GEOTHERM FORA

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# Second mapping of relevant policy and regulatory issues

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# 1. Introduction

This report provides an updated overview and a mapping of the policy framework relevant to geothermal energy, including a summary of the already existing mapping and adding new policies.
When considering the European regulatory and policy framework, the various interlinked regulations and policies create a complex regulatory background. Although this may not necessarily result in an overregulation of geothermal projects, and may indeed provide a consistent and robust framework that allows confidence in geothermal deployment, the lack of readability may be a deterrent for the emergence of new geothermal markets.

Early 2024, the European Parliament's plenary voted with 96% in favour of a resolution to support a European geothermal energy strategy.[1] The resolution calls for a reduction in administrative burdens and investments in buildings, industry and agricultural sectors across the Union; for building a Geothermal Industrial Alliance; for setting up a harmonised financial risk mitigation insurance scheme, and to support regions in transition and coal regions to transition to geothermal.

The EU Committee of the Regions followed the Parliament's initiative and backed geothermal energy in April 2024.[2] The CoR' plenary adopted its opinion entitled "Localising energy production: the role of geothermal energy", with nearly total support. The document aligns with the Parliament's resolution and adds focus on cities and region.

The **European Economic and Social Committee** opinion "*The potential of geothermal energy for the green transition"* was also agreed upon unanimously in November.[3] The opinion focused on the need for more effective financial measures to support investments, particularly the use of public finance to leverage private capital.

In December 2024, the Council of the EU published its Council Conclusion on geothermal energy, promoting geothermal energy as a local, affordable and secure solution to decarbonise the energy system.[4] Furthermore, the momentum to boost geothermal deployment in the EU evolves with the Energy and Housing Commissioner Dan Jorgenson committing to publishing a geothermal strategy during his mandate.

Finally, the new mandate of the European Commission started with a significant number of initiatives that will impact the sector at different levels. This report provides an overview of all the announced initiatives that will come in the next period.

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[1] Texts adopted - Geothermal energy - Thursday, 18 January 2024
[2] Untapping the potential of geothermal energy to make the energy transition affordable and accessible | European Committee of the Regions
[3] The potential of geothermal energy for the green transition | EESC
[4] Geothermal energy: Council calls for faster deployment - Consilium

# 2. Overview on the European policy and regulatory framework for geothermal energy

## .1 European Climate and Energy Framework

The choice of the energy mix is done by the Member States but energy policy is becoming increasingly a competence of the EU institutions. It is the response to critical supra-national issues such as climate change and security of supply that made the development of a more comprehensive EU energy policy indispensable.

### .1.1 The European Energy Union

In 2015, the European Commission has reorganised all the EU actions in the field in a framework strategy towards the establishment of a 'resilient Energy Union with a forward-looking climate policy'. The strategy is being built around the following five dimensions:

1) Security, solidarity and trust: diversifying Europe's sources of energy and ensuring energy security through solidarity and cooperation between EU countries;
2) A fully integrated internal energy market: enabling the free flow of energy across the EU through adequate infrastructure and without technical or regulatory barriers;
3) Energy efficiency: improved energy efficiency will reduce dependence on energy imports, lower emissions, and drive jobs and growth;
4) Decarbonising the economy: the EU is committed to a quick ratification of the Paris Agreement and to retaining its leadership in the area of renewable energy;
5) Research, innovation and competitiveness: supporting breakthroughs in low-carbon and clean energy technologies by prioritising research and innovation to drive the energy transition and improve competitiveness.

To monitor the Union's progress, a report on the state of the energy union is published each year. In 2024, the report highlighted significant progress on renewable energy expansion, resilience and lower energy consumption next to other topics such as the Net-Zero Industry Act or the Critical Raw Materials Act.[5]
Moreover, in 2019 the national energy and climate plans (NECPs) were introduced by the Regulation on the governance of the energy union and climate action (EU)2018/1999[6], agreed as part of the Clean energy for all Europeans package[7].
The national plans outline how the EU countries intend to address the 5 dimensions of the energy union listed above (decarbonisation, energy efficiency, energy security, internal energy market, research, innovation and competitiveness). This approach requires a coordination of purpose across all government departments and it provides a level of planning that will ease public and private investment.[8]
By 30 June 2023, Member States were due to submit their draft updated NECPs in line with article 14 of the Governance Regulation. Five Member States failed to do so in time. The Commission commented on these drafts by December 2023, and February/April 2024 for the later submission while

