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Phasing out coal in Romania: An assessment of the governance framework

Ana-Maria Niculicea

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Alina Chiriță (Arsani)

Mihnea Cătuți

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A study by:

Energy Policy Group (EPG)
Str. Termopile 1, Sector 2, București
www.enpg.ro, office@enpg.ro

About EPG:

The Energy Policy Group (EPG) association is an independent think-tank, specialised in energy and climate policies. Founded in 2014, EPG gathers experts who are working together in international research projects. EPG is highly focused on the larger context of European policies and of the global trends in its endeavour to promote a constructive dialogue on decarbonisation among the decision makers and the larger audience.

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Sumar executiv

Eliminarea treptată a cărbunelui este una din componentele principale ale eforturilor de decarbonare a sectorului energetic. România s-a alăturat în acest an majorității statelor europene care au adoptat planuri pentru eliminarea cărbunelui. Acesta este un lucru cu adevărat remarcabil, având în vedere lipsa unui consens sau convingere politică pentru un astfel de demers și mai ales în condițiile actuale – criza gazelor naturale cauzată de Rusia a afectat întregul sector energetic prin creșterea fulminantă a prețurilor. Drept răspuns, unele state europene au amânat închiderile planificate ale unor capacități pe cărbune, ceea ce poate într-adevăr oferi o soluție temporară în timpul crizei, în ciuda unei creșteri a emisiilor. Cu toate acestea, trebuie înțeles că astfel de măsuri de urgență sunt doar temporare și nu ar trebui să afecteze planurile pe termen lung de eliminare completă a cărbunelui. Situația actuală oferă o oportunitate unică de a planifica o tranziție *coal-to-clean* direct către surse de energie curată, fără o tranziție intermediară către gaze. Criza energetică a expus vulnerabilitățile create de dependența de importuri de gaze fosile.

În acest context, provocarea principală este susținerea unui calendar cât mai ambițios de eliminare treptată a cărbunelui, într-un mod care să poată asigura securitatea aprovizionării, suportabilitatea prețurilor și o tranziție justă în regiunile carbonifere. Un plan coerent de retragere a capacităților pe cărbune rămâne în continuare extrem de important pentru evitarea unei prăbușiri haotice a sectorului și pentru a oferi suficient timp pentru realizarea investițiilor necesare în reddezvoltare economică. România a reușit acest lucru prin adoptarea legii decarbonizării pentru realizarea reformei asumate în Planul Național de Recuperare și Reziliență. Legea 334/2022 impune o dată limită clară pentru eliminarea cărbunelui pe baza unui calendar coerent, introduce măsuri de protecție socială, instituie mai multe comitete guvernamentale și consultative pentru implementarea planului și stabilește penalități financiare pentru nerespectarea termenelor. Ar mai trebui clarificate unele aspecte cum ar fi modul în care rezervele tehnice vor fi selectate și modalitatea de remunerare a acestora, elaborarea unor măsuri mai cuprinzătoare pentru tranziția justă, asigurarea unei mai bune participări publice și aplicarea adecvată a măsurile adoptate. Mai trebuie menționat și faptul că Planurile Teritoriale de Tranziție Justă ale României au fost aprobate de Comisia Europeană, stabilind cadrul pentru reconfigurarea economică a regiunilor carbonifere.

Deși cărbunele a reprezentat în ultimul secol o componentă de bază a dezvoltării economice a României, contribuția acestuia în mixul energetic s-a redus în ultimul deceniu ca urmare a imperativului de reducere a emisiilor și a dezvoltării capacităților de energie regenerabilă. Majoritatea capacităților pe cărbune sunt deținute de Complexul Energetic Oltenia (CEO), care trece printr-un proces de restructurare după mai mulți ani de dificultăți economice. Compania își va retrage complet capacitățile pe cărbune, înlocuindu-le parțial în principal prin investiții în capacități CCGT pe gaze, precum și în fotovoltaice. În ciuda realizării unor profituri neașteptate în anul 2022, CEO va fi (posibil dublu) subvenționată pentru costurile de CO₂ impuse prin ETS. Planurile de retragere a celorlalte capacități pe bază de cărbune din țară se concentrează într-un

mod similar pe investiții în noi capacități ce utilizează gazul. Acest lucru nu doar că nu este sustenabil, dar poate crea investiții cu costuri irecuperabile.

Pe baza unei evaluări de bune practici din alte țări europene, acest raport subliniază importanța legiferării unui calendar ambițios de eliminare treptată a cărbunelui. Acest lucru poate fi realizat prin mai multe metode, cum ar fi stabilirea unui preț minim al dioxidului de carbon sau stabilirea unui calendar fix de retragere a termocentralelor. Această a doua opțiune pare mai potrivită pentru România, dar ar trebui analizat dacă un calendar cu limite de emisii de CO₂ impus sectorului de producție de energie electrică ar fi mai potrivit pentru eliminarea tuturor combustibililor fosili pe termen lung. În plus, mai trebuie menționat că asigurarea unei tranziții juste presupune mai mult decât atenuarea impactului pierderii locurilor de muncă și necesită red dezvoltarea economică a regiunilor carbonifere. Finanțarea tranziției nu ar trebui să vină din surse exclusiv europene, ea trebuind combinată cu alte fonduri naționale și private. De asemenea, trebuie asigurată implicarea tuturor părților afectate, cu precădere a comunității locale.

Cadrul de guvernare pentru eliminarea treptată a cărbunelui poate fi îmbunătățit prin:

- Clarificarea unor aspecte legate de legislația pentru eliminarea cărbunelui, cum ar fi care este metoda prin care rezervele tehnice vor fi remunerate.
- Efectuarea unei modelări dedicate pentru eliminarea cărbunelui în România pentru a înțelege mai bine care este cel mai fezabil calendar de implementare având în vedere actualele condiții de piață precum și obiectivele din REPowerEU și Fit for 55.
- Implementarea principiului poluatorul plătește prin eliminarea subvențiilor pentru costurile de CO₂ ale termocentralelor pe bază de cărbune.
- Asigurarea unei tranziții *coal-to-clean* bazată pe dezvoltarea urgentă a resurselor de energie regenerabilă și a tehnologiilor care pot asigura flexibilitatea sistemului, cum ar fi bateriile și alte forme de stocare a energiei.
- Evitarea investițiilor la scară largă în capacități supradimensionate pe bază de gaz fosil care riscă să devină investiții cu costuri irecuperabile. Proiectele CCGT ar trebui dimensionate conform nevoilor unui viitor mix energetic dominat de energie regenerabilă.
- Conferirea unei puteri decizionale sporite pentru comitetul consultativ pentru o mai bună transparență și îmbunătățirea participării publice în procesul de implementare.
- Utilizarea tuturor instrumentelor disponibile de ajutor de stat pentru atragerea anumitor lanțuri valorice cheie în regiunile carbonifere, cum ar fi cele ale bateriilor, electrolizoarelor, tehnologiilor regenerabile și mașinilor electrice.
- Crearea unei instituții specializate pentru tranziția justă cu propriile resurse financiare și de personal pentru a contribui la coordonarea procesului de tranziție în zonele carbonifere, pentru implementarea PTTJ-urilor și pentru mai buna utilizare a programelor de dezvoltare naționale în regiunile afectate de tranziție.
- Colaborarea cu organizații transnaționale pentru eliminarea cărbunelui, cum ar fi PPCA.

Executive Summary

Phasing out coal represents a cornerstone of decarbonising power production. Most European countries have committed to phaseout coal within the next decade, with Romania joining the list this year. This represents a remarkable development given the context in which legislation for retiring Romania's lignite and hard coal power plants was passed – the fossil gas crisis triggered by Russia spilled over in the entire energy sector leading to skyrocketing prices. As a response, some EU countries have delayed phaseout plans, which can provide much needed relief in times of crisis, despite the temporary increase in emissions. Nonetheless, it must be understood that such emergency measures are temporary in nature and should not affect the long-term commitments to phaseout coal capacities. These developments rather offer the opportunity to accelerate the deployment of renewable energy in order to ensure a coal-to-clean transition which would no longer rely on an intermediary transition to gas. The current energy crisis has laid bare the risks associated with the EU's dependence on fossil gas imports.

In this context, the main challenge is to sustain a coal phaseout that is as swift as possible while also ensuring security of supply, affordable electricity, and a just transition in coal-dependent regions. A coherent phaseout calendar remains just as necessary for avoiding a disorderly crash of the sector and for allowing sufficient time to build realistic plans for economic redevelopment. Romania did just that by passing legislation to fulfil the commitment in its National Recovery and Resilience Plan to eliminate coal from the electricity mix by the end of 2032. Despite some flaws and being less ambitious than the initial legislative proposal, Law 334/2022 sets a clear coal exit date, includes power plant closure benchmarks, introduces social protection measures, establishes governmental and advisory bodies to manage the implementation process and sets sanctions for non-compliance with the calendar. Some issues that remain to be addressed are more transparency on how technical reserves will be created and how will they be remunerated, elaborating more comprehensive just transition measures, better ensuring public participation, and properly enforcing the legislation. Romania's Territorial Just Transition Plans have also been approved by the Commission, creating the framework for the economic redevelopment of coal regions such as Gorj and Hunedoara.

While coal has been a crucial component of Romania's economic development over the past century, its contribution to the energy mix has been declining rapidly over the last decade, given the imperative to reduce GHG emissions and the deployment of renewable energy sources. Most of the remaining coal-fired power plants are owned by Complexul Energetic Oltenia (CEO), which is undergoing a restructuring process following years of financial difficulties. The company will retire its coal fleet, to be replaced mainly with new capacities of gas CCGTs and also solar PVs. Despite experiencing windfall profits in 2022, CEO will receive (potentially double) subsidies for covering its CO₂ costs incurred by the ETS. The plans for the retirement of the other coal capacities in the country similarly revolve around investments in new fossil gas capacities, which raise questions of sustainability and potentially creating stranded assets.

Based on an assessment of best practices and other European experiences with phasing out coal, this report highlights the importance of setting into law ambitious target for a coal exit calendar. Different policy instruments can be used to implement this, such as minimum CO₂ price floors or scheduled retirements of individual power plants. The latter appears to be most effective in a country like Romania, but it should be further analysed whether a calendar of decreasing GHG emissions standards for power production could be more suitable for phasing out all fossil fuels from the electricity mix in the long run. Besides, ensuring a just transition from coal does not stop at mitigating the immediate impact on job losses, as it also entails investing in the economic redevelopment of the coal regions. Funding the transition should not stop at accessing European finance - synergies between EU funds and national or private financing streams are also important. Stakeholder and community engagement also need to be ensured to foster public acceptance.

The governance framework for phasing out coal in Romania can be improved by:

- Clarifying the outstanding issues related to the coal phaseout legislations such as how will technical reserves be remunerated.
- Running dedicated modelling for phasing out coal in Romania to better understand what is the most feasible coal phaseout calendar in the current market conditions and taking into consideration the climate ambitions in REPowerEU and the Fit for 55 package.
- Implementing the polluter pays principle by eliminating subsidies for CO₂ costs incurred by coal-fired power plants.
- Ensuring a coal-to-clean transition based on the urgent deployment of renewable energy sources combined with flexibility technologies such as batteries and other forms of storage.
- Avoiding large-scale investments in oversized fossil gas-fired capacities that risk turning into stranded assets. CCGT projects should be scaled at capacities suitable for a future renewable-dominated electricity mix.
- Further empowering the Advisory Committee in the decision-making process as a way to increase transparency and public participation in the implementation of the coal phaseout process.
- Leveraging all available state aid instruments for attracting key value chains in coal regions, such as those of batteries, electrolysers, renewable technologies, and electric vehicles.
- Considering the creation of a specialised just transition institution with dedicated funding and staff that can coordinate the transition process in coal regions, the implementation the TJTPs, and help better deploy national financial resources in carbon-intensive regions.
- Engaging with transnational organisations and coalitions working on global coal phaseout commitments such as the PPCA.

