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Annex 9.2 National legal case study of Climate engineering in Austria

D4.2 Comparative analysis of national legal case
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D4.2 National legal case studies: Annex 9.2 Climate engineering in Austria

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The TechEthos Project

TechEthos is an EU-funded project that deals with the ethics of the new and emerging technologies anticipated to have high socio-economic impact. The project involves ten scientific partners and six science engagement organisations and runs from January 2021 to the end of 2023.

TechEthos aims to facilitate “ethics by design”, namely, to bring ethical and societal values into the design and development of new and emerging technologies from the very beginning of the process. The project will produce operational ethics guidelines for three technologies for users such as researchers, research ethics committees and policy makers. To reconcile the needs of research and innovation and the concerns of society, the project will explore the awareness, acceptance and aspirations of academia, industry and the general public alike and reflect them in the guidelines.

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Definitions and abbreviations

Table 1: List of Abbreviations

Term	Explanation
CCS	Carbon capture and storage
CCU	Carbon capture and utilisation
CDR	Carbon dioxide removal
CE	Climate engineering
CO ₂	Carbon dioxide
CSU	Carbon sequestration and utilisation
CTCN	Climate Technology Center & Network
D4.2	TechEthos deliverable 4.2
DoA	Description of Action
EU	European Union
LTS	Long-Term Strategy 2050
MS	Multiple sclerosis
NGO	Non-governmental organisation
PC	Project Coordinator
R&D	Research and development
WP	Work Package

Abstract

The objective of this study is to review the current state of the law and legal responses on climate engineering in Austria, as evidenced in policy, legislation, case law and regulation. It focuses on those issues affecting and/or contributing fundamental human rights and freedoms, socio-economic inequalities, and stimulation of innovation. This study also looks at developments in climate engineering that may influence constitutional or human rights, and proposals to create or adapt existing law in response to those climate engineering developments.

A summary overview of the main findings and legal issues surrounding climate engineering in Austria is provided in section 3.1.2 of the TechEthos D4.2 Comparative analysis of national legal case studies. This report is primarily aimed at informing the Austrian government and Austrian policy makers regarding the regulatory challenges of climate engineering in the Austria. Furthermore, it provides further background to readers to the specific Austrian context of the main points and key regulatory challenges identified in the comparative analysis to which this report is annexed.



1. Introduction

Climate engineering presents many significant legal issues that impact socio-economic equality and fundamental rights in Austria. This study provides an overview of those legal issues and challenges.

This study analyses relevant laws and policies from the Austrian legal system in relation to climate engineering. It looks at policies, legislations and regulations surrounding the development of Climate Engineering technologies (CE) in Austria. It provides an insight into the Austrian legal system, its position within the European Union and references to corresponding international framework conditions. It examines current and planned laws and developments in relation to climate engineering and offers an outlook on the possible legal environment for this emerging field of technologies.

For the purpose of the TechEthos project and this national legal case study, we have used the following definition for climate engineering:

- **Climate engineering (CE)**, refers to "... the deliberate large-scale intervention in the Earth's climate system, in order to moderate global warming."¹

The report deliberately focusses on potential applications such as (and among others) Carbon Dioxide Removal (CDR) like Carbon dioxides capture and utilisation (CCU) or Carbon dioxides capture and storage (CCS). The current state of CE, which is still in development and not yet market-ready or deployable on a large scale, goes along with a lack of policy and regulation. Therefore, most of the policies and measures that help to steer the development of CE in the broadest sense are current climate and environmental protection policies and laws that aim to promote CO₂-offsetting or support decarbonisation through the use of alternative and environmentally friendly energy sources. While these technologies are not the focus of this report, they nevertheless provide a potential framework for the development of future CE applications in Austria.

For more information about the TechEthos technology families and their innovation ecosystems, visit: <https://www.techethos.eu/resources/>.

1.1 Purpose of the Austrian legal case study

The objective of this study is to review the current state of the law and legal responses on climate engineering in Austrian, as evidenced in policy, legislation, case law and regulation. We prepared this study through desk research, using legal research and academic databases (such as <https://www.ris.bka.gv.at/>) and consultation with legal experts.

There are several climate engineering-specific laws or policies in Austria as well as existing laws and regulations (e.g., environmental laws) which may and should cover these technologies, including any harms resulting from them.