[5] Ninth report on the state of the energy union - European Commission
[6] https://energy.ec.europa.eu/topics/energy-strategy/energy-union_en#regulation-on-the-governance-of-the-energy-union-and-climate-action.
[7] https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package_en.

the official deadline for the submission of the final version of the updated NECPs was set for June 2024. The latest NECPs are available on the website of the European Commission.[9]

## .1.2 The EU climate and energy ambitions

The European Green Deal[10], approved in 2020, is a set of policy initiatives by the European Commission with the overarching aim of making the EU climate-neutral in 2050. The plan was to review each existing law on its climate merits and introduce new legislation including on the circular economy, building renovation and innovation.

To deliver the Green Deal, existing legislation is revised, and new legislative initiatives are put in place, under the "Fit for 55" package[11], launched in 2021. These legislative proposals under the 'Fit for 55" package are intended to ensure the EU achieves the -55% emission reduction target by 2030 compared with 1990 levels. In particular, the package launched the revision process of key legislation for the geothermal sector such as the Renewable Energy Directive (RED), the Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD).

Moreover, in May 2022, the Commission presented its REPowerEU plan[12] as a response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine. The main purpose of the plan is to save energy, produce clean energy and diversify EU energy supplies. Among others, this plan has also translated into further measures to be included in the RED, EED and EPBD revision.

All the abovementioned legislations are coherent in developing the new EU ambition towards a decarbonised and renewables-based economy. In 2024, the remaining Fitfor55 legislations relevant to geothermal have entered into force: Energy Performance of Buildings Directive, Electricity Market Design, Net Zero Industry Act and Critical Raw Material Act.

Further details on the legislations below can be found in the previous report mapping relevant policy and regulatory issues for the Geotherm Fora project:

- Renewable Energy Directive III
- Revised Energy Efficiency Directive
- EU rules on permitting for renewables

## .1.3 Energy Performance of Buildings Directive (EPBD)

Entered into force in May 2024, the revised Energy Performance of Buildings Directive (EPBD) aims at increasing the rate of renovation in the EU, particularly for the worst performing buildings in each country.
The EPBD is particularly important because buildings account for 40% of energy consumed and 36% of energy-related direct and indirect greenhouse gas emissions. In the EU, heating, cooling and domestic hot water account for 80% of the energy that households consume. Making Europe more resilient calls for renovation of EU buildings, making them more energy efficient and less dependent on fossil fuels. Renovation is key for reducing the energy consumption of buildings, for bringing down emissions and

[9] National energy and climate plans
[10] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN.
[11] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en.
[12] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131.

for reducing energy bills. In particular, the aim of the revised EPBD will be to have 'Zero-Emission Building' (ZEB) as the standard starting from 2030.

**Minimum energy performance standards (MEPS) for existing buildings (Article 9)**
With the goal to transform the national building stock to zero-emission by 2050 a progressive MEPS timeline has been set for different types of buildings to be achieved in the coming decade:

- Buildings & building units owned by public bodies to achieve at least EP class F by 2027 and class E by 2030.
- Non-residential buildings & building units to achieve at least class F by 2027 and class E by 2030.
- Residential buildings & building units to achieve at least class F by 2030 and class E by 2033.

**Long term renovation strategies and new buildings**
One of the key updates in the requirements is a national roadmap where Member States have to set targets for 2030, 2040 & 2050 on different indicators such as annual energy renovation rate, primary and final energy consumption of the national building stock and its operational GHG reductions. For 2050 the objective for the transformation of the existing building stock is raised from NZEB to ZEB (Article 3).
It has also been introduced the Renovation Passport (Article 10) as a document that provides a tailored roadmap for the renovation of a specific building in several steps. The passport should contain expected benefits in terms of energy savings, savings on bills and operational GHG reductions, as well as benefits related to health and comfort.
Finally, the Act mandates that all new public buildings shall be zero emission buildings from 2027, and all other new buildings from 2030 (Article 7).

**Removing financial incentives to stand-alone boiler and phase-out plan**
Member States will have to plan policies and measures with a view to a complete phase-out of boilers powered by fossil fuels by 2040 through the national Building Renovation Plans (Article 3 and Annex II).
Additionally, from January 2025, Member States will have to stop subsidising stand-alone boilers powered by fossil fuels (Article 17).