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List of Acronyms

ANRE	National Energy Regulatory Authority
CCGT	Combined Cycle Gas Turbine
CEH	Complexul Energetic Hunedoara
CEO	Complexul Energetic Oltenia
DSO	Distribution System Operator
EC	European Commission
EPG	Energy Policy Group
ETS	Emission Trading System
EU	European Union
GEO	Government Emergency Ordinance
GHG	Greenhouse Gas
IEA	International Energy Agency
JTF	Just Transition Fund
NRRP	National Recovery and Resilience Plan
SMR	Small Modular Reactor
SPV	Special Purpose Vehicle
TJTP	Territorial Just Transition Plan
TSO	Transmission System Operator

Introduction

The Net Zero Emissions scenario of the International Energy Agency (IEA) shows that in order to meet climate neutrality by 2050, coal-fired power plants in developed economies need to be phased out by 2030 (IEA, 2022). The unabated use of coal is one of the most greenhouse gas (GHG) emissions intensive means of producing electricity. At EU level, estimations from the impact assessment for the Fit for 55 package show that coal power generation needs to be reduced by approximately 75% by 2030 to achieve the 55% GHG emissions reductions compared to 1990 levels (EC, 2020b). In line with climate commitments, 14 EU member states have already outlined plans to phaseout coal by 2030 (Europe Beyond Coal, 2022b).

In this context, a coal phaseout plan represents a cornerstone of the decarbonisation of the Romanian power sector. As part of the National Recovery and Resilience Plan (NRRP), the Romanian authorities have already committed in one of its reforms to introduce legislation for phasing out coal by the end of 2032. This commitment was implemented in 2022 through the Government Emergency Ordinance (GEO) 108/2022 and shortly after in the draft law Plx. 548/2022 approved by Parliament. The draft law was promulgated by the President and published in the Official Journal on the 5th of December 2022 as Law 334/2022. Interestingly, during the legislative process, the final date of the phaseout calendar was moved to the end of 2030, only to be later pushed back to the original commitment in the NRRP. Despite some flaws, this represents a landmark piece of legislation outlining a calendar for the orderly transition away from coal and making a decisive step towards the decarbonisation of the electricity sector in Romania.

The energy crisis in the aftermath of the Russian invasion of Ukraine has drastically changed the context within which this phaseout is being implemented. The sharp increase in wholesale electricity prices caused by the fossil gas crunch has determined many European countries to take emergency measures to ensure uninterrupted energy supplies to households and domestic industry. These measures also include postponements of the closure of some coal power plants and a slowdown of existing phaseout plans. Such reactions are normal and necessary as they can provide much needed relief in times of crisis, despite the increase in emissions. Table 1 highlights some key European countries that decided to delay coal plant closures this year.

Nonetheless, it must be understood that such emergency measures are temporary in nature and should not affect the long-term commitments to phaseout coal capacities. This view was enforced by the Vice-President of the European Commission Frans Timmermans back in May when he declared that there are 'no taboos' in tackling the energy crisis, referring to the option for some countries to delay coal phaseout plans (Politico, 2022a). However, he added that this may also represent an opportunity to accelerate the deployment of renewable energy to ensure a coal-to-clean transition which would no longer rely on an intermediary transition to gas. The current energy crisis has laid bare the risks associated with the EU's dependence on fossil gas imports. The EU has now embarked on an irreversible transition to eliminate Russian gas imports.

Table 1. Changes in coal phaseout plans in 2022 in European countries

#	Country	Measure
1	Finland	A 560 MW idle coal-fired power plant owned by the private company Fortum was set to be restarted in September (Reuters, 2022b).
2	France	The Emile Huchet 647 MW coal power plant was announced to be operational during the 2022-2023 winter, thus delaying the country's early 2022 phaseout plans to 2023 (Europe Beyond Coal, 2022b).
3	The Netherlands	The 35% cap on coal-fired energy production was lifted, but the government announced it would still meet the 2030 deadline for coal phaseout (Reuters, 2022a).
4	Germany	The German government temporarily restarted the coal-fired plants in reserve. The 876 MW Heyden coal power plant restarted its operation in August 2022. The Mehrum plant in Hohenhameln and Steag also announced they will do the same (DW, 2022). It is estimated that Germany will reopen around 10 GW of coal capacity (Bloomberg, 2022).
5	Austria	The authorities announced in June 2022 that the restart of the 246 MW Mellach coal-fired power plant as an emergency measure (Europe Beyond Coal, 2022b).
6	Spain	Spanish authorities approved the decommissioning of a 1.4 GW coal power plant. Two of the four units will be fully closed but the closure of the remaining two will depend on the development of the energy crisis (Enerdata, 2022).
7	Italy	The reopening of coal-fired power plants was envisaged as a measure by the former prime minister Mario Draghi (The Local, 2022a). Another proposed measure is increasing the output of still operating coal-fired and oil-fired power plants (Reuters, 2022c).
8	Denmark	The government ordered Orsted to reopen the Esbjerg Power Station unit 3 (370 MW), which was scheduled to be decommissioned by end of March 2023, and the Studstrup Power Station unit 4 (360MW), which was already closed in 2020. It is envisaged that the power plants will be active until the summer of 2024 (The Local, 2022b).

9	Greece	The government announced that the plans to close any lignite fired power plant are to be pushed back to 2028, while mining activities will further increase by 50% (Ekathimerini, 2022).
10	Czech Republic	As demand for coal has risen, the Czech government decided to delay until 2025 the closure of mining activities that were supposed to end this year (AP News, 2022).
11	Hungary	It was announced that the last coal power plant, Matra, which was scheduled to be closed by 2025, will be operational until 2029 (Euractiv, 2022a).
12	Poland	New imports of coal were announced, as Poland is heavily dependent on coal for domestic heating and cannot meet the demand with its own reserves (Politico, 2022b). Moreover, the Polish State Assets Minister announced that the closing of mines will be slowed down, but the final deadline set for 2049 will be maintained (Euractiv, 2022b).
13	Slovakia	The authorities still plan to respect the coal phaseout plan and close the 266 MW Novacky plant by the end of 2023 (Europe Beyond Coal, 2022c).
14	The UK	It has been announced that the government asked several companies to delay the closure of their coal power plants (or keep them on standby) such as the one in Nottinghamshire or Ratcliffe-on-Soar in order to ensure security of supply during the upcoming winter (The Guardian, 2022).
15	Romania	The Romanian parliament passed the much-needed legislation on coal phaseout in the middle of the energy crisis. The law stipulates that by the end of 2022, 660 MW coal-fired energy capacities should be closed and transferred in technical reserve. As the most recent statement of the Ministry of Energy shows, all capacities scheduled to be closed will become, in fact, technical reserves (Infofinanciar, 2022).

In this context, the main challenge is to sustain a coal phaseout that is as swift as possible while also ensuring security of supply, affordable electricity, and a just transition in the coal-dependent regions. A coherent phaseout calendar remains just as necessary for avoiding a disorderly crash of the sector and for allowing sufficient time to build realistic plans for the economic redevelopment of coal regions.

Previous research by EPG and partners (2020) has shown that a faster phaseout in Romania by 2027 could simultaneously lower the need for granting additional state aid for maintaining unprofitable power plants operational (including compensation for the ETS allowances), while also avoiding sudden spikes in wholesale electricity prices. The modelling results show that after 2026

no lignite power plant in Romania will be economically viable, while a 2025 phaseout date would result in sudden increases in electricity prices. EU-level modelling conducted by Agora Energiewende and enervis (2021) has similarly shown that an accelerated coal phaseout calendar could ensure an exit from coal before 2030 in all member states. However, these analyses were conducted before the spike in wholesale electricity prices of this year, which has enabled Romanian coal companies to make significant windfall profits (CEO, 2022). Therefore, the economic situation of coal power plants has drastically improved this year, as fossil gas-based power generation has become the costlier alternative in the merit order. To reflect the current market conditions, dedicated modelling for Romania should be re-done, with the purpose of exploring if a faster coal phaseout deadline is still feasible.

Besides the importance of setting an ambitious calendar, the experience of other countries that have been implementing coal phaseout plans further indicate some key elements for designing a comprehensive and effective governance framework:

- There is a high need for awareness and acceptance in coal regions. Communication, especially at local level, needs to be transparent and honest, acknowledging the difficulties and challenges, not just the opportunities.
- Coal commissions can be important for engaging all stakeholders, but they are not a silver bullet and do not replace the need for political leadership.
- Setting ambitious targets is preferable, as a late phaseouts tend to lose momentum, which in turn may require future adjustments when political and market conditions change.
- Planning in advance can help maximise stakeholder involvement, secure political commitment and tailor an approach best suited for domestic circumstances.

Given the urgency of adopting the decarbonisation law by 30 June 2022, as set in the NRRP, many of these good practices could not be transferred to Romania within a short timeline. Political leadership for an ambitious plan was also blatantly missing. Therefore, in these circumstances, the legislation adopted by Parliament following the Ministry of Energy's emergency ordinance is still remarkable for a country that has long refused to even discuss coal phaseout. Starting from this baseline, this report looks into how the governance framework could be improved through further tweaks and complementary actions.

Therefore, this report seeks to assess the current situation in Romania, including of exiting legislation, in order to make recommendations for how the governance of the transition can be improved in coming years. The remainder of the report is structured as follows. **Section 1** presents a brief overview of the history and evolution of coal in Romania. **Section 2** looks at the best coal phaseout practices in the EU and highlights some key aspects that need to be considered during the transition to ensure an equitable transition in coal regions, to maximise the available funding streams, and to engage with all relevant stakeholders, including through international cooperation. **Section 3** assesses the legislative process and outcome of Romania's coal phaseout plan. The final part of the report makes recommendations for the way forward.

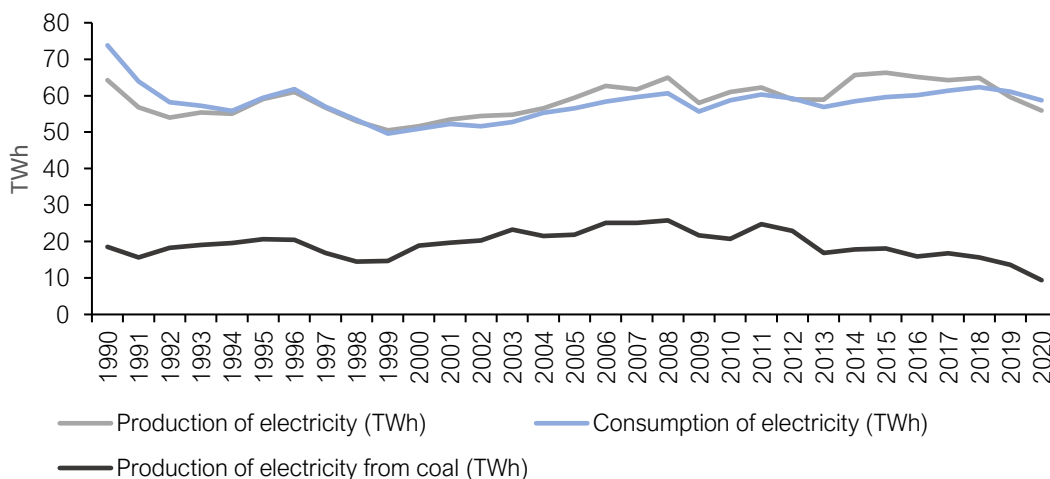
1. Coal in Romania: a brief overview

This chapter offers an overview of the evolution of the coal sector in Romania, highlighting its key position in the domestic power sector, but also its relative decline over the past two decades. The section also looks in part at the largest coal companies active in Romania today, delving into their transition plans for the coming years. Particular attention is given to Complexul Energetic Oltenia, the company operating the country's lignite-fired power plants, which is currently undergoing a significant restructuring plan that will eliminate the use of coal in the next decade.