This study is part of a series of national legal case studies prepared in the TechEthos project covering three technology families: climate engineering, neurotechnologies, and digital extended reality. A complementary report covers the international and European Union law dimensions of the three

¹ Shepherd, J., Caldeira, K., Cox, P., Haigh, J., Keith, D., Launder, B., & Mace, G. (2009)

technology families. The following table provides an overview of the nine country studies conducted as part of the *Comparative analysis of national legal case studies* (D4.2 of the TechEthos project):

Table 2: Overview of nine national legal case studies (TechEthos WP4)

Climate Engineering	Neurotechnologies	Digital Extended Reality
Australia	Germany	France
Austria	Ireland	Italy
United Kingdom	United States	United Kingdom

1.2 Structure of the case study

Section II explores the existing and proposed laws and policies that specifically address climate engineering. **Section III** explores the legal implications of climate engineering in relation to specific legal domains, including human rights law, environmental law and climate change law. **Section IV** provides an overview of the gaps and challenges in relation to the regulation of climate engineering. **Section V** concludes the case study followed by a reference list at the end.

1.3 Scope and Limitations

This study was prepared as part of the TechEthos project's work package on policy, legal and regulatory analysis. Therefore, the scope is demarcated by that project task's workplan. The legal issues related to climate engineering are too vast to be covered comprehensively in a study of this size. Instead, this study focuses on a limited range of topics with significant human rights and socio-economic impacts that are of high policy relevance, particular in the European context.

1.4 Overview of the Austrian legal system²

Austria is constituted as a democratic, federal republic. It consists of nine provinces (Vienna, Upper Austria, Lower Austria, Styria, Carinthia, Salzburg, Tyrol, Vorarlberg, and Burgenland), each administered by its respective government, and a federal government (Der *Bund*), called Federation.

The current constitution³ was written in 1920, re-enacted after the Second World War and constantly revised up until now. It establishes Austria as a country governed through an indirect democracy with a two-chamber parliamentary system: The first chamber, the *Nationalrat* (National Council), holds most of the legislative power and is elected by a nationwide election every five years.⁴ The second chamber, the *Bundesrat* (Federal Council), is established through representatives of the nine provinces and represents their interests.⁵ For a bill to become a law, it has to be submitted to the National Council as motions by its members. The bill is then sent to the Federal Council. They can neglect or agree within

² Weichsel, H. (2021)

³ Federal Republic of Austria. (1995)

⁴ Ibid., Art. 24 and following

⁵ Ibid., Art. 34 and following

eight weeks.⁶ However, for certain bills concerning changes in the Federal Assembly, the federal states' sphere of action, the federal principal law or similar, the Federal Assembly's approval is mandatory.

Since 1995, Austria has been part of the European Union and is therefore subject to EU law, including its respective Regulations, Directives and Decisions.⁷ Within this context, the Austrian legal system can be separated into the following hierarchy:

The fundamental rights in Austria are outlined in the constitution. In contrast to some other states (e.g. the constitution of Germany), Austria's fundamental rights are not listed in one single law but are distributed among the articles of the constitution. Any fundamental changes to the constitution require a national referendum. Even though the constitution does not contain a catalogue of fundamental rights, some provisions have a fundamental rights-like character and follow principles that are typical for democratic and libertarian constitutions:

The democratic principle states that Austria is a democratic state and all power is legitimated by the public.⁸ This principle also covers, among others, the right for a referendum⁹ or the right to vote freely and in secret¹⁰.

The republican and the federal principle explain the form of the state.¹¹

The principle of separation of powers prevents a concentration of power and splits the state into a legislature, a judiciary and an executive.¹²

The principle of equality states that all nationals are equal before the law and that privileges based upon birth, sex, estate, class or religion are excluded.¹³

The Right-to-life principle abolishes the death penalty.¹⁴

EU law is interwoven with the Austrian constitution. An example for this is the Human-Rights Charta of the EU¹⁵, which become part of the Austrian constitution meaning that Austrian laws and administrative acts that contradict the Charter can now be repealed by the Constitutional Court as unconstitutional¹⁶. This also concerns environmental directives, regulations, and standards passed by the EU. Directives are legally addressed to member state governments.¹⁷ In turn, member states have legal obligations to take regulatory and further legislative and administrative measures to incorporate directives into national law. EU regulations are legally binding on member states as well as persons and private entities in the jurisdiction of member states (although member states may still pass complementary measures to ensure enforcement and application).¹⁸ EU standards on the other hand are non-binding

⁶ Ibid., Art. 42 (4)

⁷ Consolidated Version of the Treaty on the Functioning of the European Union (OJ C326/49, 26.10.2012), article 288.

⁸ Federal Republic of Austria. (1995)

⁹ Ibid., Art. 45

¹⁰ Ibid., Art. 26 (1)

¹¹ Ibid., Art. 2

¹² Ibid., Art. 18

¹³ Ibid., Art. 7(1)

¹⁴ Ibid., Art. 85

¹⁵ European Court of Human Rights (1950).

¹⁶ Verfassungsgerichtshof. (2012).