**Zero-Emission Building (ZEB) Requirements (Annex III)**

- All new residential and non-residential buildings must have zero on-site emissions from fossil fuels, as of 1 January 2028 for publicly-owned buildings and as of 1 January 2030 for all other new buildings, with a possibility for specific exemptions.
- Regarding non-residential buildings, Member States will have to renovate the 16% worst-performing buildings by 2030 and the 26% worst-performing buildings by 2033;
- Regarding residential buildings, the average primary energy consumption of the entire housing stock will have to be reduced by at least 16% by 2030 and by 20 to 22% by 2035;

ZEB will require:

- Zero on-site emissions from fossil fuels
- A very low amount of energy with a view to cost-optimal level but at least (NZEB –10%)
- Supplied by: renewables from onsite, nearby, renewable energy communities; energy efficient DH&C; energy from carbon-free sources

## .1.4 Electricity Market Design

As part of the Green Deal Industrial Plan, the European Commission proposed a reform of the electricity market rules to accelerate the adoption of renewables, better protect consumers, and enhance industrial competitiveness. It entered into force in July 2024. The reform provides further

flexibility to increase the share of renewable energy in the grid and creates green jobs and growth. The new EMD entered into force in July 2024 and consists of a directive on common rules for the internal market for electricity and a regulation on the internal market for electricity. It amends the Directive on common rules for the internal market for electricity (EU/2019/944), the Regulation on the internal market for electricity (EU/2019/943) and the ACER Regulation that established the Agency for the Cooperation of Energy Regulators in 2009, first recasted in 2019. It also impacts the Wholesale Energy Market Integrity and Transparency (REMIT) Regulation (EU/1227/2011) and the revised Renewable Energy Directive.

With the changes to various legislations, the EU energy market shall become more resilient and energy prices for consumers and companies more independent from the short-term market. The key new provisions to strengthen the resilience of the EU energy market are long-term contracts, like **power purchase agreements** (EMD regulation, Article 19a) between an energy producer and a buyer, who agrees to purchase electricity at a fixed price, and the structuring of investment support with two-way contracts for difference. As power purchase agreements provide stable prices and predictable revenue for investors, they support the development of renewable energy projects. Contracts for difference (CfD) (EMD regulation, Article 19d) are the main way in which governments can now finance new electricity generation capacity in a few technologies. In **two-way contracts for difference**, governments guarantee a stable price for energy producers. If the market price is below the agreed price, the government pays the difference, if it is above, the producer pays back the excess, ensuring price stability and encouraging investment in renewable energy.

New rules also make it easier to integrate renewables into the system with **flexibility and storage**. The Agency for the Cooperation of Energy Regulators (ACER) estimated that the electricity system in Europe will require more than twice the current flexibility resources by 2030. Member States have to assess their flexibility needs at national level for at least 5-10 years (EMD regulation, Article 19e) and design adequate support schemes for flexibility such as energy storage, including underground thermal storage, or dispatchable power generation (e.g., geothermal). Other instruments include transmission networks, or demand management.

### .1.5 Net-Zero Industry Act (NZIA)

Via the Net-Zero Industry Act, European competitiveness of industries and technologies that are key to decarbonisation shall be boosted. The NZIA established a platform to support with representatives from the Commission and Member States to support the implementation of the industry act. The goal is to meet at least 40% of the EU's annual deployment needs by 2030, to create a Union market for CO2 storage and aims for an annual CO2 storage capacity to at least 50 million tonnes. The Act entered into force on June 29th, 2024.

Strategic net-zero technologies are selected based on the three following criteria:

1) technology readiness level
2) contribution to decarbonisation and competitiveness
3) resilience of the energy system

The list includes the following technologies:

- Solar photovoltaic and solar thermal technologies
- Onshore and offshore renewable technologies
- Battery/storage technologies
- Heat pumps and geothermal energy technologies
- Electrolysers and fuel cells
- Sustainable Biogas/Biomethane technologies

- Carbon Capture and Storage (CCS) technologies
- Grid technologies

Seven "pillars" for strengthening the competitiveness of Europe's net-zero technology manufacturing ecosystem.

