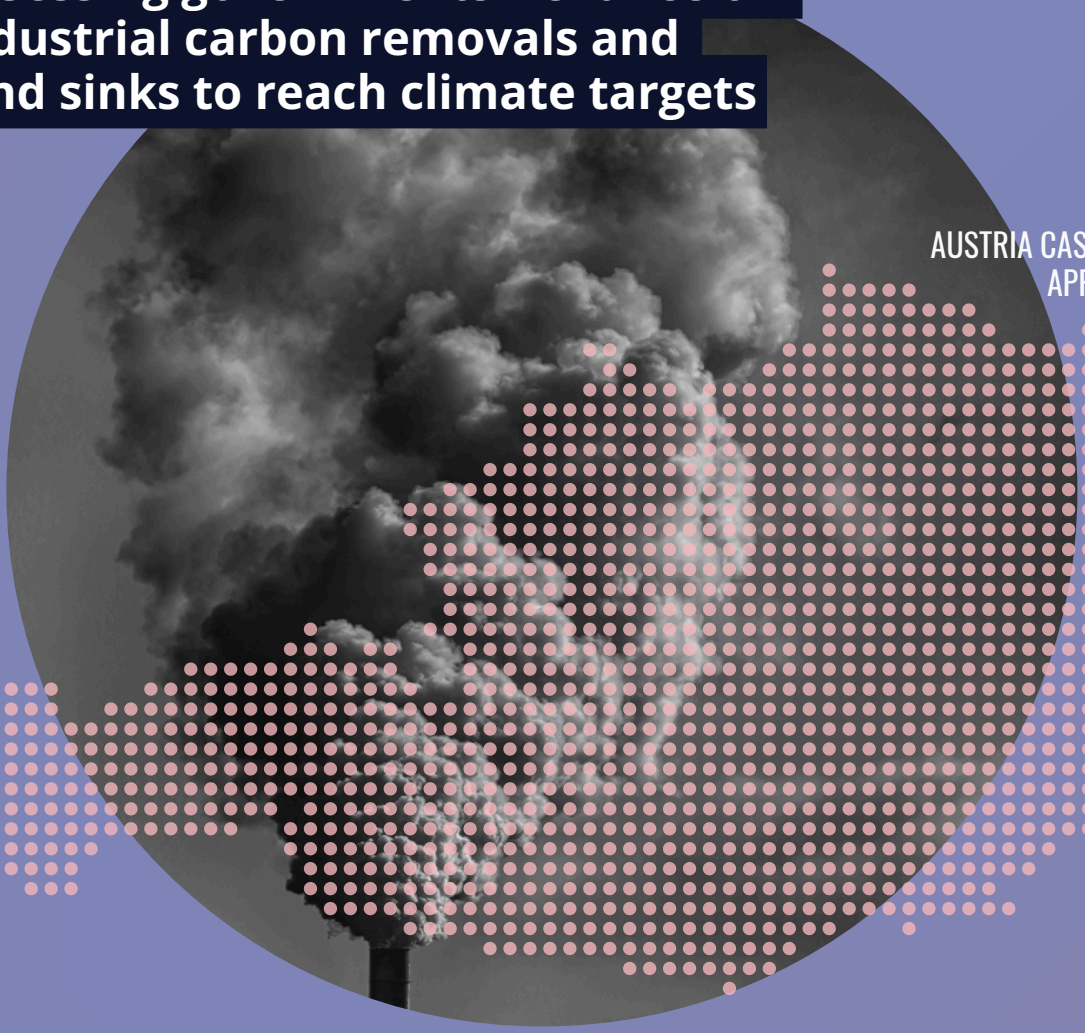
Leaning on Uncertainty

Assessing governments' reliance on industrial carbon removals and land sinks to reach climate targets



AUSTRIA CASE STUDY
APRIL 2026

CARBON MARKET WATCH

AUSTRIA CASE STUDY

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At a glance...

For more information on carbon dioxide removals and a glossary, click here.

Austria plans to rely heavily on industrial carbon removal, pending the future performance of the land sink. At the same time, assessments that anticipate late availability of CO2 transport and storage indicate significant delivery risks. Furthermore, Austria lacks binding climate legislation to support its poorly defined 2040 carbon neutrality ambition.

