibility, energy efficiency and hydrogen – to name a few. Such voluntary cooperation among countries is welcome. Austria is also a member of the High-Level Group of Central and South-Eastern Europe Energy Connectivity (CESEC)[23]. Austria's active involvement in CESEC remains crucial for decarbonisation, security of supply, market integration, but the outcome of the collaboration in the High-Level Group is missing from the NECP. Austria's presence in Penta and CESEC gives the Member State a unique role as the link between the two groups, contributing to cross-fertilisation of expertise and experiences. An example for this could be the area of regional cooperation in renewables, which is emphasised as an important area of cooperation in Penta in the NECP and hydrogen: the ongoing expansion of the scope of the CESEC action plans will allow the High-level Group to strengthen regional cooperation in renewables and the integration of hydrogen in networks.

Austria has signed two solidarity agreements for the security of gas supply with Germany and Italy, out of the six needed (the remaining ones are with Hungary, Slovakia, Czechia and Slovenia).

6 INTERNAL COHERENCE AND POLICY INTERACTIONS WITHIN THE DRAFT UPDATE NECP

The plan reflects key synergies within and between the five dimensions of the Energy Union. This includes the impact of increasing flexibility and demand response measures on the penetration of renewable energy, as well as measures on energy efficiency and GHG emissions. Similarly, the interaction of electrification as a key element to decarbonise the industry, mobility and building sectors is directly related to the deployment of renewable sources. For instance, the development of a national hydrogen strategy is highlighted as a

---

[23] Four high-level groups have been set up by the European Commission to provide strategic steering and policy guidance on regulatory and infrastructure development and to monitor progress of projects of common interest in priority regions. They include: The North Seas Energy Cooperation (NSEC); Interconnections for South-West Europe; Baltic Energy Market Interconnection Plan (BEMIP); Central and South-Eastern Europe energy connectivity (CESEC).

critical component that must align with broader European strategies to ensure consistency and avoid stranded investments.

However, the plan acknowledges the need for more detailed analysis and quantitative assessments of policy interactions to ensure they are aligned and mutually reinforcing. Specifically, the plan calls for a better understanding of how energy efficiency measures influence the overall energy system's sizing, thereby reducing the risk of stranded investments in energy supply infrastructure. In this regard, the updated plan did not provide detailed analysis of consistency of policies and measures in each dimension and a quantitative analysis of interactions of certain objectives.

7 STRATEGIC ALIGNMENT WITH OTHER PLANNING INSTRUMENTS

Austria formally submitted **a modified Recovery and Resilience Plan (RRP)** and **REPowerEU chapter** on 14 July 2023. The revision touches upon 14 measures of the existing RRP, including most of the energy-related measures in the plan. Moreover, Austria has submitted two proposals of investments (photovoltaic systems and a scale-up of one existing investment related to zero-emission commercial vehicles and infrastructure) and two proposals of reforms for the REPowerEU chapter (on accelerating permitting procedures for renewables and on promoting hydrogen as a key technology for climate neutrality). The plan mentions the REPowerEU Chapter and the amended RRP on several occasions, although in some cases, the consistency between the plan and RRP is only vague.

The plan incorporates the main reforms and investments included in the **RRP** connected to the objectives, targets and contributions, with the exception of the ones related to investments in cultural businesses, and the biodiversity fund. The construction of new railway lines and electrification of regional railways are mentioned in the plan, but with no reference to the specific investments in the RRP. The plan includes 20 out of the 30 climate relevant measures in the RRP (i.e. 8 measures with 40% and 22 measures with 100% climate tracking). This is the case, for example, for large-scale industrial carbonisation projects, for measures tackling energy poverty (through thermal renovation of buildings of low-income people) and photovoltaic systems or IPCEI Hydrogen.

Overall, 6 measures out of those that are 100 percent climate tagged are not reflected in the plan. In addition, some of the measures that are reflected, such as the investment in zero-emission utility vehicles; green investments in enterprises (e.g. grid coupled PV installations and electricity storage, zero-emission mobility) or the funding of zero-emission commercial vehicles and infrastructure, lack the necessary granularity and detail to allow a full comparison with those in the RRP.

The plan is consistent with the **Territorial Just Transition plan (TJTP).** JTF support for the territories most affected by the transition to climate neutrality is mentioned.

The plan provides inadequate analytical basis to prepare the **Social Climate plans (SCP)**, that will address the impacts of the new emissions trading system for fuel combustion in buildings, road transport and additional sectors (ETS2) on vulnerable households, transport users and micro enterprises. The plan provides an assessment of the distributional impacts of the planned policies and measures but does not provide details on ETS2, nor an analysis of the dynamics of transport poverty in Austria. The plan contains limited information on the process to draft the SCP and the methodology to identify vulnerable groups. Notably,

the current draft does not explain how the SCP will build on the policy framework outlined in the updated NECP, nor how consistency between the two plans will be ensured. As regards ETS2 auction revenues, the plan does not explain how Austria intends to comply with the rules of the revised ETS Directive, notably Articles 10(3) and 30 d(6), on revenue use[24].

Austria does not quantify of the climate impacts of measures currently included in the **CAP Strategic plan (CSP**). The plan does not explain if the CSP is in line with the new LULUCF and ESR targets and if additional measures are necessary.