1. **Enabling conditions for net-zero technology manufacturing** (faster permits, only one authority as reference, procedures for projects to apply and be recognised as net-zero strategic project by Member States)
2. **CO2 injection capacity** (storage)
3. **Access to markets** (facilitating access to markets in public procurement procedures and auctions, as well as schemes aimed at supporting private demand by consumers)
4. **Enhancing skills for quality job creation in net-zero technologies** (European skills Academies)
5. **Innovation** (regulatory sandboxes to test innovative net-zero technologies in a controlled environment for a limited amount of time)
6. **Governance** (Net-Zero Europe Platform, allowing the Commission to coordinate the above actions jointly with Member States)
7. **Monitoring**

The key NZIA provisions for geothermal focus on simplifying regulation, channelling investment into strategic technologies, skills and fostering innovation. The regulatory environment for geothermal, heat pumps and the other strategic technologies will be simplified through **streamlined administrative and permit-granting processes** giving priority status to net-zero strategic projects (Article 5). This includes single points of contact, online accessibility of information, maximum duration of permitting processes.

To **boost investment** in strategic technologies, **non-price criteria** are introduced in public procurement procedures and auctions (Articles 19-22). Auctions to deploy new renewable sources must prioritise investment in technologies that provide multiple services such as dispatchable or baseload renewable electricity, heating and cooling or sustainable critical raw material extraction and seasonal storage. Geothermal is able to provide all these services.

The NZIA aims to **enhance skills and create quality jobs** in net-zero technologies (Articles 23-25), by establishing dedicated training programmes, so called Net Zero Academies (to train 100,0000 workers within 3 years). Moreover, **net-zero regulatory sandboxes** will allow for the development, testing and validation of innovative net-zero technologies (Article 26).

The **Strategic Technologies for Europe Plan** (STEP [13]) is an initiative to financially support the NZIA. It seeks to reinforce, leverage and steer EU funds – existing and new – to investments in deep and digital, clean and bio technologies in the EU, and in people who can implement those technologies into the economy. STEP also introduces the Sovereignty seal – the EU quality label for sovereignty projects.

Net zero strategic projects are net zero technology manufacturing projects in the scope of the NZIA, that have been granted the strategic projects status by the Member State where they act or will be established.

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[13] Strategic Technologies for Europe Platform - European Union (STEP)

NZIA manufacturing project is:

- a planned commercial facility or an extension or repurposing of an existing facility to manufacture net-zero technologies,
- or an energy-intensive industry decarbonisation project (meaning the construction or conversion of the commercial facility of an energy-intensive business that are part of the supply chain of a net-zero technology and that are to reduce emission rates of CO2-eq of industrial processes significantly and permanently to an extent which is technically feasible).

Benefits of becoming a NZ strategic project:

1. priority status at national level for all administrative processes, as well as for the permit-granting process, including for environmental assessments and spatial planning (Article 15.1-2)
2. faster permitting via shorter overall time-limits for the duration of the entire permit-granting process (9-12 months) (Article 16.1-2)
3. discussed in the NZIA platform also in relation to providing advice on their financing (Article 19.2)
4. Membership in NZIA group, providing recommendations (Article 39)
5. urgent treatment in dispute resolution procedures, litigation, appeals, judicial remedies (Article 15.4)
6. may be considered in the overring public interest (with respect to exemptions in environmental legislation) (Article 15.3)

### .1.6 Critical Raw Materials Act

Proposed by the European Commission in 2023 and entered into force in May 2024, the CRMA aims to ensure the EU's access to a secure and sustainable supply of critical raw materials. The act establishes a list of 34 critical raw materials, which are crucial for strategic technologies used for green, digital, defense and space applications. The list includes **lithium**, essential for batteries, which is being extracted from geothermal brine in European regions such as the Upper Rhine Valley.

The Act sets benchmarks for the diversification of the EU supplies to reach by 2030:

- at least 10% of the EU's annual consumption for extraction,
- at least 40% of the EU's annual consumption for processing,
- at least 15% of the EU's annual consumption for recycling,
- no more than 65% of the EU's annual consumption from a single third country,

The Act **simplifies permitting procedures** for critical raw materials projects in the EU, reducing administrative burdens while maintaining high social and environmental standards. An important step for the uptake of the extraction of geothermal lithium and other raw materials. Additionally, selected strategic projects will receive support for access to finance and benefit from shorter permitting timelines—24 months for extraction permits and 12 months for processing and recycling permits. EU countries are also required to develop national programs for exploring geological resources and to establish one-stop-shops for permit granting.