Austria lacks a national climate law that makes its 2040 climate neutrality objective legally binding. At the time of writing, Austria's climate neutrality objective encompasses solely non-ETS sectors and is only included in government programs, such as the 2024 National Energy and Climate Plan (NECP), and the goal was reaffirmed in 2025. In its 2040 scenario report, Austria's Federal Environment Agency projects residual emissions (i.e., those that will actually remain at the point of net-zero) to amount to 11 Mt CO2eq in 2040, further reducing to 9.4 Mt in 2050 (p76). However, these projections exclude the ETS sector, which aligns with the objective's scope, leaving a potentially significant portion of emissions unreported. Additionally, scenarios estimating the impacts of existing and planned emission reduction measures until 2050, included in Austria's 2024 NECP, show that implementation is severely lagging behind (pp203-230).

The 2024 Austrian Carbon Management Strategy (CMS), authored by the country's ministries of Climate and Finance, serves as a good practice for planning Carbon Dioxide Removals (CDR). It includes domestic plans for CDR, Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) deployment as well as intricate definitions of 'hard-to-abate emissions'. These definitions were proposed by the Scientific Advisory Board assigned to the strategy process, and are distinguished into industry and non-industry emissions. However, the strategy assumes domestic geological storage of CO2 and dedicated grids to be available from 2030, while scientific assessments by the Austrian Institute of Technology (AIT) contradict this. The scientific advisory board to the CMS warns of an existing conflict between desired climate target timelines and the technical feasibility of envisioned CDR.

Austria's CMS quantifies the country's reliance on industrial removals, which has a focus on Bioenergy with Carbon Capture and Storage (BECCS). Depending on the performance of the land sink, the country is expected to rely on industrial removals in the range of 1.7-6.3 Mt in 2040. Regarding the LULUCF sector, recent projections indicate that, under current conditions, it is highly uncertain whether national targets under the LULUCF Regulation will achieve the -5.65 Mt annual net removals target by 2030. Additionally, policy measures and updated evaluations are lacking beyond this timeframe.

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Broad measures to build a resilient land sink are outlined in the CMS, but their evaluation has so far been delayed by more than a year. Land competition, data volatility, and climate change driven effects are acknowledged as threats to the land sink. However, the CMS fails to address critical concerns about BECCS, including long carbon payback times and biomass feedstocks competing with other uses, which could further weaken the land sink.

TARGET SETTING	REMOVALS POLICY	TRANSPARENCY	FEASIBILITY
residual emissions definition	industrial removals	land use & sequestration rates	land use & sequestration rates
residual emissions quantification	land sink	technology & energy	technology & energy
general transparency	financing	transport & storage	transport & storage
reliance on international offsets	depth of assessments	biomass	biomass

Table 1: Traffic light graph; cell colours represent the level of transparency, depth, and plausibility of made assessments and plans; green = overall relatively transparent and plausible, yellow = partly lacking transparency or depth, red = severe transparency gaps or identified delivery risks. The classification is meant to provide an overview of key issues and best practices and is relative to the other reviewed countries.

Methodology Note

The case study was developed by reviewing publicly available policy and assessment documents, supplemented by transparency requests to national ministries and agencies. Data on 17 themes, including residual emissions, technology assumptions, and biomass sources, were analysed to identify gaps and best practices in countries' industrial CDR and land sink strategies. From the identified themes, 12 indicators were selected, as visible in Table 1. The collected information was clustered into themes, and key issues were broken down and underscored by references to authoritative documents in the detailed analysis section.

The scope of the analysis was limited to documents created by or on behalf of government ministries and agencies, with supplementary documents included where necessary. Detailed information on the methodology is available in the accompanying report. All reviewed documents and supplementary sources are either directly linked in the text or can be found in the list of sources at the bottom of this document.

Detailed Analysis

Target setting

● Residual emissions and removal targets

Austria currently lacks much of the domestic legislative architecture needed to reflect its commitments under both the EU framework and the Paris Agreement.