The history of coal in Romania

For decades, coal has been one of the main sources of electricity production in Romania and has significantly contributed to the economic development of the country, supplying both industry and households with electricity and heat. As presented in Figure 1, the first years after the fall of the communist regime were marked by a decline in the total production of electricity, reflecting a contraction of the economy and the closure of many energy-intensive industrial facilities that were no longer competitive in a market economy. While overall electricity production decreased, coal remained a steady source of electricity production. During the transition period, between 1992 and 2000, coal accounted for about 30% – 35% of total electricity production, while from 2000 to 2011 the share of coal reached on average 38%, with the peak year being 2003 (43%).

Figure 1. Evolution of production and consumption of electricity in Romania

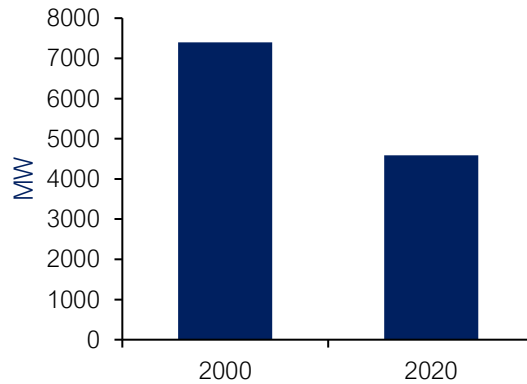


Source: EPG analysis based on Eurostat data (2022)

As of 2013, when renewable energy has started to be deployed at scale in Romania, the share of coal in total electricity production has declined from 29% to 17% in 2020. This was also reflected

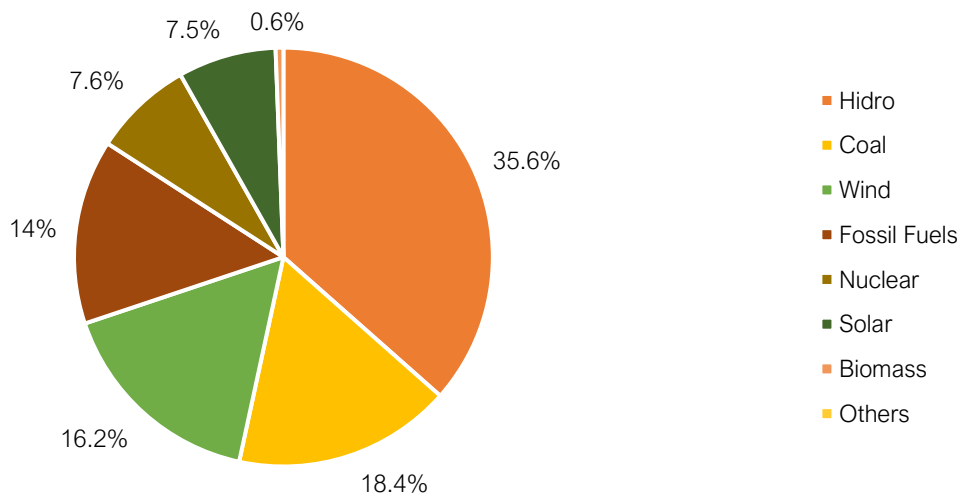
in total installed capacity. Between 2000 and 2022 the number of active coal power plants was reduced to half from 16 to 8, while the total capacity decreased by about 34% from 7,400 MW to 4,920 MW. The remaining capacities are concentrated in the Oltenia and Jiu Valley regions.

Figure 2. Evolution of active coal capacities between 2000 and 2020



Source: EPG analysis based on the Europe Beyond Coal (2022a)

Figure 3. Total capacities for electricity production by technology in Romania, 2022



Source: ANRE - National Energy Regulatory Authority (2022)

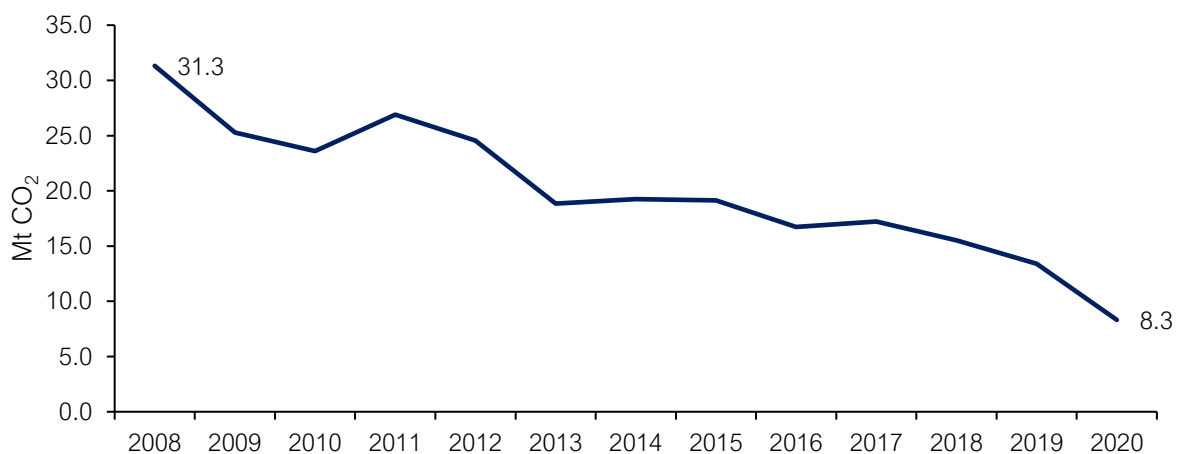
Figure 4. Coal power plants in Romania in 2000 compared to 2020



Source: EPG analysis based on the Europe Beyond Coal (2022a) data.

Given this decline in available capacity and the increasing exposure of the Romanian power system to carbon pricing through the EU ETS, the CO₂ emissions stemming from electricity production based on coal have decreased by 73% in just over a decade, from 31.3 MtCO₂ in 2008 to 8.3 MtCO₂ in 2020. The EU-ETS is the world's largest carbon market. Established in 2003, the EU ETS is a 'cap and trade' scheme that sets a cap on the total amount of CO₂ emissions, within which companies can trade emission allowances. The supply and demand for these allowances results in a carbon price which can fluctuate based on changing market dynamics and extraneous factors, in a way that can create uncertainty for long-term investments in emissions-intensive assets. In the long run, a decreasing cap ensures that emissions are gradually reduced and that scarcity is created, which in turn increases carbon prices. As coal power plants are one of the most carbon-intensive methods to produce electricity, carbon pricing has one of the highest impact on their production costs. As CO₂ allowance prices will continue to increase, coal-fired power plants will become increasingly uneconomical.¹

Figure 5. Evolution of CO₂ emissions from coal power plants in Romania



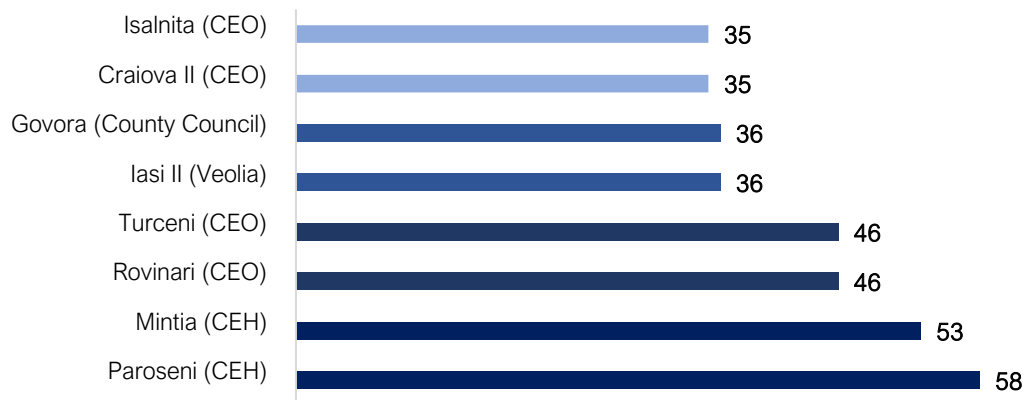
Source: EPG analysis based on Europe Beyond Coal (2022a)

The active coal power plants in Romania have an average age of 44 years. The oldest plant is Paroşeni (hard coal, owned by Complexul Energetic Hunedoara), which became operational in 1964, while the newest are Craiova II and Isalnita (lignite, owned by Complexul Energetic Oltenia), having been commissioned in 1987. Some of the active power plants have been modernised over the years to extend their lifetime, but half of them have exceeded their technical lifespan of 40

¹ The surge in wholesale electricity prices of 2022 has somewhat altered these dynamics, with numerous coal companies experiencing windfall profits as fossil gas-fired power plants closed the market at prices significantly higher than the production costs of coal-based electricity.

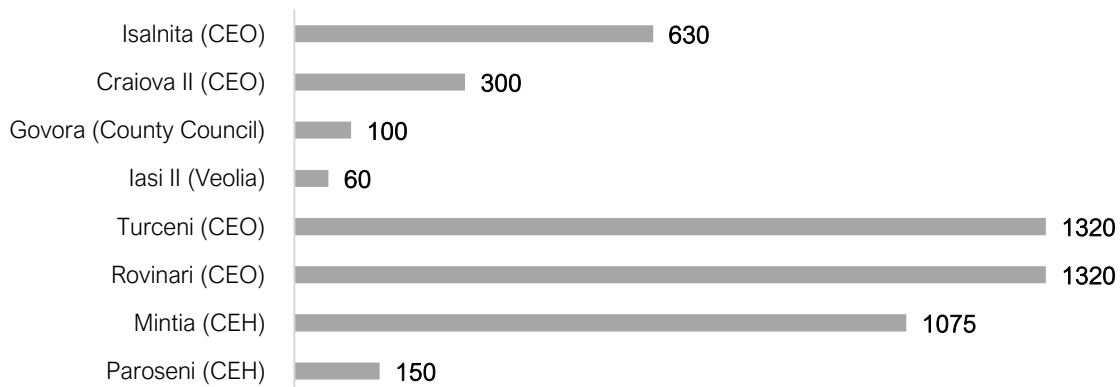
years. The Turceni and Rovinari power plants, both part of Complexul Energetic Oltenia, have the largest capacities of 1,320 MW each.

Figure 6. Age of active power plants in Romania, 2020



Source: EPG analysis based on Europe Beyond Coal (2022a) data.

Figure 7. Capacities of active power plants in Romania (MW), 2020



Source: EPG analysis based on Europe Beyond Coal (2022a) data.

Complexul Energetic Oltenia

Complexul Energetic Oltenia (CEO) is the biggest coal-fired electricity producer in the country, owning four power plants all running on lignite: (i) Craiova II, (ii) Işalniţa, (iii) Turceni and (iv) Rovinari, totalling 3,570 MW. Nine opencast mines supply lignite for the company.

CEO has been financially struggling at least since 2014 (CEO, 2014), both to operate and to pay its EUAs under the ETS. In this sense, the Romanian authorities decided to subsidise it through

injections of liquidity from public funds. Examples of such instances include: in 2016 it had received RON 12,3 million for social protection measures (Romanian Government, 2016), in 2020 a state aid rescue loan of EUR 251 million approved by the European Commission (EC, 2020a). The successive state aid interventions were in clear violation of the polluter pays principle, a cornerstone of the ETS. However, the European Commission conditioned the approval of these rescue loans, on the elaboration of restructuring plan for the company that would increase financial viability by gradually phasing out its lignite-fired capacities.