**Sustainability and measures on circularity (Chapter 5)**
The CRMA contains provisions about Environmental CO2 footprint and information on CRM, the promotion of CRMs circular economy – increase waste collection, recycling and use of secondary RMs.

There is also a focus on extractive waste and use its potential for CRMs, by the development of standards for CRM value chain operations.

**Permitting process**

For the permitting granting process, Member states are required to establish a one-stop-shop and online procedure within 3 months of the date of entry into force of the CRMA (Article 9). This authority would be the sole point of contact for the project promoter in the permit-granting process leading to a comprehensive decision for a given CRMs project.

**Strategic projects**

The Act establishes a framework for the selection of **strategic projects** benefitting from support for access to finance and shorter permitting timeframes.

The permitting granting process shall not exceed 27 months for Strategic Projects involving extraction as in the case of geothermal minerals (Article *11*).

Criteria that will be considered for selecting the projects:

1. Contribution to the supply security
2. Technical feasibility
3. Sustainability
4. Cross-border benefits
5. Mutual benefits for the EU and third countries that are emerging markets or developing economies

The European Commission opened a first call for applications on 23 May 2024 (closed on 22 August 2024 with 170 applications of which 121 from the EU and 49 outside the EU) [14]. The next call will be open in the **1st quarter of 2025** [15].

**National exploration campaigns**

Article 19 depicts the provisions for the national exploration programme on CRMs. They include the following measures from Member States:

- mineral mapping at a suitable scale;
- geochemical campaigns, including establishing the chemical compositions of soils, sediments, and rocks;
- geoscientific surveys, such as geophysical surveys;
- processing of the data gathered through general exploration, including through the development of predictive maps;
- reprocessing of existing geoscientific survey data to check for unidentified mineral occurrences containing critical raw materials and carrier minerals of critical raw materials.

However, no additional financing will come from the EU for this!

**CRM Board (Article 35-36)**

The Board will be composed of representatives from all Member States (with voting rights) and the Commission (chairing the board).

Each Member State shall appoint a high-level representative to the Board (it is possible to appoint different representatives in relation to different tasks of the Board).

The Chair may invite representatives of industry, civil society, etc, as observers or to provide written contributions.

The Board shall meet at least: every 3 months for the assessment of applications for Strategic Projects, (b) every 6 months for the development of monitoring; (c) once a year in order to discuss the progress of the implementation of Member State obligations related to exploration.

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[14] Commission Receives High Number Of Applications Responding To Call For Strategic Projects Under The Critical Raw Materials Act (CRMA) - European Commission

[15] Guide for applicants: Strategic projects under the CRMA - European Commission

The Board is responsible to:

- periodically discuss the implementation of Article 9 and share best practices for the purpose of accelerating the permitting procedure
- propose to the Commission guidelines for the implementation of Article 9(1) to be taken into account by the single points of contact;
- periodically discuss the implementation of Strategic Projects
- provide advice to the Commission on the assessment of the set up of the joint purchasing system pursuant to Article 25;
- facilitate the exchange of best practices among Member States with the purpose of improving their national programmes pursuant to Article 26.

# 3. Overview of the upcoming EU legislation on geothermal development

With the new Commission in place, the initiatives have been announced, among those several are highly relevant for geothermal. The **Clean Industrial Deal** adds an industrial and *Made in Europe* element to the European Green Deal. It is the umbrella under which all of the EU's actions will be kept for the next five years. The latter together with the Affordable Energy Action Plan have been presented on February 26th by the European Commission. The **Affordable Energy Action Plan** is expected to drive many reforms and non-legislative initiatives for geothermal and other energy sources. The plan puts forward measures to lower energy costs and provides ways to save energy efficiently in the short term. These measures shall not only reduce burden on citizens but also for industries. It refers to investments into next-generation clean energy technologies, including geothermal.

The **Sustainable Agriculture Vision** will outline concrete steps to support farmers and rural communities to invest in sustainable practices, including reliable geothermal energy.
The **Affordable Housing Plan** is vital for geothermal. Many social and affordable housing providers have turned to collective geothermal systems such as networked geothermal or district heating systems with some notable examples across Europe.
The **Electrification Action Plan**, the **Heating and Cooling Strategy** update, and, ideally, the **Geothermal Action Plan,** which sits in between these two activities, will identify investment bottlenecks and remedial solutions.