Without emission reduction targets enshrined in national law, the country relies entirely on legally binding targets at the EU level. Austria has also failed to establish long-term targets towards a state of net-negative emissions, such as residual emissions targets, net-zero goals, or separate permanent removal targets - leaving a substantial gap in its national legal framework. Leaked drafts of Austria's climate law proposal were described in the national media in 2021 and 2025. However, a proposal was never officially put forward. The government, which has been in office since 2025, commits to achieving climate neutrality by 2040; however, the ministry's leaked draft climate law proposal from June 2025 did not include a 2040 climate neutrality target. Furthermore, the leaked proposal mentions the possibility of failing its climate commitments under the European Climate Law as a potential option, which could potentially result in billions of euros in penalty payments to the European Union, but the country could prepare for. An official climate law proposal is expected for October 2026.

Austria provides a separate carbon management strategy and explicit definitions of residual emissions, even though it lacks binding separate removal targets.

Austria's updated National Energy and Climate Plan (NECP) from December 2024 includes the government's political goal of reaching climate neutrality by 2040 (p18). According to the NECP, the country plans to achieve net-zero emissions by reducing pollution in non-ETS sectors and "compensating" for remaining emissions through "natural and technical greenhouse gas sinks" (p18). The 2025 Government Program also recommits to the 2040 climate-neutrality target and to establishing a national climate law.

The Austrian Finance and Climate ministries published a separate Carbon Management Strategy (CMS) in 2024, outlining the envisioned approach to carbon management (including CCS, CCU, and CDR). The document presents an intricate definition of hard-to-abate emissions, drawing on advice from the Scientific Advisory Board to the CMS

(Wissenschaftsbeirat zur Österreichischen Carbon Management Strategie). The use of 'hard-to-abate' terminology overlaps in large parts with the definitions of 'residual emissions' popular with other countries.

Austria's CMS distinguishes between hard-to-abate emissions from industry and non-industry sources. In industries, hard-to-abate emissions are defined as CO_2 emissions from processes for which no feasible alternatives exist to eliminate them, despite efforts to optimise the process or product in question. The definition additionally acknowledges that the scope of hard-to-abate emissions may change as technology advances. Non-industry hard-to-abate emissions that would mostly come from agriculture instead encompass multiple greenhouse gases (i.e. methane, nitrous oxide, F-gases, and CO_2). The Land-Use, Land-Use-Change, and Forestry (LULUCF) sector is understood as a separate category, but no distinct definition of hard-to-abate emissions is provided.

A techno-economic analysis to identify sensible adjustments to the current hard-to-abate definitions is mentioned in the CMS (p30), but no timeline or further details on what such adjustments might entail were provided.

Expected residual emissions are quantified at the point of net-zero and beyond, while projections under current policies indicate that implementation is lagging.

Both Austria's NECP (p75) and the scientific advisory board's input to the CMS (p24) refer to the 2023 Federal Environmental Agency (FEA)'s assessment titled 'Energy- and Greenhouse Gas-Scenario Transition 2040'. This report charts the path towards climate neutrality by 2040 and includes projections until 2050. The underlying assumption for this scenario is the necessity to reach the 2040 net-zero target. The FEA scenario estimates that the economy-wide remaining emissions (excluding international aviation) in 2040 will amount to around 11 Mt CO_2eq (p8). The scenario is broken down by sector and projects emission reductions until 2050, resulting in total emissions in 2050 of about 9.4 Mt CO_2eq (p76), providing for strong transparency.

Austria's 2024 NECP additionally includes projections based on both implemented ("With Existing Measure" - WEM) and planned ("With Additional Measures" - WAM) climate measures. The WEM scenario projects overall emissions in 2040 at 57 Mt CO_2eq and estimates that they would further decrease to 53.1 Mt CO_2eq in 2050 (p203). The WAM scenario projects 2040 emissions at 36.6 Mt CO_2eq (32.4 Mt, including the LULUCF sink) and 2050 emissions at 24.9 Mt CO_2eq (22.4 Mt, including the LULUCF sink) (p230). The comparison of projections shows a significant gap between the envisioned emissions at the

point of net-zero by FEA and the emission-reduction measures implemented or planned to achieve this state. A more recent report published by FEA in December 2025, titled 'GHG-Scenarios for the long-term Budget Forecast 2025', includes an update of the expected effects of measures in the current government program. The report indicates that, under the currently proposed measures, Austria is lacking 7 Mt CO_2eq of mitigation action to meet its emissions reduction target under the Effort Sharing Regulation and is therefore significantly off track (p5).