¹⁷ Consolidated Version of the Treaty on the Functioning of the European Union (OJ C326/49, 26.10.2012), Article 249.

¹⁸ Consolidated Version of the Treaty on the Functioning of the European Union (OJ C326/49, 26.10.2012), Article 288

recommendations, technical guidance, or reference, often issued in support of directives or regulations.¹⁹ With regards on how to implement EU laws, the Austrian constitution states²⁰ that the Federation must inform the provinces without delay regarding all projects within the framework of the European Union. The provinces, in return, have the opportunity to present their views within a reasonable interval to be fixed by the federation. If the provinces have given a uniform opinion on a project, the Federation may depart from this opinion only for compelling integration and foreign policy reasons.

On the third level comes domestic Austrian law, which is separated into the federal sphere, which consists of national constitutional law and national law, and the regional sphere, which consists of regional constitutional law and regional law, which differs between the nine individual states. In general, regional constitutional law is subordinated to national constitutional law. However, there are some exceptions. For example, national law that is not constitutional in nature does not usually take priority over regional law. This becomes important when looking at environmental issues, as the established laws are divided between the federal and the regional level. Depending on the topic, the governmental responsibilities lie at the national or the regional level. While the Federation is exclusively responsible for issues like forestry, conservation of waterways²¹ or disposal of dangerous refuse, other topics, like environmental impact assessment, rest with the provinces.²² In other topics, like waste management, the federation acts as legislator while the provinces are responsible for administering environmental law adopted on the national level. Since the EU has become a main influence for the impact and the designation of environmental law, EU regulations and directives relating to environmental issues must be considered on both levels, national and regional.²³

1.5 Current state of climate engineering activities in Austria

Currently, there are no direct activities concerning climate engineering technology in particular. There are, however, activities that foster climate friendly technologies in general. One of them is the **“Masterplan Umwelttechnologie”**(2019)²⁴ written and development by the *Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology*. The plan draws the vision of Austria taking a leading position in environmental technology and services within the European Union and becoming part of a world market innovation engine for modern environmental technology. Despite these efforts, most of the technologies referred to in the strategy paper are not related to Climate Engineering but rather deal with fostering decarbonisation, transforming certain industry sectors towards a carbon neutral status quo or developing strategies to offset CO₂ emissions. Technologies to deliberately engineer the climate, e.g. by taking CO₂ out of the air or inducing heat mitigation, are not mentioned.

The Masterplan is accompanied by several other projects, institutions or networks. One of them is the **“Climate Technology Center & Network”** (CTCN), which facilitates the transfer of Austrian based climate technologies worldwide and with a focus on emerging and developing countries, in particular.²⁵ In their report, the network lists different activities and several green technologies. The results are similar as to before, as the report mentions only energy related technologies and does not list CEs at all.

¹⁹ Farmer, A. (2010)

²⁰ Federal Republic of Austria. (1995), Art. 23d

²¹ Ibid., Art. 10

²² Ibid., Art. 11 (7)

²³ Schmelz, C., Rajal, B., & Toth, C. (2012)

²⁴ Bundeskanzleramt (2019)

²⁵ Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (2015)

A general perspective on the Green Tech sector paints a similar picture. In the report “**Österreichische Umwelttechnik-Wirtschaft**” by the Austrian Ministry of Climate Action and Energy and the Ministry for Digital and Economic Affairs²⁶, which gives an overview of the fields of developments within climate technologies in Austria, the following six major fields are stated as drivers for the sector:

- Renewable energy technologies
- Energy efficiency technologies
- Water and wastewater technologies
- Waste technologies, recycling, circular economy
- Air pollution control
- Noise protection, Instrumentation and control engineering, environmental monitoring

As with the earlier examples, CE is not explicitly mentioned in this context. Instead, it becomes a sidenote, as one of the funding experts interviewed within the report refers to CCS as one of the R&D topics of great interest in the future.²⁷

Furthermore, the report on “**GreenTech Innovation**”²⁸ lists different development fields within the sector of innovative green technologies and lists Austria in a global comparison to other countries. According to the report, Austria is leading in the areas of electromobility and energy efficiency. The term “Climate Engineering Technology” or technologies that are similar to the above-mentioned definition do not appear in the report.

Concluding from these reports, it appears that Austria is investing in and supporting the Green Technology development in the country. The **Masterplan Umwelttechnologie**, in particular, proves the importance of this sector to the Austrian government. Climate engineering, however, does not seem to be part of this masterplan.