## 3.4. 2025: Clean industrial deal

Since the new mandate of the European Commission in 2024, competitiveness and prosperity of the EU have been the highest priorities on its agenda. In this context, the Clean Industrial Deal[1] has been published on February 26th, 2025, as a guiding document for the upcoming political cycle and in support of European industries. The Clean Industrial Deal will mobilise over €100 billion to support EU-made clean manufacturing projects, a value of the European manufacturing market of €100 billion by 2030, and will create 500,000 new jobs.

The Deal builds on internal and external political developments, the Draghi report and the engagement of industry leaders, but also social partners and civil society. The Competitiveness Compass, published in January 2025 is a key foundation to the Clean Industrial Deal, setting clear growth targets of a 17% share of the global GDP generated by the EU's single market, €10 trillion total savings held by European households and trade agreements with 76 countries. It clearly states the need to close the innovation gap in Europe by creating a friendly environment for young companies, helping big companies adopt new technologies, including AI, and supporting the development of new technologies by simplifying rules and laws. Reducing dependencies as well as decarbonising the European Economy remain central elements of the Competitiveness Compass.

The Deal addresses resilience, both in manufacturing but also to climate change. Consequently, the two major goals are the acceleration of decarbonisation and securing a European future with key manufacturing. Particularly important is the power that decarbonisation will have on the growth of European industries. The Deal will support European industries, facing high energy costs and high, sometimes unfair, global competition. It will allow for clear plan investments, ensure competitiveness while reaching the 2050 goal of a fully decarbonised economy.
Additionally, the Deal announces action by the Commission to reduce bureaucratic burden on the private sector and make the regulatory environment more efficient. Concrete actions include lower energy prices, creating jobs and adequate conditions for industries to thrive.

While boosting European companies, the Deal highlights European production capacity, adding to the well-known innovation capacity. It is centred around energy-intensive industries and clean tech – two highly interlinked sectors. In parallel, circularity and reducing raw material overdependencies on non-EU countries while maximising the EU's limited resources are key elements of the Deal. Tailored action to address these elements was announced, such as Action Plans for e.g. steel and metals.
Across the Deal, innovation to accelerate the transition, ensure European prosperity and competitiveness, is mentioned repetitively. The deal will stimulate engagement with industries, in particular SMEs and key sectors for the European economy, such as automotive, steel and metals, chemicals, transport and bioeconomy.
The Deal is divided into 6 chapters, each addressing a business driver to establish a thriving new European industrial ecosystem. These focus on the following:

1. **Access to Affordable Energy**

Competitiveness is built on the affordability of energy. The Commission adopted the Affordable Energy Action Plan, which entails the acceleration of electrification and roll-out of clean energy, completing the internal energy market physically and energy efficiency and cutting dependence on imported fossil fuels. Furthermore, lowering energy bills is essential, as well as promoting energy efficiency. This includes the launch of a pilot programme for corporate Power Purchase Agreements together with the European Investment Bank and simplified State Aid rules. A European Grid Package has also been announced. Additional sub-chapters focus on the acceleration of the roll-out of clean energy manufacturing and ensuring well-functioning gas markets that deliver.

2. **Lead markets: boosting clean supply and demand**

This chapter focuses on building a business case for decarbonised products. Non-price criteria in public procurement and inventive for private purchases are addressed. With a connected publication – the Industrial Decarbonisation Accelerator Act – the demand for EU-made clean products will grow, motivated by public and private procurement criteria around sustainability, resilience and 'made in Europe'. The public procurement framework will be reviewed in 2026 to adapt it accordingly. Moreover, renewable and low-carbon hydrogen will be promoted.

3. **Public and private investments**

To finance the clean transition, the Deal will mobilise over €100 billion in support of clean, EU-made production. To strengthen the EU level funding, the Commission will establish a new Clean Industrial Deal state aid framework, propose an industrial decarbonisation bank and reinforce the Innovation Fund. Horizon Europe funds will also be dedicated to stimulating research and innovation. Further, the InvestEU Regulation will be amended, increasing the amount of financial guarantees, mobilising up to €50 billion for clean tech, mobility and waste reduction. Thus, private investment shall be leveraged.