Stringent principles, including the 'emission reductions first' principle, underpin much of the Austrian government's work on CDR.

Austria's 2024 NECP mentions the 'emission reduction first' and 'energy efficiency first' principles multiple times. It explains that technological capture and storage technologies can only be considered "[...] once all possible emission reduction and energy efficiency measures have been exhausted." (p76).

The CMS outlines recommendations by the Scientific Advisory Board to establish an ongoing process to monitor the development of decarbonisation technologies, CCS/CCU and options to compensate for hard-to-abate emissions (presumably including removals), based on "socially, ecologically and economically relevant assessment dimensions" (p23).

● General transparency

Austrian strategic plans and assessments for industrial carbon removals are highly transparent.

The CMS is a good example of transparency, as plans and conducted work are described in detail and consolidated into a single document. A number of planned assessments are mentioned throughout the CMS, and the coordination structure of ongoing and future work is also outlined (p37). This includes work to be done by multiple entities: a CMS steering group comprising representatives of selected ministries; the Scientific Advisory Board assigned to the process; and other working groups to facilitate exchanges with relevant stakeholders (p37).

As part of the CMS workstream, a crucial study, the 'Feasibility Assessment of a CO_2 Collection and Storage Network in Austria' was commissioned by the Austrian Climate Ministry and conducted by the Austrian Institute of Technology (AIT). The study is highly

transparent and provides a detailed analysis of topics such as infrastructure costs and residual emissions.

Austria's action plan for CCU, CCS, and industrial CDR in the CMS includes incorporating public engagement through the sharing of information on the safety, use, and necessity of carbon capture and removal technologies. The purpose is to increase public acceptance of these processes in Austria (CMS, p34).

However, transparency regarding Austria's ambition for climate neutrality by 2040 is very low.

There is no clarity on which sectors are included in the objective. Austria's latest NECP states that the 2040 net-zero target applies only to non-ETS sectors (p18, fn5), but no additional information could be found in other reviewed documents. The lack of clarity can also be attributed to the absence of climate legislation in Austria, which undermines the credibility of the 2040 climate neutrality goal.

● Reliance on international carbon credits

Austria does not explicitly rely on international carbon credits to meet its climate targets.

Austria clearly states in its 2024 Biennial Transparency Report that it does not currently engage under Article 6 of the Paris Agreement (p101). However, the recent deal on the EU's 2040 climate target, in the context of the December 2025 revision of the European Climate law, has opened the possibility of using international carbon credits to achieve the target. Whether Austria will officially choose to use such credits, which offer highly uncertain climate benefits and risk delaying domestic climate action, remains to be seen.

Removals policy

● Specific plans and foreseen measures

Austria's climate plans currently rely on up to 6.3 Mt of annual industrial removals in 2040.

Austria's NECP foresees the need for both natural sinks and industrial removals to achieve climate neutrality by 2040 and explicitly mentions BECCS as a potential instrument (p76).

The Austrian CMS estimates that between 1.7 and 6.3 Mt CO_2eq of industrial removals will be required in 2040 to compensate for hard-to-abate residual emissions (p7). To achieve this, DACCS, BECCS, enhanced weathering, technical mineral carbonation, and biochar are mentioned as potential practices (p15). The range of projected residual emissions depends on variations in the performance of natural sinks, which can range from 0 to 4.6 Mt CO_2eq in 2040, contingent on the selected scenario (p7). The upper range of 6.3 Mt was included in AIT's 'Feasibility Assessment of a CO_2-Collection and Transport-Network in Austria' published in 2024. Under its moderate and progressive scenarios, representing different emission reduction ambitions, the assessment projects removals from BECCS of 6.3 Mt CO_2eq in 2030 and 2040, followed by a slight decrease to 5.2 Mt CO_2eq per year in 2050 (p14).