Thus, in August 2020, a restructuring plan was drafted and sent to the Commission for approval. The initial plan entailed diversifying the energy mix of the company by replacing an equivalent of 1,460 MW of lignite-fired capacity with (i) two fossil gas-fired CCGTs, (ii) 109 MW of PVs, and (iii) a 9.9 MW micro-hydropower unit, in addition to permanently closing the five lignite mines (EC Decision 2022/553, 2022). Moreover, 41% of the personnel would be laid off and environmental protection measures would be enforced, which included supporting the operating costs for mining and power generation assets (which included financing CO₂ allowances and compliance costs for ash, NO_x, SO₂) (EC Decision 2022/553, 2022). Financial measures were also included, such as optimisation of the bank loans, disposal or sales of secondary assets (EC Decision 2022/553, 2022). Overall, the initial plan was forecasting that by 2026, the energy mix of the company would be 41% lignite and 53% fossil gas, photovoltaic and hydropower, whilst mining activity would be reduced by 26% (EC Decision 2022/553, 2022).

The initial restructuring plan was heavily criticised for not delivering net emissions reductions at company level. As shown in a Greenpeace report from 2021, according to the figures presented in the plan, CEO's cumulated annual emissions would have been higher in 2030 compared to 2020 levels, increasing from 7 MtCO₂/year to 9 MtCO₂/year. Moreover, the financial costs of the CO₂ certificates would amount to EUR 3.68 billion between 2021 and 2030 (Greenpeace, 2021). These calculations raised serious concerns regarding the concrete decarbonisation contribution the plan was making and whether it was a credible approach for overcoming the company's financial struggles.

Citing several reasons, in February 2021 the Commission initiated a formal investigation procedure, requiring more clarifications from the Romanian authorities. Third parties were also invited to send comments on the restructuring plan (EC Decision 2022/553, 2022). In June 2021, a new version of the restructuring plan was sent again to the Commission for approval. The final version covering the period 2021-2026 was formally approved by the Commission. It envisages measures structured on four areas:

1. *Technical and technological:* in time, the existing lignite units will be either replaced or maintained in conservation as technical reserves. By 2026, 2,060 MW will be replaced with: (i) 1,325 MW CCGT capacity to become operational by mid-2026, (ii) 735 MW from

eight photovoltaic parks by 2024,² and (iii) 9.9 MW from a micro-hydropower plant by 2023. These new investments would represent 56% of the total installed capacities of CEO in 2026.

2. *Organisational and managerial*: which mainly focused on staff reductions such as layoffs and early retirements.³
3. *Environmental protection*: concerning limiting CO₂, NO_x and SO₂ emissions, dust from flue gases and elevating the slag and ash deposits.
4. *Financial*: concerning bank loan costs, the establishment of SPVs (special purpose vehicles) for implementing the investments, and the costs associated with feasibility studies, acquiring environmental permits, urbanism certificates, and technical connection approvals (EC Decision 2022/553, 2022).

The funds for the restructuring measures will be mainly provided through public sources, which includes governmental grants and loans, Modernisation Fund financing, CEO's own financial resources from sales of electricity or other non-core assets, the deployment of SPVs combining other investors' contribution with CEO's own assets, bank loans, and contributions from the other shareholders, especially *Fondul Proprietatea*.

It is envisaged that the implementation of the restructuring plan for the 2021-2026 period will amount EUR 3.94 billion. The total financial support that the government plans on granting CEO amounts to EUR 1.76 billion, while the aid from the Modernisation Fund would provide an additional EUR 895.3 million for partially funding the new two gas-fired units as non-priority investments and the eight PV parks as priority investments.⁴ It is estimated that for the 2021-2026 period, financial allocations worth EUR 48 million will be attributed to the maintenance of technical reserves, EUR 210 million to rehabilitating current assets, EUR 67 million to implementing the organisational and managerial measures mainly related to personnel restructuring for another and EUR 1.77 billion for acquiring CO₂ allowances (out of which the contribution through the budget of the Ministry of Energy accounts for EUR 1.09 billion, with the remainder EUR 74 million coming from the company's own funds). Among other measures, Craiova II, which at the moment is the main heat supplier to the city of Craiova, will be transferred to the local authorities and by 2026 the Romanian state will divest 20% of its CEO shares.

² The eight PV parks are going to be built on former or partially closed quarries of CEO (Ministry of Energy, 2022b).

³ It is estimated that the restructuring plan will see major layoffs. According to the press, by the end of the restructuring period there will only be left around 4,500 of employees out of the current 11,000 (Adevărul, 2022). In an older statement, the Ministry of Energy mentioned that by 2024, 4,000 employees will reach retirement age (Economica, 2020).

⁴ The priority investments benefit from full funding from the Modernisation Fund, while the non-priority ones will only benefit of 70% of the total value of funding (EC Decision 2022/553, 2022).

It is important to mention that this plan was devised before the spike in wholesale electricity prices of this year, which has enabled CEO to make significant windfall profits (CEO, 2022). The economic situation of coal power plants has drastically improved, as fossil gas-based power generation has become the costlier alternative in the merit order. Nonetheless, according to the restructuring plan, the costs associated with CO₂ allowances are still to be compensated through state aid, even if this may no longer be necessary to ensure the financial sustainability of the company on the short run. Even more problematic is the fact that the new GEO 153/2022 introduces modifications to the windfall tax applied to the Romanian energy sector in the wake of the energy crisis. The revenues of power producers are taxed 100% over the level of 450 EUR/MWh (the costs related to purchasing CO₂ allowances are discounted from the formula) through a contribution to a “Energy Transition Fund”. According to the provisions of the new GEO, the revenues collected in this way can be redistributed to power producers for covering their purchasing costs for CO₂ allowances, if these costs are higher than that company’s overall contribution to the energy transition fund. While this still requires some further clarifications, there is a risk that in the new framework CEO could be double compensated for its CO₂ costs – once from revenues from the windfall tax and another time through the state aid approved by the Commission for the restructuring plan of the company. All this at a time when the company is making unexpected profits as a result of the fossil gas crisis.

Complexul Energetic Hunedoara

Complexul Energetic Hunedoara (CEH) operates the country’s main hard coal capacities, having used to own the Mintia (1,050 MW) and Paroseni (150 MW) power plants and four underground mines: Lonea, Livezeni, Vulcan and Lupeni. The state-owned company has been struggling to operate for more than 20 years, mainly due to its significant financial losses stemming from the poor economics of hard coal mining in Romania, the difficulties in purchasing CO₂ allowances, and the company’s problems in aligning with environmental standards (Bankwatch Romania, 2021). CEH has been kept alive through successive rounds of state aid (Ministry of Energy, 2016b, 2021a, 2022a) and social protection measures⁵ (Ministry of Energy, 2016a, 2021b; GEO 69/2019, 2019). Despite these efforts, the company was declared insolvent in 2019 (Societatea Complexul Energetic Hunedoara S.A., 2022).

As part of the insolvency process, all the power units of Mintia were closed in May 2021. In August 2022, the power plant was sold through a public auction to Mass Global Energy Rom, on the condition to invest in at least 800 MW worth of gas and renewable capacities by the end of 2026 (Digi24, 2022).

⁵ One example of measures to mitigate the socio-economic impact of uncompetitive mines closures is granting monthly supplementary income to redundant personnel that due to the mono-industrial development of the region, lacks alternative employment opportunities (GEO 69/2019, 2019).

According to the coal phaseout law voted by Parliament, the Paroseni power plant, the only remaining plant in CEH's portfolio, will only be closed by the end of 2032. This late deadline is motivated by its role in facilitating the closure of the remaining active mines, that due to geological conditions require additional mining for securing the galleries (Ministry of Energy, 2022d). Different scenarios have been discussed regarding the future of the Paroseni power plant – from plans to operate on biomass pellets, following the signing of an agreement between the Ministry of Energy and a Norwegian pellet producer (Ministry of Energy, 2021c), to intentions to install gas-fired power units after 2032 (Infofinanciar, 2022).

When it comes to the hard coal mines, the European Commission has been approving state aid interventions ever since 2010, aimed at closing the Lupeni and Lonea mines, deemed uncompetitive (Ministry of Energy, 2022d). The initial closure deadline (2018) was delayed to 2026. The other two mines, Vulcan and Livezeni, will be closed in 2032 at the latest (Ministry of Energy, 2022d).

Other coal capacities in Romania

Some other active coal-fired power plants that are also worth mentioning: (i) CET Govora (100 MW) and (ii) CET Iași (60 MW). Besides power generation, both of them supply heat for the district heating networks in the cities of Râmnicu Vâlcea and Iași.

Following the same pattern as CEO and CEH, CET Govora has also been recording significant financial losses, being unable to pay its EUAs. The company was declared insolvent in 2016 and subsequently proposed a restructuring plan (Bankwatch Romania, 2021). The plan acknowledged that all coal-related activities were neither efficient nor sustainable, highlighting the need to replace coal-fired capacities with a highly efficient cogeneration gas plant, as well as new biomass plant (CET Govora S.A., 2022). It was envisaged that until the new units would be operational, lignite would continue to be used in the existing plant. The plan was due to be implemented by July 2023. This date was pushed back to 2025 in the coal phaseout law passed by Parliament, which also sets the closing date for the lignite opencast mines supplying CET Govora, Alunu and Berbești at the end of 2027.

CET Iași has benefited from state to continue its activities. In 2018 it received EUR 1.8 million and then another EUR 1.6 million in 2019 (Bankwatch Romania, 2021). Similar to the previous examples, the management of the company plans to replace existing capacities with gas and renewables. In the coal phaseout law passed by Parliament, CET Iași will be closed by 2025.

At this stage it is important to highlight the associated risks with the overwhelming reliance in the decarbonisation plans of all these companies on investing in fossil gas power plants as a transition solution for replacing coal capacities. While it is true that phasing out coal power plants will be difficult without some level of switching to new gas-fired capacities, the risk of overinvestment seems to be significant. While CCGTs could smooth out the replacement of more polluting

capacities, in the context of decarbonisation by mid-century many of these investments would likely not be able to stay operational for their entire lifetime and definitely not at high-capacity factors. With the potential development of the Black Sea offshore wind resources, as well as other RES, the need for baseload power production will gradually decrease. In fact, modelling results show that the load factor of new CCGT units in Romania will experience a quick drop in load factor, averaging values of under 40% by 2030 (BNEF, 2020). As the power sector will approach climate neutrality, gas-fired power plants will rather be needed as peaker capacities. Moreover, the development of alternative means of storage, such as batteries or pumped hydro, as well as an increased level of interconnection, could also reduce the need for peaker power plants. Therefore, the likely capacity factor at which new CCGTs will operate throughout the coming years needs to be factored in the investment decision.

It should also be mentioned that despite a lower emissions intensity compared to coal, the combustion of fossil gas still generates CO₂ emissions, on top of the methane leakage present throughout the supply chain. Investments in gas capacities should be sized according to the needs of a future electricity mix dominated by renewable energy and taking into account the imperative of avoiding the creation of stranded assets and crowding out investments in cleaner energy sources. The high gas prices and depleting gas reserves of Romania should also be considered when betting on gas as a transition fuel.