4. **Powering the circular economy: a secure access to materials and resources**

This chapter focuses on critical raw materials, crucial for Europe's industry and decarbonisation. To reduce dependencies and enhance circularity, the Commission will build a mechanism for European companies to aggregate their demand for critical raw materials, create an EU critical raw material centre for joint purchases and in 2026, adopt a Circular Economy Act with the goal of 24% of materials being circular by 2030. This includes the fast implementation of the Critical Raw Materials Act (CRMA). Innovation is clearly mentioned as a driver for circularity.

5. **Global markets and international partnerships**

To ensure cooperation with reliable global partners, the Commission will set up Clean Trade and Investment Partnerships, trade defence and other instruments and simplify and strengthen the Carbon Border Adjustment mechanism. The goal is to have fair competition, mutual benefits and a secure and resilient European economy. This should be reached by promoting and protecting, and establishing a level playing field for the EU industry. In early 2026, the Commission will adopt guidelines on key concepts for the Foreign Subsidies Regulation and accelerate the use of Trade Defence Instruments.

6. **Skills and quality jobs for social fairness and a just transition**

This chapter addresses the just transition, with the goal of having every person and community benefit from the clean transition. To support the transition to a low-carbon economy, the EU workforce needs the right skills in clean tech, digitalisation and entrepreneurship. Via a Union of Skills, the Commission will invest in workers, skills development and the creation of quality jobs. Additionally, Erasmus+ will provide up to €90 million to reinforce education and training programmes.

## 3.5. 2025: new policy initiatives

The publication of the Clean Industrial Deal was accompanied by an **Action Plan for Affordable energy**. The plan addresses the need for affordable energy to deliver on competitiveness targets, next to the fact that 46 million Europeans are affected by energy poverty. The plan is based on 4 pillars:

1. Lowering energy costs for all,
2. Completing the Energy Union,
3. Attracting investments and ensuring delivery,
4. Being ready for potential energy crises .

To reach those goals, 8 concrete actions have been identified with the aim of delivering several during the year of 2025.

- **Making electricity bills more affordable**: Particular efforts are needed in the field of network charges and taxation, for which incentives will be provided by the Commission. These include efficient use of the grid, lowering energy system costs, new grid investments and recommendations to EU Member States on lower national taxes on electricity.
- **Bring down the cost of electricity supply**: Existing EU electricity rules need to be applied, permitting procedures have to be accelerated, grids reinforced, and flexibility boosted. This could result in -40% wholesale electricity prices.
- **Ensure well-functioning gas markets**: cooperation between energy and financial regulators and regulatory oversight is required to get EU gas wholesale prices to pre-crisis levels. The EU will protect buyers and explore better deals for natural gas imports.
- **Energy efficiency – delivering energy savings**: Support by the Commission will be provided to energy efficiency solution providers through the Energy Efficiency Financing Coalition, and updating the energy labelling and ecodesign for products. This could raise savings to €162 billion in 2030 (€120 billion in 2023).
- **Complete the Energy Union**: This includes a fully integrated energy market via enhanced coordination to avoid a significant rise in costs by 2040 if no action is taken.
- **A tripartite contract to ensure affordable energy for Europe's industry**: These can counteract high energy prices and market uncertainty by bringing the public sector, energy producers and energy-consuming industry together to create a favourable investment climate.
- **Guarantee security of supply for price stability**: This is critical for economic resilience and ensures access to affordable energy and avoids extreme price volatility subject to external influences such as geopolitical tensions, extreme weather events or attacks.
- **Price crisis preparedness**: The Commission will guide Member States to incentivise consumers to reduce demand at specific times and allow transmission system operators and national regulatory authorities to temporarily increase electricity flows in cross-border interconnectors, in certain situations.