²⁶ Schneider, H.W., Pöchlacker-Tröscher, G., Demiroglu, D., Luptáček, P., & Wagner, K. (2020)

²⁷ Ibid., p. 220

²⁸ Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (2016)

2. Climate engineering-specific legal developments

The following section provides an overview of the legal and policy developments pertaining to climate engineering (CE) technologies in Austria. It examines relevant laws and policies and identifies, where applicable, the national authorities involved in the implementation and enforcement of such laws and policies. Whilst limited overall, most relevant legal and policy developments relate to carbon capture and storage (CCS) technologies.

i. Existence of dedicated Austrian policy on CE:

With regards to current policies, CE is mentioned in the context of Austrians activities to become a carbon neutral state. The two most important policy papers regarding the strategy of Austria to achieve that goal are the “**Long-Term Strategy 2050**” (LTS)²⁹ and the “**Government Programme 2020 – 2024**”³⁰. The LTS contains Austria’s target to become carbon neutral by 2050. The Government Programme 2020 – 2024 can be seen as an update to the LTS as it brought the carbon neutrality target forward by 10 years to 2040. While the former explicitly mentioned CE as an activity to achieve emission neutrality, the later does not list this technological field any longer.

Long-Term Strategy 2050

In 2019, following the conclusion of the Paris climate agreement³¹ and the enactment of regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action³², the Austrian Federal Ministry for Sustainability and Tourism published the Long-Term Strategy 2050 (LTS). The report provides the strategy to lower greenhouse gas emissions and the objective to become carbon neutral by 2050. Among the transformation of different carbon emitting or climate relevant sectors, such as energy, industry, transport, buildings, agriculture and forestry, the report also mentions two different approaches to CE:

The first approach is **Carbon dioxides capture and utilisation** (CCU), which is designed to “capture CO₂ from industrial processes (point sources) and to feed it into a technical application.”³³ The concept of CCU contributes to the goal to create a circular economy, in which all resources are reused. One application is to transform CO₂ into synthetic methane (natural gas). To do this, the captured CO₂ is injected into a geological structure together with green hydrogen and then converted into synthetic methane by the bacteria residing there. This gas promises all the technical advantages of natural gas but is CO₂ neutral and could be used as fuel for air traffic for example. Another promising approach is

²⁹ Federal Ministry for Sustainability and Tourism (2019)

³⁰ Federal Republic of Austria (2020a)

³¹ COP 21 (2015)

³² Regulation (EU) 2018/1999

³³ Federal Ministry for Sustainability and Tourism (2019), p. 37



the cultivation of microalgae that use the captured CO₂ for their photosynthesis, turning CO₂ and sunlight into biomass for further utilisation.

The second approach is **Carbon dioxide capture and storage (CCS)**, which is about technologies that “capture CO₂ from industrial processes (point sources) and permanently prevent it from being released into the atmosphere.”³⁴ Here, instead of transforming or reusing the CO₂, the carbon dioxide is stored within a geological underground structure. As stated in the report, this approach prevents the alternate use of underground structures. Furthermore, it needs specific storage requirements, as CCS projects are only viable when long-term safety and environmental protection can be guaranteed.

Although the LTS mentions these technologies, they also point out that **Austria’s current position towards CCU / CCS is very critical** for two different reasons:

- The risk argument: “Austria sees substantial hurdles and uncertainties with these technological solutions in terms of domestic storage capacity and ensuring permanent and safe storage.”³⁵
- The space argument: “It must be noted here that secured storage capacity that is generally suitable for CO₂ is very limited in Austria. The current potential domestic storage capacity is estimated at between 400 and 510 million tonnes of CO₂, or up to 6.5 times the current annual CO₂ emissions in Austria. The transport of CO₂ to storage facilities outside of Austria can be considered as an alternative or long-term solution.”³⁶

Based on these arguments, CE appears to be seen as an emergency solution which is to be avoided if possible. However, the substantial reduction of greenhouse gas emissions that is required to achieve the goal of CO₂ neutrality might require far-reaching changes, not only by transforming CO₂ emitting areas, but also by storing carbon captured from the atmosphere. As an alternative to CE, the LTS presents natural sinks, like swamp lands or forests, as a more environmentally friendly solution which might cover some of the remaining emissions.

Following up on the possibility to transform social structures, using natural sinks and storing carbon through CE, the report delivers four scenarios that map four possible pathways to the future. Each pathway reflects on the degree of CCS to be used to capture carbon:

- “Pathway A (...) is based on the high use of renewable energy, far-reaching efficiency improvements, and substantial changes in consumption patterns (lifestyle). Remaining emissions will be compensated by natural sinks (forest) (...) and by **the moderate use of CCS/CCU**.”
- Pathway B focuses on the (somewhat lower) expansion of renewable energy and efficiency improvements as well as on the import of bioenergy and hydrogen for use in multiple sectors (industry, transport, heating). A **substantially higher degree of CCS/CCU** than in pathway A must be used to compensate for the remaining emissions.
- Pathway C does without the import of bioenergy and hydrogen, and renewable resources in the country including forest and agricultural biomass are used to a high degree. This results in a

³⁴ Ibid.