A third scenario, taking only established measures into account, estimates a dependence on BECCS of 21.3 Mt per year in 2030 and 2040, and 15 Mt per year by 2050 (p14). According to the assessment, the number of 6.3 Mt CO_2eq of industrial removals in 2040 in both action scenarios was predetermined by the Austrian Ministry of Climate in the study contract (p42). This figure is derived from a study by Hochmeister et al., which analysed Austria's CO_2 point sources and residual emissions, and it notes that fugitive agricultural emissions cannot be captured. The study quantifies the need for negative emissions at 6.3 Mt/a in 2040, declining to 5.2 Mt/a by 2050 (p13).

As for the land sink, emissions projections in Austria's NECP show that the national targets under the EU LULUCF Regulation for 2030 will be met, but the latest projections cast doubt on this.

WAM and WEM projections in Austria's 2024 NECP both project 5.7 Mt CO_2eq LULUCF net removals per year by 2030 (pp203-230). This means that the country would slightly exceed its 2030 target of 5.65 Mt CO_2eq under the LULUCF Regulation.

Nonetheless, a more recent scenario for Austria's land sink included in a report by FEA, 'GHG projections and assessment of policies and measures in Austria 2025', projects only 4.19 Mt CO_2eq net removals for 2030 (p200), which means a risk of non-compliance with

Austria's LULUCF Regulation target. Notably, the report includes only a WEM scenario, meaning that planned but unimplemented measures were excluded because data was not available for forest land and harvested wood products (p82). Therefore, Austria's achievement of its 2030 LULUCF Regulation targets seems to hinge on the effectiveness of the additional identified measures. Austria's latest LULUCF projections reported to the European Union from May 2025 include both a WEM and a WAM scenario, but their 2030 projections are identical. Both scenarios project only 4 Mt CO_2eq net removals from the land sink in 2030. How this relates to the projections in Austria's NECP and potential non-compliance with the LULUCF Regulation is not described.

For the long term, multiple broad measures in the land sink have been identified, but assessments of their potential effects are significantly delayed.

Austria's 2024 NECP projects the land sink to decline after 2030, moving from -5.7 Mt CO_2eq in 2030 to -2.6 Mt CO2eq in 2050 (p203 & p230). This is even more worrying considering that binding LULUCF targets at both the European and national level are absent beyond 2030. For the expansion and stabilisation of the land sink, Austria's CMS mentions multiple measures: forest management and maintenance, expansion of forest area, replacing high-emission material products with wood, domestic wood biomass use for energy, conservation or restoration of forest bogs and wetlands, among others (pp34-36). However, the strategy does neither quantify the expected climate effect of these measures nor the land sink targets these measures shall achieve.

For removals in Austria's LULUCF sector, an evaluation of measures and their effects until 2150 is still pending under the "CareforNetZero" project, commissioned by the Ministry of Climate and conducted by the Federal Research Centre for Forests (BFW). This will also provide the latest LULUCF projections reflecting the most recent measures and strategies adopted by the government. The work was initially announced to be ready by the end of 2024, as indicated in the BFW 2023 Work Program (p26), but was then delayed multiple times without explanation. The project was scheduled to be finalised at the end of January 2026, as shown on the project's webpage[1]. The authors replied to a request for additional information, stating that the publication is planned for the second quarter of 2026.

[1] See website screenshot here.

Ultimately, the Austrian Carbon Management Strategy presents a clear roadmap for industrial removals.

The strategy outlines a detailed "Action Plan" for CDR in 3 phases, including the creation of a basic legal framework, infrastructure development and measures implementation, and the development of the land sink (pp25-36). For industrial CDR, the strategy focuses on creating legal frameworks, funding mechanisms and infrastructure for CO_2 capture, transport, and geological storage, while supporting research into carbon removal technologies such as BECCS. The plan emphasises the need for criteria to evaluate resource use (energy, biomass, geological subsurface) across different technological CDR methods and ensuring their integration into national climate planning with defined removal targets. However, no further information on the timeframe of this work or when these criteria would be set out is provided.

● Associated financial cost and source of financing

Assessments of the costs of industrial CDR are limited to CO_2 transport and storage infrastructure, showing that necessary operating costs exceed initial investment needs.