A notable exception from the plans to switch coal with gas is the former 320 MW lignite-fired power plant in Doicești, which was closed in 2009 and was recently entirely decommissioned (Ziare.Com, 2022). The remaining buildings were demolished to prepare the site for the installation of a nuclear small modular reactor (SMR) in the future. This project, developed through a partnership between Nuclearelectrica and NuScale, entails the development of 6 modules of 462 MWe total capacity (Nuclearelectrica, 2022). The plan is to have a functional SMR installation in Doicești by 2028 (Europa Liberă România, 2022). While such a project can indeed deliver emissions reductions in the Romanian electricity system, the costs associated to this investment remain uncertain and require further clarification. The criteria based on which Doicești was chosen as a suitable location are also unclear. Nonetheless, such projects, if cost-competitive, can provide a climate-neutrality aligned solution for continuing power generation activities in former coal regions.

2. Governance instruments for phasing out coal

Starting from the existing examples of coal phaseout laws implemented in other European countries, this chapter outlines the key elements that are needed for setting up an adequate governance framework. The main policy options for establishing a phaseout calendar are assessed, followed by the presentation of a set of considerations on coal commissions, broader stakeholder and community engagement, aspects of a just transition in coal regions, financing options and opportunities for international cooperation with other countries undergoing a similar process. All these dimensions should be pursued in a complementary manner in order to establish a comprehensive and effective governance framework for phasing out coal in an orderly manner.

Examples of coal phaseout plans in Europe

For coal phaseout to be implemented in an orderly fashion it must be first of all set into law. This signals a clear commitment from the authorities in achieving this objective and also sets a roadmap of the whole process. Valuable lessons can be learned from the experiences of other European countries which have passed legislation on coal phaseout before Romania. Table 2 review of some of the main approaches in other European countries for legislating coal phaseout. These examples show that the centrepiece of such legislation is the phaseout deadline, but also highlight the multiple approaches that can be used for implementing the calendar. Some of the cases highlighted in the table also show that once the political commitment to phasing out coal is set into law, later revisions can increase the level of ambition and add supplementary safeguards for ensuring the climate sustainability of the plan.

Table 2. Examples of legislative commitments for coal phaseout in Europe

#	Country	Legislative commitment
1	Finland	<ul style="list-style-type: none"> - Legislated a coal phaseout calendar by 2029 and prohibited by law coal-based energy production starting from 1st May 2029 (LSE, 2022a). - Besides stipulating a clear date, the law also sets up an EUR 90 million fund for companies that close coal-fired activities by 2025 and opt for biomass as a substitute for coal in combined heat and power plants (Europe Beyond Coal, 2022b).
2	France	<ul style="list-style-type: none"> - Committed to phaseout coal by 2023, with a forward-looking perspective to 2022 by establishing an energy and climate law in November 2019. - The law stipulated an emissions performance standard of maximum 550kg/MWh that entered into force from 2022 (Europe Beyond Coal,

		2022b). This excludes unabated coal-fired capacities from operation, but there is an exception allowing them to function on low running hours of up to around 700 hours a year, mainly to ensure system adequacy and security of supply.
3	The Netherlands	<ul style="list-style-type: none"> - Passed a law in 2019 setting a coal phase out at the end of 2029. The law forbids generating coal-based electricity starting with 2030. - It further states that older power plants (that have an electric efficiency of less than 44%) must cease operations by 2025, while newer power plants may continue to operate until the overall deadline. Further details were added in 2021, such as limiting the operations of coal-fired power plants to no more than 35% of their capacity (LSE, 2022b).
4	Germany	<ul style="list-style-type: none"> - Organised auctions for the phaseout of hard coal capacities and negotiated the lignite phaseout directly with producers (E3G, 2020). A law was passed banning new coal capacities and setting a phaseout by 2038, potentially to moveable to 2035 (Europe Beyond Coal, 2022b). - Germany also has a structural transformation law that regulates the financial transition support for their three lignite regions: Lusatia (Brandenburg and Saxony), the Central German mining district (Saxony and Saxony-Anhalt) and the Rhenish mining district (North Rhine-Westphalia) and largely implements the recommendations of the German coal commission, which brings together industry, trade unions, coal regions, environmental NGOs, research institutes and affected communities to facilitate a German coal phase out and just transition process (E3G, 2020). In the aftermath of the 2021 elections, the new governing coalition published a consultation paper which proposes 2030 as the new coal phaseout deadline, but without any mentions on actual steps to be undertaken in this sense (Europe Beyond Coal, 2022b).
5	The United Kingdom	<ul style="list-style-type: none"> - Was the first country in the world to legislate a coal phaseout back in 2015, setting the final deadline for 2025 and later bringing it forward to 2024 (Europe Beyond Coal, 2022b). Prior to these announcements, in 2013, the UK introduced a carbon price floor which brought a 25% emissions reduction from the electricity sector in the 2015-2016 period (Rentier, et al., 2019). From 2018 an emissions performance standard of 450kg/MWh was introduced for baseload power production.

Policy options for phasing out coal

As shown in the previous section, once a deadline is set, there are multiple methods for implementing the phaseout process. Coal capacities may be closed either indirectly via taxation or directly through regulatory restrictions on the activity of certain types of power plants or fuels. Different policy options may be appropriate for different socio-economic contexts. The effectiveness of alternative measures can be evaluated based on (i) controllability, (ii) economic efficiency, (iii) impact on electricity prices and (iv) climate contribution. This report looks in part at:

1. Introducing a minimum carbon price or tax;
2. Fixed calendar for coal-fired power plants closure.

Already-existing policies at EU-level

Before discussing these two options, it is important to establish a baseline based on the current EU policy framework. There are two main existing instruments at the EU level, (i) the European Emissions Trading System – EU – ETS (EC Directive 2003/87, 2003) and (ii) the Industrial Emissions Directive – IED (Directive 2010/75/EU, 2010) that provide incentives for emission reductions of both GHG and air pollutants for coal power plants.

Introduced in 2005, the EU-ETS represents the core policy instrument to reduce CO₂ emissions at European level in the power and industrial sector, functioning as a “cap and trade” system, where a cap is set on the total amount of certain GHG that can be emitted by the covered installations (EC, 2022e). Power generation and energy-intensive industries must surrender one emission certificate (EUA) for each tonne of CO₂ emitted. Within the established cap, installations buy or receive CO₂ certificates for free, which they can trade with one another as needed. Trading CO₂ certificates results in the formation of a price per tonne of CO₂ emissions. Free allocation to power producers has been phased out, so they need to purchase the necessary EUAs from the market.

Theoretically, electricity generators are motivated to switch fuels when the price of CO₂ certificates raises the cost of the most carbon-intensive power production methods (i.e., coal-fired power generation), above the cost of alternative sources. Beyond the CO₂ emissions cost under the EU-ETS, there are also other factors that can influence the retirement of certain capacities, namely (i) the price difference between the various fuels and (ii) the efficiency of the power plants. Furthermore, the trends in energy and CO₂ prices are subjects to volatility, making investors often unable to rely on predictable prices when making investment decisions. For example, the EU-ETS market opened at approximately EUR 80/tCO₂ at the beginning of 2022, with the price going up to about EUR 100/tCO₂ on February 2022, before declining to EUR 60/tCO₂ in March 2022 in the aftermath of Russia’s invasion of Ukraine. At the time of writing this Report (November 2022), the

price is around EUR 75/tCO₂. The price volatility indicates that exogenous shocks can change expectations of the carbon price on the short and medium term. The only certainty is that, in the long run, a decreasing cap ensures that emissions are gradually reduced and that scarcity is created, which in turn increases carbon prices. As coal power plants are one of the most carbon-intensive methods to produce electricity, carbon pricing has one of the highest impact on their production costs. As CO₂ allowance prices will continue to increase, coal-fired power plants will become increasingly uneconomical.

Alongside the EU-ETS, the coal-fired power generation in the EU are also subject to the Industrial Emissions Directive, which establishes minimum levels of air pollutant emissions. The Directive applies to large combustion plants with a heating capacity exceeding 300 MWth and its thresholds for emissions are determined on the principle of the best available technology (BAT). Stricter emissions standards for dust, sulphur, nitrogen dioxides and mercury from large combustion plants were adopted by the European Commission in 2017 (EC, 2017). The new standards had to be transposed into national legislation until 2021.

Although both instruments can add pressure on older and less efficient coal-based electricity generation power plants, through CO₂ certificate price and the stricter standards for emissions, it may be insufficient for triggering a timely and orderly phaseout of coal in coming years. Therefore, it is important to discuss what additional measures members states need to consider for implementing an ambitious coal phaseout strategy.

Introducing a minimum CO₂ price policy or tax

A **minimum CO₂ price** policy for the electricity generation sector aims to indirectly lower production levels of emission-intensive power plants by increasing their costs. If the minimum CO₂ price is high enough to severely impact the profitability it can also lead to closures of plants. The ETS-related carbon price has proven insufficiently high or too volatile to provide the necessary medium-term certainty for companies to divest from coal on an accelerated timeline. An advantage of such an approach is that it could be designed to cover all fossil-based capacities, contributing to the long-term phaseout of all fossil fuel from the electricity mix. Moreover, this instrument involves no intervention into basic ownership rights compared to a fixed calendar for closures of individual units.

However, it provides limited control over the actual closure calendar of power plants, which could continue operations despite higher CO₂ costs based on certain market and company-level conditions. For example, some companies may be able to balance losses from their coal-based capacities with profits from more economically viable assets. The current energy crisis has also shown that volatility in fuel prices can also influence the overall profitability of coal-fired power plants, especially given the EU's electricity market design based on marginality and the merit order. With skyrocketing fossil gas prices, the cost of gas-fired power generation has exceeded

the costs of coal-based power generation even when accounting for the higher CO₂ costs of the latter. In the current pay-as-clear wholesale market design, coal power plants across Europe have collected windfall profits in periods when gas became the price setter and have become competitive despite high CO₂ costs.

Moreover, the minimum CO₂ price implies losses in competitiveness for the host country, especially for net importer states and leads to carbon leakages to trade partners assuming they haven't implemented equivalent measures. An aligned approach at regional level would prevent this but increased political coordination would imply further delays and complexity.

Although various European states considered the introduction of a minimum CO₂ price in the electricity sector (DIW Berlin, Wuppertal Institute and Ecologic Insititue, 2019) the instrument has had limited coverage so far. The UK introduced a minimum CO₂ price policy in 2013 for all power generation plants, which are subject to the ETS. Also, the UK collects a 'carbon price support tax' from electricity generating plants and operators of combined heat and power stations (UK Government, 2022).

An alternative method to implement this policy is a **specific CO₂ based tax** applied solely to coal-fired power generation. This could add more targeted pressure on companies, thus stimulating the coal phase out process. Nonetheless, such an approach could raise equitable taxation problems, given the exclusivity of the tax. A wider coverage, for example on all fossil fuels should be less controversial, but recent spikes in energy prices have motivated governments to reduce rather than increase taxation, for example by lowering Value-Added Tax (VAT) or excise taxes (IMF, 2022).

A similar method could be based on a national **climate contribution** applied to all fossil fuels companies, including coal-fired power plants, but this suffers from similar shortcomings to a tax, given the current situation in energy markets. Moreover, under the current energy crisis, an EU temporary solidarity contribution tax of at least 33% levied over 2022 and/or 2023 on excess profits generated from activities in the oil, gas, coal and refinery sectors was introduced by the EU Regulation 2022/1854 (2022r) among other emergency interventions to address high energy prices. Adding a supplementary contribution on top of this appears to be unlikely.

Therefore, introducing a minimum CO₂ price policy or tax would increase costs of targeted emission-intensive producers therefore affecting their baseline and competitiveness. However, not only does it not provide a high degree of control over a coal phaseout calendar, but in the current energy crisis context it may be unacceptable to decision-makers.