³⁵ Ibid., p. 15

³⁶ Ibid., p. 17

reduction in the forest as a natural carbon sink (...). This means that **the CCS/CCU option must be used to a relatively high degree** to compensate for the remaining greenhouse gas emissions.

- Pathway D assumes the needs-oriented import of bioenergy and hydrogen, as in pathway B. The use of domestic forest biomass and carbon capture in the forest are assumed as in scenario 2 (section 6.1.3). For this reason, **CCS/CCU are not used.**³⁷

Following the arguments stated above and which are repeated throughout the report, the bottom line is to use CCU / CCS only if necessary and unavoidable. This critical stance is also taking form in a moratorium that prohibits CCS projects in Austria, as will be explained more in detail in the next chapter. Despite the moratorium, the report acknowledges that the technology could develop further and that “new research findings by 2050 should not be ruled out”³⁸. However, as was stated in the chapter before, it seems as if this further research plays a deferred role, as no funding for CCU / CCS technologies (or CE at all) is foreseen in the **Masterplan Umwelttechnologie**. Instead, the current strategy to achieve climate neutrality focusses on transforming current social and industry sectors or using existing ecosystems (natural sinks such as forests) to capture carbon. CCU / CCS should only be used when absolutely necessary (see the four different pathways)³⁹.

ii. Existence of dedicated Austrian laws on CE:

In 2011 the National Assembly passed the **Federal Act on the Prohibition of the Geological Storage of Carbon Dioxide**⁴⁰, a moratorium that bans the storage of carbon within geological structures in the federal territory of Austria. The only exception to this moratorium is for projects that are explorative in character and follow a research purpose for the development or testing of new products or processes. This exception also reduces the geological storage of carbon dioxide to a total volume of less than 100 000 tonnes.⁴¹

The moratorium follows the EU directive 2009/31/EC on the geological storage of carbon dioxide.⁴² With the aim of stabilising greenhouse gas concentration in the atmosphere, the directive urges the EU member states to support the research and development of CCS technology. This includes ways to capture carbon from industrial installations, its transportation to a storage site, as well as the search for and injection of carbon into suitable underground geological formations.

Although this directive has been supported by most member states, who also allow geological storage of CO₂, some member states have decided against CO₂ storage on their territory due to unsuitability of their geology (e.g., Finland, Luxembourg and the Brussels Capital Region of Belgium). Other member states do not allow it at or restrict it (Austria, Czech Republic, Estonia, Germany, Ireland, Latvia, Slovenia and Sweden).⁴³

³⁷ Ibid., p. 18, emphasis by the author.

³⁸ Ibid., p. 37

³⁹ Ibid., p. 18

⁴⁰ Federal Republic of Austria (2011b)

⁴¹ Ibid., §2 and §3

⁴² Directive 2009/31/EC

⁴³ Report from the Commission to the European Parliament and the Council on implementation of Directive 2009/31/EC (2014)



Despite the current moratorium, it is unclear whether the prohibition will always remain in the future. The act on the prohibition of the geological storage of carbon dioxide will be re-evaluated every five years, meaning that the moratorium could also be lifted. As the possibility of new research findings by 2050 should not be ruled out, the **Long-Term Strategy 2050** also states that “a possible contribution of CCS technology to climate mitigation should be approached with a certain openness, as it permanently removes CO₂ from the carbon cycle.”⁴⁴

iii. Proposals for dedicated law:

- none

iv. Responsibility for enforcement:

According to the bespoke **Federal Act on the Prohibition of the Geological Storage of Carbon Dioxide**, the Federal Minister of Economy, Family and Youth is entrusted with the enforcement of the law. The evaluation of this act is incumbent on the Federal Government on the proposal of the Federal Minister of Economy, Family and Youth in agreement with the Federal Minister of Agriculture, Forestry, Environment and Water Management and the Federal Minister of Transport, Innovation and Technology.⁴⁵

v. Significant legal cases:

- none

vi. Current debates and future policy and/or legal developments:

There are current public debates in Austria concerning climate change policies in general which might also favour CE in the future, depending on the development of the discourse.