AIT's feasibility assessment estimates capital costs of EUR 12-18 billion for CO_2 transport infrastructure, approximately 3 % of Austria's 2024 GDP (p5). The total investment would be spread over 20 years, amounting to 600-900 million euros annually (p5). According to the same study, operating costs would be higher, amounting to EUR 1-3 billion per year, mainly for compressing and pumping CO_2. Total transport costs average 35-50 euros per tonne of CO_2, mainly due to the estimated high energy demand (p5).

Austria is taking the first steps to plan how to finance CO_2 transport and storage grids, although no concrete proposals have been put forward yet.

The CMS highlights the need for clear national and EU legal frameworks for CO_2 infrastructure (p7). A core action point in the strategy is the identification of investment needs and the analysis of cost-effective systems and market structures for developing and operating Austria's technological CDR infrastructure (p30).

Constraints and risks

● Land use and sequestration rates

The competition for land between general infrastructure development and the LULUCF sink is acknowledged, and potential measures are proposed.

Austria's CMS identifies land-use pressures from general infrastructure development as a key challenge to land sequestration. It proposes stronger spatial planning protections (p19) and an examination of measures to reduce land utilisation, aiming to keep the land sink potential as high as possible (p36). However, it is not stated when these would be implemented.

Constantly evolving assessment methodologies and high fluctuations in the sink are described as challenges to maintaining a stable land sink.

Austria's 2024 NECP reports that constant improvements in data collection, reporting, and recalculations of LULUCF emissions and removals are introducing additional volatility. According to the document, this volatility would have an impact on data points in the entire timeframe, including the reference period (see 2024 NECP Annexe, p1). Furthermore, the CMS references the Scientific Advisory Board's assessment of the Austrian land-sink potential as subject to significant fluctuations and a decreasing trend (p22).

Natural disturbances and climate change driven effects are also acknowledged as risks to the domestic land sink.

The CMS notes considerable risks to natural carbon reservoirs, including extreme weather events, forest fires, and insect calamities (p19). Additionally, the document notes that the effects of climate change on the soil carbon cycle need to be taken into account (p35). Regardless, the strategy does not propose actions to address these risks.

A 2021 study by the Federal Environment Agency highlights the challenges posed by land-use pressures and sequestration time lags for BECCS.

On the latter, the 2021 study, 'Certification of carbon removals. Part 1: Synoptic review of carbon removal solutions' notes that "[...] purpose-grown bioenergy crops for BECCS

electricity generation would actually have a positive emissions factor when assessed over a timeframe of 30 years, and only providing true negative emissions when deployed over much longer time frames (~80 years)" (p97). However, the Austrian CMS does not consider these challenges despite relying on high volumes of BECCS to achieve climate neutrality.

● Technology and energy

Austria explicitly plans to prioritise renewable energy for mitigation before using it for industrial CDR.

In the CMS, the Austrian Climate and Finance ministries commit to working with the Scientific Advisory Board for carbon management to make decisions on renewable energy use, prioritising emissions reductions (p24). Further, the strategy states that clear rules and standardised assessment schemes or sustainability criteria should be defined for the energy and raw materials used in technological CDR (p27). The CMS also notes that Austria plans to coordinate minimum capture, transport and storage, and removal targets with the overall planning of energy infrastructure (p31). The possible competition for energy use and raw materials among the different approaches is acknowledged. The development of evaluation criteria is proposed as a planned measure to address potential trade-offs (p.28). If followed through, this may provide a strong safeguard and necessary limitation to reliance on industrial CDR, mitigating risks of competition for renewable energy. By outlining the steps the Austrian government plans to take and acknowledging the challenges to be addressed, the CMS demonstrates high transparency, as do its assessments of energy requirements for carbon management.

Austria has conducted initial assessments of energy requirements for carbon capture technologies.