The draft updated plan mentions the interactions between energy climate and clean air objectives. The plan refers to the main air pollutants for which Directive 2016/2284 sets emission reduction commitments, as well as to the **Austrian national air pollution control programme (NAPCP)** of 2019 and its 2024 update. However, the draft plan fails to discuss how the NAPCP and the NECP are aligned. It also does not quantify the impact of planned policies and measures on the main air pollutants, and only discusses co-benefits in a qualitative manner. The plan does not mention potential trade-offs, despite biomass being the most important source of renewable energy and solid biomass being expected to grow further towards 2030.

The plan includes numerous references to the **National Adaptation Strategy**, and it aligns well with the relevant risks, goals and measures identified in it.

Austria addresses the 2022 and 2023 **country-specific recommendations** to accelerate the deployment of renewable energy and reduce reliance on fossil fuels by taking specific actions such as a reform of the national environmental impact assessment law, aiming at streamlining the permitting process and therefore facilitating the implementation of renewable energy projects. The investment into the subsidy scheme for installing and expanding 'rooftop' photovoltaic systems, incentivising the uptake of solar energy in buildings, is set to also contribute to the expansion of renewable energy. Similarly, the national Hydrogen Strategy, which aims at ramping up production and use of renewable hydrogen in Austria, is expected to contribute to increasing the production and use of renewable energy in Austria and reducing reliance on fossil fuels. The same applies to the investment in exchanging oil and gas heating systems or large-scale industrial decarbonisation projects. The plan refers to measures to support e-mobility, such as zero-emission buses and utility vehicles, or zero-emission commercial vehicles and infrastructure, and thereby addresses country-specific recommendations to reduce emissions in the transport sector.

---

[24] For the spending of ETS2 revenues, priority should be given to activities that can contribute to addressing social aspects, hence focusing on a subset of the population. Also Article 10(3)(ha) determines that revenues may be used to provide financial support to address social aspects in lower- and middle-income households only, and, as per Article 10(3)(hb), where the revenues are used to finance climate dividend schemes, they need to have a proven positive environmental impact as documented in the annual report referred to in Article 19(2) of Regulation (EU) 2018/1999 of the European Parliament and of the Council.

8 FINANCING THE ENERGY AND CLIMATE TRANSITIONS

8.1 Investments needs

The plan includes information on the planned public expenditure until 2030 and the expected investment needs to implement the planned policies and measures. It contains total investments needed until 2030, and for some studies until 2040, for renewable energies, energy networks, industry (including a breakdown in segments), buildings and heating, and mobility. The investment needs that have been outlined vary significantly from study to study due to differing definitions of the term 'investment' and the use of different analytical approaches. For this reason, Austria does not provide an aggregated figure on total investment needs.

8.2 Funding sources

The plan outlines on an aggregate level per sector the main sources of financing to implement the planned key policies and measures. However, this is not done in a consistent way for all individual measures. There is also no consolidated overview of all funding sources and the budgetary information of the different policies and measures. Moreover, information on the public and private share, on the lifetime of the measure and on the share coming from the EU budget is missing. Therefore, it is not possible to identify potential funding gaps.

Austria is planning to rely largely on a mix of national funds, such as the national support programme for industrial transformation and the domestic environmental support (UFI), as key financing sources. The plan also refers to the European Regional Development Fund, Just Transition Fund, European Agricultural Fund for Rural Development and Innovation fund as EU sources for climate and energy-related investments. The most important financing instruments for energy efficiency in Austria are the Renovation wave (Sanierungsoffensive) and the Domestic environmental support. These two instruments have total allocation of EUR 6.4 billion from 2022 to 2030.

9 ROBUSTNESS OF THE ANALYTICAL BASIS OF THE DRAFT UPDATED NECP

The plan is based on a quantitative analysis, and describes both WEM and WAM scenarios, with projections for the relevant sectors of the economy, including industry, the energy system and transport. The projections go up to 2050. The analysis is based on the macroeconomic input-output MIO-ES-model. The methodologies used for WEM and WAM projections and for the impact assessment of specific policies and measures are only partly explained and referenced. The energy system model is not described. The plan describes the positive macroeconomic effects of implementing the additional measures of the WAM scenario, estimating an increase of gross value added (+1.5%), employment (+1.3%), private consumption (+1.2%) and investment (+5.4) by 2030. However, the model only captures the impact of larger investments, which boosts GDP and employment. No contractionary fiscal offsets are discussed in the plan. Public expenditure for climate action is discussed in detail but an analysis of the broader impact of public investments on public finances is missing.

The analysis is based on the parameters recommended by the Commission for international fuel prices. Some of the input parameters used for the analysis are clearly documented, such as prices, GDP and population, and in line with the best practices in the field. Other assumptions, such as number of households and cooling degree days, are not documented.

The transition from the national ETS to the new ETS for buildings, road transport and additional sectors (ETS 2) has been considered in the plan and in the projection scenarios.

The analysis does not allow for a proper assessment of the expected impact of the plan. In particular, the most important policies and measures cannot be properly assessed because the plan does not include an impact assessment addressing policy interactions (Chapter 5.1 ii and iii).

The top-down analysis described above is complemented by a bottom-up analysis on energy savings through energy efficiency measures in a variety of sectors, such as industry and housing. The methodology is based on an extrapolation of the effects of those measures for 2014 to 2020.