One debate is the **Klimavolksbegehren**, a grass roots campaign that aims for a referendum to inscribe the protection of the climate as one of the main principles in the Austrian constitution.⁴⁶ In case the referendum succeeds, it might change Austrians’ perspective on CE, as the referendum fosters the stance on climate neutrality and raises the need for possible solutions. Promoted as a “bridging technology which will make an important contribution to the decarbonisation of the industry”⁴⁷, CE could be a suitable way to achieve climate neutrality in the short term.

vii. Conclusion:

In a nutshell, the current stance towards CE (especially CCU or CCS) is a critical one. This is reflected in the active moratorium that prohibits the storage of CO₂ in commercial contexts and only allows research projects up to a certain amount. However, the goal to achieve climate neutrality as well as public debates such as the Klimavolksbegehren, might force the government to rethink the position. If the transformation of societal sectors towards climate neutrality or the use of natural sinks to capture carbon is insufficient to make Austria a net-zero CO₂ country, CE could be an option to close the gap, as the presented pathways of the LTS show. In this case, the moratorium that is currently active could also be lifted.

⁴⁴ Federal Ministry for Sustainability and Tourism (2019), p. 37

⁴⁵ Federal Republic of Austria (2011b)

⁴⁶ Klimavolksbegehren (n.a.)

⁴⁷ Federal Ministry for Sustainability and Tourism (2019), p. 42



3. Domain-specific legal issues

This section examines the legal implications of climate engineering in a Austrian context with respect to specific legal domains with a high socio-economic impact. The legal domains covered include human rights law, environmental law, and climate change law.

3.1 Human Rights law

With regards to human rights law there have not been any legal issues that link directly to CE. However, there are examples where the government of Austria has been accused of violations of basic human rights by not doing enough to fight climate change. Those cases might in the future put pressure on Austria to make use of CE, as one tool to tackle climate change.

Human rights law in Austria is defined by the United Nations Universal Declaration of Human Rights and the according series of comprehensive human rights agreements under international law, which have been ratified by the country.⁴⁸ This guarantees that every person living in Austria enjoys the rights documented in the declaration, such as freedom of opinion and speech, privacy of the individual, the protection of citizens through preventive measures by the state and also from the state or guaranteed education and health care through schools, hospitals, teachers and doctors. Furthermore, as a member of the Council of Europe, Austria is also part of the European Convention on Human Rights⁴⁹. Several other agreements regarding special human rights issues are agreed upon by the Austrian government. For example, in early 2007 it signed the International Convention for the Protection of All Persons from Enforced Disappearance and the International Convention on the Rights of Persons with Disabilities.

The latter becomes relevant in the following court case. In March 2021, an Austrian citizen filed a complaint with the European Court of Human Rights against the Austrian government, known as **Mex M v Austria**. The citizen suffered from a temperature-dependent form of multiple sclerosis (MS) and is therefore “directly affected by Climate-Crisis induced increase in average temperature and heatwaves since 2003”⁵⁰, as stated in the application form. While it is not possible to sue for climate protection in Austria, the complaint route is via fundamental and human rights.⁵¹ The petitioner claims that the Austrian government failed to combat climate change more quickly and effectively. Thus, its inaction on the climate crisis has violated his constitutional right to family and private life under Article 8 of the European Convention on Human Rights.

In another case, **Greenpeace et al. v. Austria**⁵², the NGO Greenpeace asked the constitutional court to invalidate two tax laws passed by the Austrian government. Both laws favour air travelling as they exempt the value-added taxes on cross-border flights and exempt kerosene taxes on national flights in 2020. Greenpeace also alleges that “the tax breaks infringe on the right to life and liberty guaranteed by Article 8 of the European Convention on Human Rights.”⁵³ The reasoning here is that the tax

⁴⁸ Federal Republic of Austria (n.a.)

⁴⁹ European Court of Human Rights (1950)

⁵⁰ Krömer, P. (2021)

⁵¹ Wien ORF (2021)

⁵² Verfassungsgerichtshof (2020)

⁵³ Grantham Research Institute (n.a.)



exemptions will contribute to climate change as they promote using flights instead of traveling by train. The case was dismissed as inadmissible in September 2020, as rail passengers cannot sue over preferential tax treatment given to air travel.

The reported cases do not directly address human rights law in the context of CE, but could form arguments for the use of CE in the near future.

3.2 Environmental law

Environmental laws in Austria are regulated on national level as well as on the level of the provinces: On the provincial level are topics such as nature conservation, land usage and planning, whereas most environmental matters, such as water, waste forestry mineral raw materials, and others are assigned to the federal level⁵⁴. Also, the administrative and executive competence in Austria regarding laws with relevance to climate engineering is split between the following three ministries:

- The Federal Ministry for Climate Protection, Environment, Energy Mobility, Innovation and Technology
- The Federal Ministry for Agriculture, Regions and Tourism
- The Federal Ministry for Digitalisation and Business Location

In the following, the most important environmental laws on a federal level will be summarized. These become important, as they might – directly or indirectly – influence the regulation of CE in the future.