Establishing a fixed calendar for coal power plants closure

The closure of coal-fired power plants can be achieved more directly through a fixed calendar of either capacity closures, production limitations or CO₂ emissions thresholds (DIW Berlin, Wuppertal Institute and Ecologic Insititue, 2019).

The fixed closure calendar for each plant provides high levels of control on the phaseout timeline, offering certainty that may be essential for planning shutdowns not just from a technical perspective, but also from employment and investment perspectives. Grid operators would also benefit from this higher level of clarity, which can facilitate ensuring security of supply and planning for new connections. This option eliminates the short comings of market-volatility, acting independently from the evolution of energy and CO₂ prices or power demand. However, this option does not guarantee actual company or national-level emission reductions, which also depend on broader national objectives and the new capacities installed to replace the coal-fired power plants. A telling example is the first iteration of CEO's restructuring plan, which would have actually seen an increase in company-level CO₂ emissions, as explained earlier in this report. A fixed closure calendar may also infringe on ownership rights, but this is less relevant in a country like Romania where all coal assets are state owned.

An alternative to the complete decommissioning of closed power plants could be transferring them to technical reserves, which would involve maintenance intervention for keeping the plants operational for emergency situations. However, this incurs additional costs, likely funded either from the TSO or directly from state budgets, which would need to comply with state aid rules and the current EU-level provisions on capacity mechanisms. Romania does not have a capacity mechanism in place and EU legislation does not allow for the design of new ones. Therefore, the mechanism through which technical reserves are remunerated needs to be carefully considered.

Providing a calendar for increasing limitations on production volumes from coal-fired power plants could also be a solution for implementing the phaseout. There are two main ways to do this. The first is to set maximum annual electricity quantities that a certain type of power plant can produce, which can be adjusted in line with security of supply considerations. This could be done based on fuel type or plant age, at either company or national level. Company-level limitations are easier to implement and could allow flexibility for generators, which can produce higher volumes during hours with high electricity prices, usually when less renewable energy is being produced. The second way is to set limitations on company-level CO₂ emissions, which can similarly allow for flexibility, while also limiting production to what is most desirable from an emissions-perspective. This approach would need, however, to take into account the different profiles of companies, both in terms of what other assets they own but also based on whether they also produce heat for district-heating networks, which may mean that there are periods when production cannot be limited if heat and power are cogenerated.

The more easy-to-implement method is to set a limit on CO₂ emissions level per MWh produced, applicable to the entire power sector. This can decrease the level of design complexity and provide incremental emissions reductions with a high level of reliability. The limit can be gradually reduced to first target the most emissions-intensive coal capacities, then coal-fired generation all-together, and eventually to also affect fossil gas-based capacities, thus allowing for the full decarbonisation of the power sector.

There are some concerns, however, that fixed annual limits on emissions, electricity volumes or full-load hours may be incompatible with other national or EU laws. For example, the Emissions Trading Directive does not allow national measures with similar objectives, while it remains unclear and contested whether the IED allows for CO₂ limit value (DIW Berlin, Wuppertal Institute and Ecologic Insititue, 2019).

Mixing between policy options may also provide additional benefits. For example, combining minimum CO₂ prices and a fixed calendar for closures might be a solution to phase coal out better than what could be achieved through a bureaucratically imposed calendar, while also ensuring plant closures compared to a simple minimum CO₂ price approach. However, combined instruments increase complexity and may lead to delays in reaching political agreement. Most EU countries have chosen the option to limit the annual production through a fixed sequence closure as an optimal solution (Europe Beyond Coal, 2022b).

To summarise, there are various policy options to phase out coal: from CO₂ minimum prices or tax, to limiting production volumes or to a fixed calendar for closure. Among them, the latest is the most reliable and attractive among EU member states. This instrument does not only offer investors, (local) policy makers and network operators more predictability, but also provides a more concrete timeline for emission reduction. A fixed calendar for diminishing maximum CO₂ emissions intensity could similarly provide certainty, while also being applicable to gas at later stages, provided it is permissible under national and EU-law.

Coal commissions

Coal commissions can be a particularly helpful governance tool in managing a coal phaseout, as they can bring together relevant stakeholders to explore different policy options, inform the larger public and the decision-makers and ensure broad participation that legitimises the transition (E3G, 2019). Nevertheless, the potential benefits of setting-up a coal commission are only applicable when the group increases the transparency of the process and fosters genuine stakeholder involvement (E3G, 2020). Transparency needs to be applied to the selection criteria based on which membership is determined, the decision-making process, the prerogatives, and the bindingness of its decisions. The membership of the group is particularly important, as it should be composed of representatives from a broad array of sectors in way to guarantee inclusiveness.

For instance, the German coal commission includes members from the parliament, central administration, the mining regions, the energy sector, environmental associations, trade unions and the scientific community (Agora Energiewende und Aurora Energy Research, 2019). Other examples such as that from the Czech Republic have a similar membership structure, reuniting key stakeholders from ministries, unions, industrial associations, non-profit organisations, coal regions, MPs and academics (Brauers, et al., 2022). Both commissions were tasked with issuing strategic recommendations, such as on a clear phase-out deadline and timeline, exploring options

for replacing coal-fired electricity generation, identifying the societal and economic challenges and making policy recommendations to overcome them.⁶ In the German case, the recommendations were even transposed into legislation, albeit in a less ambitious version than initially issued (Brauers, et al., 2022). Overall, the coal commissions in both countries contributed to an informed analysis of different coal phaseout scenarios from which decision-makers could choose. If established and managed properly, by balancing the power asymmetries between members and ensuring a transparent process, coal commissions can enhance social dialogue, reconcile diverging interests of different stakeholders and help govern the structural changes that a coal phaseout entails (Brauers, et al., 2022).

Broader stakeholder and community engagement

Engagement with regional and local stakeholders must be ensured beyond what is possible through coal committees, since such actors are best placed to identify key priorities and the strengths and weaknesses of their regions (E3G, 2020). Social dialogue is necessary not only between central and local authorities, but also between companies, unions and workers (Wuppertal Institute, 2022). It can not only empower those most affected but can simultaneously contribute to the overall transparency of the process and plays an important role in avoiding social upheaval. It is a broadly recommended practice to engage the local stakeholders and design the transition as a participatory process by empowering communities to guide the development of their own regions (E3G, 2020). Bottom-up approaches can act as accelerators of the transition.

One notable example of a bottom-up transition is the Horna Nitra region in Slovakia, where local authorities have been planning an exit from lignite since 2018 with particular emphasis on involving the community in shaping the process (CEE Bankwatch Network, cited in E3G, 2021). In Western Macedonia, the Greek local authorities have voiced their support for an accelerated coal phaseout, redevelopment of the region and have also taken steps in planning it, even before there was central government support for this process (E3G, 2019).

Social dialogue and community engagement can also help tap into the cultural dimension of the transition. Managing how individuals experience the transition does not stop at the economic struggles they go through. There is also another important aspect linked to their occupation, such as the identity and social status that they establish through it. Among the factors influencing and making the transition a challenging process there is also the cultural identity that regions develop around the coal exploitation activities (IDDRI and Climate Strategies, 2017). It is important to anticipate the transition not only from an economic standpoint and be ready to implement measures, but also to foster the psychological acceptance of such an occurrence. Workers and

⁶ Out of the two commissions, only the German one was also concerned with just transition measures (Brauers, et al., 2022).

their communities face questions related to identity, self-esteem, current set-up of the community, the social relations and networks built around coal activities (IDDRI and Climate Strategies, 2017). In order to avoid social upheaval and legitimise the transition, psychological and cultural factors need to be taken into account as well when designing policies.

At the individual level, workers can go through loss of professional pride, socio-economic status that depends on their wage level and occupation, professional responsibility in the company, as well as their role in the family and the community (IDDRI and Climate Strategies, 2017). This is why the transition should be centred around the local communities, pay respect to their historical role and identity, as they are the driving force and beneficiaries of any economic and social progress (EPG, 2021). The sense of pride that was built around coal communities may be replaced by uncertainties about jobs and income doubled by a sense of neglect and isolation (EPG, 2021). Managing the uncertainties and offering solutions to the community, putting it at the centre of the transition and encouraging a bottom-up approach are crucial in the success of mitigating the psychological and identity factors.

For instance, one idea of empowering the community, putting it at the centre of the transition, while combining green employment and renewable development is the community ownership model. This model allows for “the collective ownership and management of energy related assets, usually distributed energy resources” (IRENA, 2020). Thus, members of the community, households, individuals, businesses can share the costs of energy generation and other energy-related services (such as storage) and own and manage most of the project. Members of the community collectively become prosumers that both produce and consume the electricity, which enhances their autonomy and brings several benefits including reductions in energy costs, local green job creation, the community becomes actively involved in clean energy generation and management and maintains the identity associated with the energy heritage of the regions (Greenpeace, 2022).

Ensuring a Just Transition

Phasing out coal is a multi-layered process that has a considerable social impact, since historically, in the affected regions the local economies and ways of living have been revolving around coal mining and its exploitation (Europe Beyond Coal, 2020). Thus, transitioning away from coal should happen in a fair way that is able to mitigate the negative impacts on individuals and their communities, creating as little disruption as possible. While there are multiple examples of successful transitions away from coal,⁷ each has been different given the variations in local

⁷ There are different regions that have successfully phased out coal, such as the Limburg region in the Netherlands, the Appalachian and Powder Region Basin in the US, Upper Silesia in Poland, as well as other regions from Spain, UK, and Czech Republic (IDDRI and Climate Strategies, 2017).

circumstances, political culture, the strength of social security systems and the level of effective communication between stakeholders and the government (E3G, 2021).

Nevertheless, there are some common themes, lessons and approaches that could be implemented. One of these big themes is the need to anticipate and proactively manage the negative impact of jobs, as well as to design redevelopment around future-proof investments and value chains. Basically, the aim of a just transition is to mitigate the impact on employment in the short and medium term, while creating the opportunities for the attraction of new industries in the long-term, all by taking into account the regional context and particularities. Even though jobs may be lost and occupations related to the coal sector might even disappear, the transition towards net zero can offer a significant number of new jobs (EPG, 2021), as green employment can be boosted in these areas. Achieving this requires major investments in developing key value chains such as renewable energy sources and energy efficiency, electricity grids, energy efficiency in buildings and heat pumps, batteries, components and infrastructure for electric vehicles, green hydrogen-based technologies (EPG, 2021). Such investments will not only create replacements for the lost jobs but will also trigger other investments improving the quality of life and infrastructure and will help the communities rebuild their local identity around the sustainable energy transition and give them a sense of purpose and pride (EPG, 2021).

Achieving such goals needs planning focused on access to adequate training and education, such as reskilling programmes, establishment of vocational schools that promote green employment, and social security schemes that ensure compensation for job losses on the short term or support for retirement (Europe Beyond Coal, 2020). The gender perspective should also be taken into consideration, since women have been asymmetrically disadvantaged in the transition process (Braunger & Walk, 2022). Examples such as those from the Jiu Valley in Romania and the Ruhr region in Germany show that, while men were laid off and the economic model of coal regions was insufficiently diversified to offer other credible alternatives, women faced the highest difficulties in finding suitable employment, oftentimes stuck in low-income jobs while also performing domestic work (Braunger & Walk, 2022). Women are not the only vulnerable category which requires tailored approaches in just transition policies. Workers with only basic levels of education or training and particularly those with health issues, advanced age, or informally employed are also in need for targeted support.