The AIT carbon transport and storage feasibility study estimates the total energy demand for the technical absorption of carbon. It gauges that for both CCS and industrial CDR, between 8.5 and 26.8 TWh will be needed per year by 2040, depending on the chosen technology (p64). According to the study, thermal energy needs could potentially be met by using available waste heat sources rather than requiring the generation of additional capacity (p64). This estimate, together with 2-3 TWh of electricity for transportation, must be incorporated into the national planning and generation targets according to AIT researchers (p98). The Federal Environment Agency, in its 2040 Transition Scenario report,

estimates energy needs for BECCS and DACCS combined at 2.3-10 GJ/ton CO2eq (p76). If all the projected -6.3 Mt CO2eq by 2040 were to come from DACCS and BECCS, this would mean energy needs of 14.5 PJ to 63 PJ - corresponding to between 1 and 6 per cent of Austria's total final energy consumption in 2024 of 1044 PJ.

● Transport and geological storage of CO_2

The Austrian Climate and Finance ministries expect domestic transport and storage infrastructure to be available by 2030, contrary to authoritative assessments by AIT.

The CMS expects domestic storage to be available from 2030 (p14). However, the feasibility assessment conducted by AIT concludes that injection of CO_2 into domestic reservoirs will likely not begin before 2035 due to complicated and costly investigations (p4). According to the CMS, domestic saline aquifers (i.e., underground rock formations containing salty water) could offer far more geological storage, in the gigatonne range, but they are less well-known and would be available between 2030 and 2040 (p14). Currently, Austrian law bans the geological storage of CO_2 within the country's territory, constituting an additional barrier to such plans.

Highly limited geological CO_2 storage capacity is acknowledged, leaving Austria dependent on international storage sites past 2050.

The CMS includes estimates of domestic geological storage options and identifies depleted gas and oil fields as the most likely storage solution, with an estimated capacity of 150-250 Mt and an annual injection rate of 6 Mt/a (pp13-15). Under current demand projections, national storage sites would be depleted within 25 years, making dependence on international storage sites inevitable (p15). Scenarios in the AIT feasibility assessment of carbon capture technologies rely on international storage sites in both 2040 and 2050 (p50). The same assessment estimates that international export and storage should be possible from 2033 (p42), earlier than the government's CMS timeline, which envisions international storage from 2040/2050 (p14). This would mean that Austria would have to compete with other European countries for CO_2 storage abroad. The Scientific Advisory Board's input to the CMS notes that international storage will only be available to a very limited extent in the short and medium-term, and large-scale storage abroad will only be an option around 2040 or even 2050 (p17). Additionally, it notes that transport and storage of CO_2 would incur significant additional costs for international storage.

Austria's Scientific Advisory Board to the CMS raised concerns about the country's long timelines for developing transport and storage infrastructure and the associated risks of missing climate targets.

In the CMS, the Austrian Ministry of Climate and the Ministry of Finance acknowledge long planning timelines, complex authorisation procedures and the construction and operation of infrastructure as barriers to geological storage of CO_2 (p7). The strategy, however, does not quantify the expected timeframes and lacks contingency plans in the event of delays. At the same time, it deems the use of industrial CDR as essential, at the latest by the mid-2030s, to achieve ambitious climate targets (p7). The AIT's feasibility assessments on carbon capture technology mentions that CO_2-grid connection to other countries is crucial (p98). However, delays until late 2030 or later could severely jeopardise the achievement of Austria's climate targets (p98). The Advisory Board input notes that building a comprehensive Austrian CO_2 grid is estimated to take at least 9 years based on experience with other networks, with the earliest expected availability in 2033 (p21). The advisory board warns of an existing conflict between desired climate target timelines and technical feasibility, recommending rapid implementation of a comprehensive CO_2 infrastructure[2] (p22).

● Biomass supply

Austria explicitly acknowledges the trade-off between biomass use for BECCS and maintaining its LULUCF sink capacity throughout the reviewed assessments and plans.