The Austrian **Abfallwirtschaftsgesetz** manages the waste disposal in Austria. In accordance with the precautionary principle and sustainability, waste management shall be geared towards avoiding harmful or detrimental effects on humans, animals and plants, their livelihoods, and their natural environment. It is also to regulate and minimise effects that otherwise impair general human well-being and emissions of air pollutants or climate-relevant gases.⁵⁵ The general vision is a circular economy as also described in the EU Circular Economy Strategy and the EU Circular Economy Action Plan.⁵⁶ This strategy is in favour of technologies that make CO2 reusable, like CSU technologies, for example.

The **Umweltförderungsgesetz** is a law, updated in 2020, to provide substantial funds for domestic environmental promotion. The goal of the act is the protection of the environment through proper sewage disposal, use of renewable energy sources, measures abroad that serve to implement national, EU or international environmental and climate protection targets, securing and remediating contaminated sites, and the protection, restoration and conservation of biodiversity.⁵⁷ As CE does touch upon the targets defined in this law, it could also become subject of funding under this law. Currently, most of the investments go into transforming the existing industries towards climate neutrality.

In 1978 the Austrian Parliament voted for a ban on nuclear energy, the **Federal Constitutional Act for a Nonnuclear Austria**⁵⁸ prohibits the building of power plants in Austria as well as the storage of nuclear weapons on national territory. This stand against nuclear energy, which is also anchored in the

⁵⁴ Federal Republic of Austria. (1995), Art. 10 & 11

⁵⁵ Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (2002)

⁵⁶ Federal Republic of Austria (2020a)

⁵⁷ Federal Republic of Austria (2020b)

⁵⁸ Federal Republic of Austria (1999)



constitution, leads to tension between Austria and the EU. The EU's decision to classify nuclear energy as an environmentally friendly energy source in the context of the EU taxonomy, caused the Austrian Federal Minister for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (BMK), Leonore Gewessler, to threaten to sue the EU.⁵⁹ According to a study conducted on behalf of the BMK, nuclear power is not an environmentally friendly energy source. This definition undermines the intention of the EU Taxonomy to fund and support climate friendly energy sources.⁶⁰

The laws listed here can support the use of CE in the future. The first two laws become relevant for CE (especially CSU) as the technologies promise a path towards the goal to create a circular and carbon neutral economy. The third law, which prohibits the use of nuclear energy, closes down an alternative path to achieve the beforementioned goal and can thus also be seen as a law which may support the use of CCU and CCUS technologies.

3.3 Climate change law

The climate laws are mainly concerned with decarbonizing Austria's industry. They follow the results of the Paris climate agreement⁶¹ and the EU regulation 2018/1999⁶² to make Europe carbon neutral by 2050. There are three laws that are particularly important to achieve the goal of carbon neutrality and which have relevance to CE.

The Austrian **Climate Protection Act (Klimaschutzgesetz)**⁶³ defines the greenhouse gas emission thresholds for six sectors: Waste, energy and industry, fluorinated gas, buildings, agriculture, and transport. Furthermore, article 4 creates a National Climate Protection Committee. The committee is comprised of different stakeholders. Among them representatives of the provinces, federal ministries involved in climate change and representatives from trade unions, industry, and agricultural associations. The goal of the committee is to advise on fundamental issues, in particular on the long-term reduction of greenhouse gas emissions towards a low-carbon society. The act has been concretized in a **table of measures, published in April 2020**⁶⁴. The report lists several activities planned by the federation and the individual provinces, set between beginning of 2019 until 2020. The listed activities aim at decarbonisation, the funding of new energy sources (like solar energy) or the transformation of the mobility sector (e.g. through E-Taxis or the expansion of the necessary infrastructure). There are no measures listed that can be defined as Climate Engineering Technologies. In one column, the table asks for the expected impact of the activities and how much CO2 emissions can be reduced. Most of the activities do not give any information on that. In the same year, the University of Graz published an **Evaluation of Climate Protection Act**⁶⁵. The evaluation states that the act has not been able to meet the goals it set itself. The compliance with obligations under international and European Union law was only possible due to extensive certificate purchases or because of remaining allowances from previous purchases. The report further states that, in view of the period 2021 - 2030, significantly measures are necessary in order to achieve the emission reductions required and that the

⁵⁹ Kurmayer, N.J. (2021)

⁶⁰ Lünenbürger, S., Kottmann, M., & Reiter, K. (2021)

⁶¹ COP 21 (2015)

⁶² Regulation (Eu) 2018/1999 Of The European Parliament And Of The Council of 11 December 2018 on the Governance of the Energy Union and Climate Action

⁶³ Federal Republic of Austria (2011a)

⁶⁴ Federal Republic of Austria (2020c).