All in all, a just transition should be ensured by:

- Cushioning the short-term impact on displaced workers with measures such as financial compensation, early retirement, social benefits, providing training and reskilling programmes;
- Enabling economic revitalisation of coal regions, attracting investments, developing other areas of the local economy, building related infrastructure, investing in transport and digitalisation in order to connect coal regions to the rest of the country and economy;

- Designing measures through a participatory process which is governed by social dialogue with the relevant actors, stakeholder and local communities' engagement, experts in the field and government representatives, in order to ensure transparency and make the transition a bottom-up process.

Many of these aspects are already covered in the Territorial Just Transition Plans (TJTP), which are elaborated by member states for each of their carbon-intensive regions and are submitted to Commission as part of the process for accessing the Just Transition Fund (JTF) (EC, 2022g). Their main aim is to develop a detailed transition strategy in line with the European climate goals for each targeted region (EC, 2021a).⁸ The plans need also to be aligned with other national strategies and measures, such as National Energy and Climate Plans, Smart Specialisation Strategies and National Long-Term Strategies, in terms of planned investments, timeline of the transition steps, contribution to national targets and other actions and objectives undertaken for a just transition (EC, 2021a). When designing the transition strategies, authorities need to identify the social, economic and environmental challenges that the regions face in their path to climate neutrality, as well as outline measures to be funded from the JTF to overcome them (EC, 2021a). The TJTPs entail the description of the transition process at the national level, the impact on the concerned territories, the challenges and how are they going to be managed. Explicitly, the TJTPs should primarily support measures targeted towards economic diversification of the territories and mitigation of the negative impacts on the employment sector (EC, 2021a). Nevertheless, other activities are also eligible for funding, as long as they contribute to alleviating the negative impacts of the transition. Such activities include research and innovation, investments in energy efficiency and renewable energy, smart and sustainable local mobility, digitalisation, soil regeneration, circular economy, and social infrastructure (EC, 2021a). The JTF requires that the elaboration process of the TJTPs as well as their implementation and evaluation to be a participatory one, that includes regional and local authorities, economic and social partners, civil society (environmental partners NGOs), research institutions and universities (EC, 2021a). Thus, entities called Working Groups have been mobilised to ensure stakeholder engagement and act as a forum for problem solving and advocacy (EC, 2022j). Overall, TJTPs show that national and regional authorities are committed to the redevelopment of their regions and actively seek solutions.

Beyond the support offered through the Just Transition Mechanism, additional national policies and funding streams can be designed for aiding the transition of coal regions. Some EU countries have already put in place national measures besides those developed through the Territorial Just Transition Plans:

⁸ Under the Just Transition Fund, only specific territories, which are regarded as the most negatively impacted by the net-zero transition can benefit from funding. These targeted regions are the ones that have developed around fossil fuels exploitation (such as coal regions, but not limited to them) or other GHG intensive industrial activities (such as steel, cement, other chemicals), since they require the most radical transformation (EC, 2021).

- Germany committed to invest EUR 40 billion in affected coal regions, including on education and social safety nets for workers, as well as compensations for coal operators and consumers in case the energy prices spike (E3G, 2019).
- Spain pledged approximately EUR 290 million to support a just transition through a variety of instruments such as: supporting the structural redevelopment of the local economies, measures to protect employment, compensation and support for workers, investments in renewables (Europe Beyond Coal, 2020)
- In the Netherlands, besides other measures, a budget of EUR 22 million was mobilised to directly support workers of the five coal power plants who request assistance to find a new job or want to be retained (CNV Internationaal, 2021).

Managing all these complexities of a just transition in coal regions may be facilitated by the creation of dedicated institutions with own staff and resources. In Spain, for instance, two different and complementary agencies were established in order to counterbalance different interests and effectively implement the Just Transition Strategy. The Just Transition Institute has the role of implementing just transition measures, while the Advisory Council of the Just Transition Institute is in charge of coordinating and implementing the Just Transition Strategy (Europe Beyond Coal, 2020). The membership of these agencies is variate and encompasses actors from different sectors, such as the government, representatives at the regional and local level but also from the trade unions and businesses (Europe Beyond Coal, 2020). Additionally, a roundtable with actors, Social Dialogue Roundtables, from the civil society is meant to be implemented as a monitoring mechanism (Europe Beyond Coal, 2020).

Financing the coal phaseout

Phasing out coal presupposes the core restructuring of the economy of a region, thus requiring the deployment of significant financial resources. It is important to mobilise funding streams from available sources, including through corporate finance, insurance and re-insurance, banks, EU funds and governmental funds and state aids. To manage the transition, the EU makes significant financing mechanisms available for member states, including:

1. [The Modernisation Fund](#) represents a funding programme for the 10 lower income EU member states to support initiatives such as the modernisation of energy networks, renewables investments, energy efficiency and storage, as well as just transition in carbon-dependent regions. As the main way of financing this fund comes from auctioning of 2% of the total ETS allowances, it is expected that the fund will reach EUR 48 billion for the 2021-2030 period. Romania has 11.98% allocated of the total revenue.

2. [The Innovation Fund](#) provides EUR 38 billion (also from ETS allowances) for innovative projects related to climate neutral technologies or that can help reducing emissions, such as renewable energy generation, energy storage or carbon capture utilisation and storage.
3. [European Regional Development Fund](#) (ERDF) is designed to limit the gap between regions in Europe, allocating dedicated funding for a greener Europe with the target of net zero economy in the 2021-2027 period. Member States have the obligations to concentrate 30% of the received funding towards green transition projects. Romania will benefit from EUR 4.33 billion for investments in competitiveness of SMEs, research and innovation, digitalisation.
4. [European Social Fund Plus](#) (ESF+), a EUR 99,3 billion fund, should contribute to sustaining employment, social, education and skills policies and structural reforms. Some of its areas of concern are educational and training programmes, upskilling and reskilling, equal access to education and employment, modernising labour market institutions and services as well as ensuring gender balance, adaptation of workers, enterprises and entrepreneurs to change. EUR 7.3 billion from this fund will be allocated to Romania to boost access to employment, tackle youth unemployment, initiate new programmes of training and skills.
5. [Just Transition Fund](#) (JTF) is especially designed to support the transition in coal regions by supporting investments in environmental rehabilitation, clean energy, reskilling and upskilling, job-search assistance, transformation of existing carbon-intensive installations. Romania will be receiving EUR 2.14 billion to mitigate the socio-economic impact of the green transition focusing on the negative effects of the coal phaseout and the transition away from carbon-intensive industries in Dolj, Gorj, Hunedoara, Mures, Prahova and Galati counties. Besides the JTF, the Just Transition Mechanism of the EU has two additional pillars: Pillar II (Invest EU) and Pillar III (EIB public loan facility) of the mechanism. These pillars offer new ways of financing the transition, particularly by leveraging public and private investments. The Just Transition Platform launched in June 2020 provides information on funding, updates on regulations and facilitates exchanges of best practices.
6. [LIFE](#) represents a dedicated programme for environmental and climate action. The areas targeted are Nature and Biodiversity, Circular Economy and Quality of Life, Climate Change Mitigation and Adaptation, Clean Energy Transition. The last two sub-programmes are among the most relevant for coal regions, targeting all of the aspects of the energy transition and involving multiple types of actors, such as local and regional authorities, NGOs and even consumers. In the 2021-2027 period, projects in these areas will be financed from a EUR 5.4 billion budget.
7. [Research Fund for Coal and Steel](#) (RFCS) focuses on financing research and innovation projects in the coal and steel sectors. One of the key aspects of this programme is to finance the research projects supporting green transitions in the coal regions. The total budget for the 2021-2027 period is of EUR 111 million.

8. [Cohesion Fund](#) supports investments in environment and trans-European transport networks, 37% of the budget being allocated for climate objectives. With joint funding from the ERDF, the Cohesion Fund will allocate EUR 6.75 billion to Romania for green energy, carbon emissions reduction, environmental infrastructure, biodiversity conservation, risk management and sustainable urban mobility measures. EUR 2.3 billion are dedicated to developing renewables, better energy performance in residential and public buildings, as well as investing in smart energy systems.
9. [European Agricultural Fund for Rural Development \(EAFRD\)](#) finances projects on rural development and focuses on objectives such as sustainable management of natural resources and climate action, sustaining rural economies and communities. Out of the total budget of EUR 95.51 billion, 26% in the 2021-2022 period and 40% in the 2023-2027 period are targeted towards climate projects.
10. [Recovery and Resilience Facility \(RFF\)](#) represents dedicated funding for overcoming the economic and social negative impacts of the coronavirus pandemic by investing in the green and digital transitions. The Romanian National Recovery and Resilience Plan has already been approved by the European Commission and amounts to EUR 29.2 billion.
11. [European Globalisation Adjustment Fund for Displaced Workers](#) (EGF) consists of an especially designed fund for displaced and vulnerable workforce. It aims at helping workers and self-employed who were displaced to find better jobs, acquire new skills, access better education and training, benefit from mentoring, entrepreneurship and business creation programmes and career advice. In the 2021-2027 period, the budget consists of €210 million.
12. [Connecting Europe Facility](#) promotes growth, jobs, and competitiveness by investing in EU infrastructure. One of the main areas of investment is energy infrastructure and cross-border renewable energy projects, contributing to developing the Trans-European Networks for Energy and contributing to the achievement of the climate targets. The budget for the 2021-2027 period is EUR 5.84 billion, prioritising cross-border renewable energy projects, interoperability of networks and better integration of internal energy market.
13. [ETS revenues](#) represent a key source of climate funding from the auctioning of ETS allowances. These funds can be leveraged to boost investments in the diversification of the energy mix and sources of supply, restructuring, environmental upgrading and retrofitting of the infrastructure, clean technologies and modernisation of the energy production sector and of the transmission and distribution sector.

An effective funding strategy is a core element of a successful transition. Thus, an integrated plan should be developed for accessing funds from EU sources, in a way that maximises the use of all available instruments in a complementary manner. Institutional capacities and expert knowledge

for finance mobilisation is needed, as well as EU and national support schemes for technical assistance (EC, 2021b). Examples of such initiatives that offer assistance in project preparation to local authorities, promoters or private companies are [JASPERS](#), [European Investment Advisory Hub](#), [TARGET](#) (a programme dedicated to offer technical assistance for transitioning regions) or the [European Energy Efficiency Fund Technical Assistance Facility](#) (EC, 2021b). Besides accessing these advisory instruments, toolkits could be developed for local authorities that maximise the synergies between funds from all sources. An example is the [URBACT](#) programme in [Łódź, Poland](#) that offers tools directed to urban authorities such as [Ranking Tables](#) for selecting among funding and financing alternatives, or a [Funding Matrix](#) to help build solid and coherent funding strategies.

Public funds need to be complemented by private financing. Emphasis should be put on identifying bankable projects that have the potential to generate revenue and attract investments (EC, 2021b). Relaunching the economy and developing other sectors can be achieved by supporting SMEs in accessing private finance or developing private-public partnerships (EC, 2021b). A successful example of sharing the costs of financing the transition is the public-private-partnership for the [Loos-en-Gohelle](#) project that targeted a former coal mining town and transitioned to renewable energy sources. Additional financing streams could be tapped into through strategic procurement, community energy ownership, Energy Performance Contracting, crowdfunding, municipal green bonds, revolving funds.

State aid and fiscal facilities can also be deployed for attracting investors in coal regions. Counties can implement models of facilities for investors, such as Smart Specialisation Strategy, which aims at developing research and innovation according to the local priorities of the areas and develop value chains that are tailored to the local potential (EPG, 2021). Another tool for the regional development represents the Special Economic Zone, which is especially designated for developing post-industrial areas affected by economic stagnation by incentivising job creation through foreign investments, providing tax benefits, simplified planning procedures and specialised business support services, but also by enhancing the quality of life in order to attract more human resources (EPG, 2021). Authorities can benefit from the Regional Aid Guidelines, which are already into effect and have the aim of reducing the development gaps between regions, thus increasing maximum state aid intensities in order to support the objectives of the European Green Deal and the EU Digital Strategy in transition areas, of which, for instance, Gorj county can benefit the most funding (EPG, 2021).