The FEA modelling for its 2040 energy and climate transition scenario explicitly identifies targets in the LULUCF sector as one limiting factor on biomass availability for energy use (p61). Modelling was designed to ensure total biomass quantities don't exceed current use plus additional biomethane application (p66). The 2024 NECP also recognises the tension between biomass use for BECCS and the achievement of LULUCF targets (p77). It suggests plans to evaluate framework conditions for sustainable domestic woody biomass use for energy production to ensure alignment with LULUCF objectives (p74). The NECP includes increasing projections of overall bioenergy demand until 2030 (p85). However, no

[2] Contribution of the Scientific Advisory Board to the Austrian Carbon Management Strategy: "In view of the realisation period of a CO_2 grid of at least 9 years, there is already a possible conflict at the present time (2024) between the desired achievement of climate targets and technical feasibility, which is why the rapid implementation and construction of a comprehensive Austrian CO_2 grid that can fulfil all the necessary tasks (CCS, CDR, CCU) is recommended." (p22)

information on the role of industrial CDR in the projections is provided, leaving the question of whether a higher bioenergy production to allow for BECCS was assumed in the model unanswered.

The 2024 NECP also shows Austria's plans to rely increasingly on energy from biomass, though this will depend on future prices of raw materials (p219). The CMS emphasises that interactions between biomass utilisation and natural sink performance must be considered (p6). It includes plans to eventually evaluate the use of biomass as a replacement for higher-emission materials, rather than for energy production (p35), but does not provide a timeline for this work.

The European Scientific Advisory Board on Climate Change recommended to the Austrian ministries working on the NECP, in response to its first draft, to "[...] ensure a sustainable supply and use of biomass while minimising pressure on food production and biodiversity" (p36). Following this recommendation, the updated NECP includes biomass sustainability considerations in its planning framework (p74). In accordance with the EU Renewable Energy Directive, Austria's 2024 NECP measure 7b (p144) includes plans to ensure coherence between forest biomass energy use and LULUCF Regulation targets based on assessments. However, these assessments have not yet been published, and no timeline for the planned work is offered in the reviewed documents. Whether they are part of the CareforNetZero project, noted above, is unclear. The European Commission's evaluation of Austria's 2024 NECP still notes that the document falls short in providing sufficient assessments to ensure biomass use for energy does not interfere with Austria's obligations under the LULUCF Regulation and sustainable biomass sourcing laws.

Key issues

Main delivery risks arising from reliance on industrial CDR include the availability of CO_2 transport and storage. Additionally, assessments and plans for the maintenance and protection of the land sink are severely underdeveloped. The complete lack of binding sectoral climate targets beyond 2030 undermines the credibility of Austria's climate plans.

1. The undefined role of the Austrian LULUCF sector in the long term creates significant uncertainty. The reviewed documents are unclear about the country's pursued trajectory for the domestic land sink beyond 2030. Specific information on the concrete measures planned for implementation and on their potential effects is entirely missing. Announced results from the research project CareforNetZero, which are expected to provide this information, have been delayed by over a year, with publication now expected in Q2 2026. The reliance on industrial CDR, mainly BECCS, in Austria's plans is contingent on the performance of the land sink, leading to high uncertainty for long-term planning.

2. Austria will rely on up to 6.3 Mt of BECCS to balance non-ETS emissions in 2040, while assessments of the feasibility of transporting and storing CO_2 raise concerns about significant delivery risks. The Austrian CMS expects domestic CO_2 storage and dedicated grids to be available from 2030 (p14). The Scientific Advisory Board to the CMS, in its input to the strategy, expects grid development timelines of 9 years, with the earliest injection in 2035, based on a comprehensive feasibility assessment (p21). The board warns of an existing conflict between desired climate target timelines and technical feasibility, recommending rapid implementation of a comprehensive CO_2 infrastructure (p22).

3. While the degrading effects on the LULUCF sink are acknowledged, no safeguards are proposed in Austria's plans to address additional biomass demand from BECCS. Austria recognises in its NECP and CMS that using biomass for BECCS might directly conflict with maintaining its forest carbon sink. However, assessment and guardrails to prevent an acceleration of the ongoing degradation of Austria's land sink through the deployment of BECCS are lacking.

4. The unclear national climate ambition and the complete lack of a specific legal framework for sectoral emission-reduction targets weaken the credibility of Austria's

climate commitments. Despite two leaked drafts in 2021 and 2025, no national climate law has yet been enacted in Austria. The 2040 climate-neutrality ambition, as committed to in the 2025 government program, has not yet been enshrined into law. Additionally, the scope of climate neutrality in Austria is poorly defined and applies only to non-ETS sectors, according to a footnote in Austria's 2024 NECP (p18, fn5).

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