The **Vision for Agriculture and Food**, published on February 19th, 2025, addressed the entire value chain within the EU and beyond, aiming to build up trust and create further dialogue.
The **Union of Skills**, announced on March 5th, 2025, will allow for the delivery of higher level of basic skills, provide lifelong upskill and reskill opportunities, will facilitate recruitment by businesses across

the EU and attract and retain the skills and talents. Via a strong governance foundation, it will be able to build on the new European Skills High-Level Board.
The communication mentions the need to increase the energy workforce by 50% by 2030 to ensure the adequacy of renewable energy deployments, as well as grid and energy efficiency technologies. The latter shall be supported by a STEM Education Strategic Plan, published in parallel.[7]

With the kick-off of the new Commission's mandate, a set of simplification strategies is gradually published under the term: **Omnibus**. In February 2025, a proposal for a directive to simplify sustainability measures was published.[8] The latter shall boost competitiveness and unlock additional investment capacity. It addresses legislations for sustainable finance reporting, sustainability due diligence, EU Taxonomy, carbon border adjustment mechanism, and European investment programmes. The goal is to reduce complexity for businesses, especially SMEs, while keeping up the possibility for sustainable finance for the clean transition for companies.

A financial relief of over €6 billion is expected on the administrative level, and the focus should go back to achieving the European Green Deal objectives.

On May 6th, 2025, the **Roadmap towards ending Russian Energy imports** was presented. This communication responds to the rebound in energy imports from Russia to the EU in 2024, despite the reduction from 45% to 19% of Russian gas imports, thanks to the REPowerEU Plan from 2022. The idea is to have a gradual removal of Russian oil, gas and nuclear energy from the EU energy market. By the end of 2025, EU Member States will prepare national plans indicating their contribution to phasing out energy imports from Russia. In parallel, the EU's energy transition and diversification continue to reduce risks on security of supply and market stability.

Measures include stopping all imports of Russian gas by the end of 2027, taking action on Russia's 'shadow fleet' transporting oil and restricting new supply contracts for uranium or other nuclear materials deriving from Russia. A legislative proposal will follow in the next month.

The Commission has officially proposed a **new 2040 target**[9] emission reduction target, to be embedded in the EU's Climate Law. Published on July 2nd, 2025, the 2040 EU climate target should be 90% in net greenhouse gas emissions compared to the 1990 levels. This target will set certainty for investors, innovation and industrial leadership while increasing energy security. The target is in line with current initiatives such as the Clean European Deal, builds on the legally binding reduction target of 55% by 2030 and responds to a recently released study by Eurobarometer revealing strong citizen support for EU climate action. The proposal refers to geothermal twice, highlighting its key role amongst other RES for the energy transition. The publication presents certain flexibilities for Member States, such as international credits starting in 2036, the use of domestic permanent removals and cross-sector cooperation to help achieve the target. The proposal highlights the need for enabling conditions such as a competitive European industry, a fair transition and a level playing field with international partners. The proposal is now subject to discussions in the European Parliament and Council [10].
Additionally, the Commission published the **Recommendation on Tax Incentives** to incentive investments in clean technologies and industrial decarbonisation.

**Further policy initiatives** expected for the year 2025 and impacting the geothermal innovation and research branch are the multiannual financial framework (MFF) and the Affordable Housing Action Plan.

# 4. Research, development and innovation relating to geothermal projects

The **Multi-Annual Financial Framework (MFF),** otherwise known as the EU's seven-year budget, will be published in 2025. It indicates the size of the EU funds available funds available for energy, infrastructure and research.

The first mapping of relevant policy and regulatory issues presented the following funding opportunities and related activities and institutions:

- Emission Trading Scheme, Effort Sharing Decision and the Modernisation Fund
- Innovation Fund
- European Structural and Investment Funds
- Financial Instruments
- Horizon Europe
- Clean Energy Transition Partnerships
- Research Fund for Coal and Steel
- TEN-E revision
- European Investment Bank
- Strategic Technologies for Europe Plan

The Annual Monitoring report on the RD&I activities and their impact on 2024 (D6.5) provides more details about the funding opportunities for the geothermal sector. The second monitoring for 2025 (D6.6) looks at the RD&I activities in the first half of 2025.

# 5. Conclusions

The EU's new policy initiatives for 2025 will significantly impact the geothermal sector by creating a more favourable environment for investment, deployment, and innovation. The introduction of a revised State Aid Framework and the recommendation on tax incentives will allow Member States to provide more flexible and targeted financial support for geothermal projects, including industrial heat applications and manufacturing capacity.

The explicit inclusion of geothermal among the essential net-zero technologies in the EU's 2040 climate target roadmap further reinforces its strategic importance. Together, these initiatives represent a shift from fragmented support to a more integrated, enabling policy framework that positions geothermal energy as a central pillar of Europe's clean energy transition.