⁶⁵ Schulev-Steindl, E., Hofer, M. & Franke, L. (2020)



act itself needs to be improved. One major weakness they point out is the lack of substantive governance and accountability mechanisms. Based on the evaluation, one could argue that Climate Engineering might become important in the near future to achieve the goals of CO₂ reduction.

The **Climate and Energy Fund Act** supports climate neutrality by funding the transition of areas of energy and mobility transition, climate change and awareness raising. In line with the strategy to make Austria a climate neutral state in 2040, their goal is to develop a CO₂-free economy and society by “strengthening the innovative power of domestic companies and the sustainable use of regional resources”.⁶⁶ This Fund, among others (see above), offers potential finances for the research & development of CE in Austria.

The recent **Ökosoziale Steuerreformgesetz 2022**⁶⁷ reforms the current tax system in Austria and introduces a carbon levy of 30 euros per tonne. This levy will start in June 2022 and rise to 55 euros per tonne in 2025. The reform also implements several tax amendments for ecological business investments and a regional climate bonus as a reimbursement for every Austrian citizen.

These climate laws show the two different approaches taken by the current government to tackle climate change. (1) The first two acts are supporting the ongoing transformation of the Austrian industry towards carbon neutrality by funding climate friendly innovations and sustainable pathways. (2) The third act is a taxation of CO₂-based industries. Both laws affect CE technology as (1) is the funding environment for the further development of the technology and (2) becomes a future reason to use and implement CE, especially because of its capability to capture carbon and thus reduce CO₂ emissions.

⁶⁶ Klima- und Energiefonds (n.a.)

⁶⁷ Federal Republic of Austria (2022)

4. Overview of gaps and challenges

This section provides an overview of the regulatory gaps and challenges surrounding climate engineering in Austria. It builds on the laws and policies identified in the previous sections.

Concluding from the beforementioned laws there appears to be several challenges and conflicts with regards to CE. The main conflict arises around Carbon Capture and Storage technologies.

On the one hand, Austria's position on CCS technology is very clear. Through the moratorium, the government is speaking out against the development and use of CCS and instead supports and funds alternative pathways to reach the zero emissions goal. Those pathways focus on decarbonization, the transformation of industries or using natural ways of storing carbon (e.g., natural sinks like forests). Also, the current funding guidelines and strategies that focus on green technology and achieve CO₂ do not mention CE technology in particular but rather focus on other technologies that support the goals mentioned before. This means that although decarbonisation strategies are being pursued, they are aimed more at the transformation of industrial sectors - either by promoting sustainable technologies or by taxing CO₂ emissions.

On the other hand, the ambitious goals of becoming CO₂-neutral by 2040, the Climate Protection Act, which defines carbon thresholds for different industry sectors, the tax regulations, which make CO₂ emissions more expensive, and the regulations on waste, which foster a circular economy, all support the use of CE (in particular CSU). Especially with regards to the evaluation of the Climate Protection Act⁶⁸, which states that the current path does not reduce the CO₂ emissions to meet the planned goals, and with regards to court cases charging Austria's lack of action against climate change, the pressure to reconsider the government's current stance on CE might change in the near future and make the technology a necessity to become a carbon neutral country.

⁶⁸ Schulev-Steindl, E., Hofer, M. & Franke, L. (2020)



5. Conclusion

Concluding from the report we can say that CE is already a topic in Austria, although the debate around the use of CE has already passed.

One reason for that is the clear stance against certain applications of CE, as the development and use CCS and CCU in Austria is prohibited under the “Federal Act on the Prohibition of the Geological Storage of Carbon Dioxide”. It only allows the research of these technologies on a small scale. Reasons for that are (a) a precautionary stand towards CE, as the use of the technology is still too risky and (b) the spatial requirements are not given, as the nation state of Austria does not have the space for the geological storage of extracted carbon. However, the current laws already offer a framework for the development of CE. The Climate and Energy Fund Act, as well as the current turn towards green technologies, supports this. Furthermore, the laws on waste management also require a shift towards a circular economy, which would be supported by CSU technologies.

As the need to tackle climate change rises, not only because of the self-defined goal of reaching carbon neutrality by 2040 but also because of possible Human Rights Infringements, the search for solutions becomes inevitable. Austria’s current strategies to address the challenges ahead is to invest green technologies, to focus on decarbonisation, mobility transformation or transitions in the energy sector and to tax CO₂ emissions. The use of CE however, is not part of their approach.

Thus, the question of whether CE might play a role in Austria in the future highly depends on the success of the planned activities to transform the different carbon emitting sectors. As was depicted in the Long Term Strategy report, there are different pathways that can be foreseen today. If the goals cannot be achieved through the measures taken, then the critical position towards CE might have to be reconsidered.

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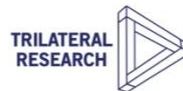
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