International diplomacy and cooperation

As multiple countries are going through a coal phaseout process, there is significant potential for lessons sharing that can be enabled through international cooperation, beyond the scope of the EU. A dedicated platform for such exchanges is the Powering Past Coal Alliance (PPCA). Established in 2017 under UK and Canadian leadership, it has the purpose of swiftly advancing

global phase-out programmes and substantially limiting global warming. Its over 130 members have achieved significant progress on coal phaseout and gathered substantial expertise, including in transforming the utility sector and grid systems, incorporating climate considerations in the finance sector, and starting to deliver a just transition for affected workers and communities. 56% of OECD and EU countries are members, including Slovakia and Hungary. Now that coal phaseout has been established in law, Romania could benefit from joining this platform for international cooperation.

3. The coal phaseout framework in Romania

Having established the key elements for a comprehensive governance framework for phasing out coal, this chapter turns to analysing the recent developments in Romania. The report looks at the legislative process through which Romanian authorities have fulfilled their commitments in the NRRP. A full breakdown of the differences in legislation between the different legislative phases can be found in a table in the Annex to this report. Some consideration is also given in this chapter to the Territorial Just Transition Plans that have been approved by the European Commission, in order to highlight the merits but also the shortcomings of Romania's current framework for phasing out coal.

The legislative process of Romania's coal phaseout

Following up on the commitments for reforms made in the National Recovery and Resilience Plan, the Romanian Government issued in May 2022 a draft Government Emergency Ordinance (GEO) proposal that was meant to provide the legal ground for the lignite and hard coal phaseout from the energy mix (Ministry of Energy, 2022c). The draft GEO proposal outlined a more ambitious phaseout date of 2030, the 'permanent and irreversible closure' of power units, exploitation sites along with a clear withdrawal timeline, different measures targeting the socio-economic impact, the establishment of different governmental and administrative bodies that were meant to implement and coordinate the whole phaseout process, as well as sanctions in case of non-compliance (Ministry of Energy, 2022c). Figure 8 shows how the timeline for coal phaseout would have looked according to this first legislative iteration. Some key provisions of the draft GEO proposal included:

- Banning both the construction of new electricity generation capacities based on lignite or hard coal, and the development of new lignite quarries and hard coal mines.
- Termination of lignite and hard coal-fired electricity generation, withdrawal from service and permanent and irreversible closure by 31 December 2030 of the total installed energy capacity of 4,920 MW.
- Operation withdrawal, permanent and irreversible closure timeline (after the closure of 1,695 MW in 2021):
 - a) 31 December 2022: 660 MW lignite;
 - b) 31 December 2025: 1,425 MW, of which 1,375 MW lignite and 50 MW hard coal;
 - c) 31 December 2030: 1,140 MW, of which 990 MW lignite and 150 MW hard coal.
- Establishing technical reserves of lignite-based electricity capacities owned by CEO: 975 MW in the period 2023-2025, 990 MW in the period 2026-2030, in order to maintain the stability and safe operation of the National Power System.

- In the event of an energy crisis, the Romanian Government, at the proposal of the Ministry of Energy, may take the decision to restart the closed power plants while complying to the December 31, 2030 complete phaseout deadline.
- Forbidding production continuation at lignite quarries and coal mines after the date of permanent and irreversible closure.
- Completing the safety and irreversible closure works and environmental remediation and land repurposing works of lignite quarries and coal mines.
- Establishing support measures, such as state aid, granted annually through Government decisions with the approval of the European Commission, for the closure and decommissioning of lignite and hard coal capacities, as well as for the closure of quarries and mines.⁹
- Ensuring social protection measures for the dismissed personnel, as well as for professional reconversion and retraining.¹⁰
 - o People who have lost their jobs, especially in Gorj, Hunedoara and Dolj counties, have priority for professional reconversion and retraining courses provided by the National Vocational Training Plan, as well as the professional training needs identified by the Territorial Just Transition Plans; additionally, they can also benefit from non-reimbursable financing for the purchase of rooftop PV systems of 3-5 kW installed power.
- Financing all support measures is ensured from the state budget and/or European funds.
- Establishing three commissions and working groups:
 - a) The Inter-ministerial Coal Commission to coordinate the implementation of the decarbonisation process.¹¹
 - b) The Advisory Committee of assistance on relevant issues concerning implementation of the decarbonisation programme, which collaborates with the

⁹ The companies would have had to respect the deadlines for permanent and irreversible closure even without the state aid, in case of lack of approval from the European Commission.

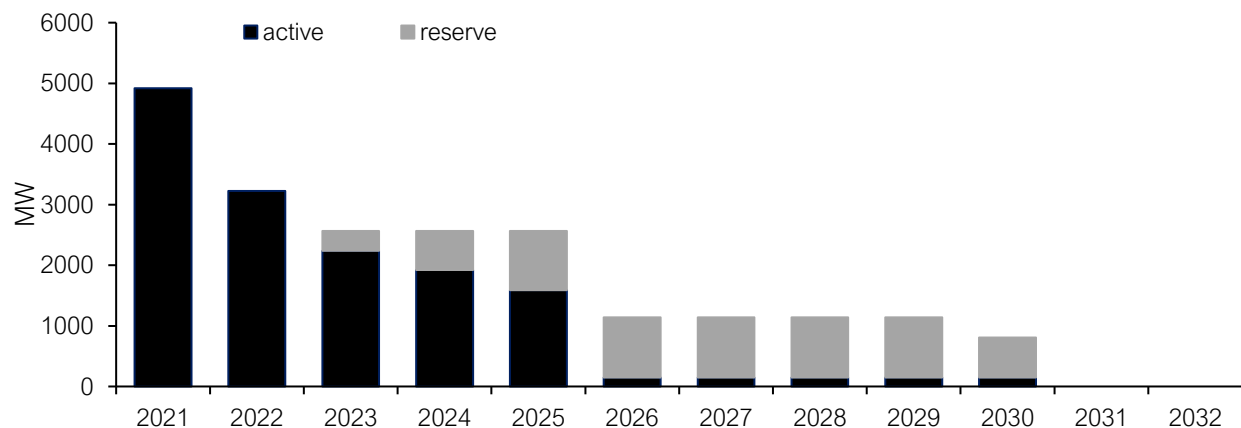
¹⁰ Additional details on the socio-economic mitigation process included: priority in the retraining program for people with medium or basic education, the economic revitalisation of the affected regions, boosting of the local economy, stimulating entrepreneurship, innovation and the mobility infrastructure (Ministry of Energy, 2022d).

¹¹ Composed by representatives from the Ministry of Economy, the Ministry of Finance, the Ministry of Investments and European Projects, the Ministry of Energy, the Ministry of Labour and Social Solidarity, the Ministry of Environment, Water and Forests, the Ministry of Development and Administration, the Ministry of Entrepreneurship and Tourism, the counties heads from Gorj, Hunedoara, Dolj (Ministry of Energy, 2022c).

Inter-ministerial Coal Commission and the Working Group and participates in the meetings, on their demand.¹²

- c) Working Group for coordinating and monitoring the activities implementation of the decarbonisation process.¹³
- The following constitute contraventions and shall be sanctioned:
 - a) the construction of new electricity production capacities based on lignite and hard coal, sanctioned with a fine between 5% and 10% of the turnover achieved by the legal entity in the year prior to the application of the sanctioning.
 - b) the failure to comply to the withdrawal timeline of operation and closure of the capacities for the production of electricity based on lignite and hard coal, sanctioned with a fine ranging between RON 50,000 and RON 100,000 and the reimbursement of the granted state aid.
 - c) the failure to comply to the permanent and irreversible closure timeline, the production termination, the carrying out of the safety and irreversible closure works and greening for the lignite quarries and the coal mines is sanctioned with a fine ranging between RON 10,000 and RON 100,000 and the reimbursement of the granted state aid.

Figure 8. Evolution of coal power plant capacity based on the draft GEO proposal



Source: EPG analysis based on the draft GEO proposal on coal phaseout (Ministry of Energy, 2022c)

¹² Composed by representatives of local authorities, trade unions, non-governmental organizations, private operators, academia representatives and experts from the energy field (Ministry of Energy, 2022c).

¹³ Composed of specialists from the central and local authorities, representatives of the Environmental Fund Administration, the National Energy Regulatory Authority, the National Authority for Mineral Resources and the involved economic agents (Ministry of Energy, 2022c).

All in all, despite some shortcomings, this draft GEO represented a remarkable proposal with an ambitious phaseout calendar, clear deadlines for closing power plants, fines for ensuring compliance, establishing three commissions for governing the process throughout the implementation phase. It still lacked clarity on the remuneration mechanism for technical reserves, a mechanism for potential revision to a faster deadline, and gave little decision-making power to the Advisory Committee. But it represented a ground-breaking proposal in a country where the political commitment and buy in for the phaseout were missing.

Unfortunately, after public consultations, which mainly included inputs of stakeholders from the coal sector, such as union or employers' association representatives (Ministry of Energy, 2022f), GEO 118/2022 was adopted with significant modifications compared to its draft version. The main points which should be outlined from the revision of the GEO following public consultations are:

- The phaseout deadline closure was pushed back by two years to the end of 2032. The calendar was also linked more explicitly to CEO's restructuring plan. Dates were provided for the closure of CET Craiova II (to be transferred from CEO to the municipality of Craiova) on 31 January 2025 and for CEH's Paroşeni on 31 December 2030.
- Mentions of 'permanent and irreversible closure' were replaced with simply 'closure'.
- Two additional GW of lignite capacities would be moved to technical reserves.
- The ban on the construction of new lignite quarries and hard coal mines, granting new exploitation permits, as well as production continuation at lignite quarries and hard coal mines after the date of final and irreversible closure was removed.
- A provision was added on the need to invest in gas-fired electricity generation capacities financed from the NRRP and the Modernisation Fund, in order 'to ensure the safe and stable functioning of the National Power System'.
- All fines and financial sanctions for non-compliance with the calendar and the scheduled closures were removed.
- Introduction of the possibility that in case of an energy crisis, 'the Government may postpone the closure of coal-fired capacities or the restart of closed mines and quarries, while complying with the 31 December 2032 closure deadline', in addition to the possibility to restart capacities from the previous version of the GEO.

Therefore, the level of ambition was pushed back to the initial commitment in the NRRP of the end 2032. More worrisome, the combination of the removal of mentions to the permanence of closure of power plants and mines, the removal of the ban to develop new capacities and especially the removal of all financial sanctions for non-compliance rendered the GEO toothless to enforce this revised phaseout calendar. The transfer of additional lignite capacities to the technical reserve made the question on the mechanism for their financial compensation even more pressing.

While it entered into force immediately after publication in the Official Journal of Romania, GEO 118/2022 still had to pass through the legislative process in Parliament to become a law. In the first stage, the Senate, Romania's upper house of the Parliament, introduced several amendments (Senate, 2022), among them the following are worth to be mentioned:

- Added another 660 GW of lignite capacities to the technical reserves.
- Mentioned more clearly a schedule for investments at CEO: (i) two gas-fired 'hydrogen-ready' CCGT units (1,325 MW) by 2026 and eight PV parks by 2024 (735 MW);
- Added two new counties as having priority in the National Vocational Training Plan, Mehedinți and Vâlcea; moreover, county representatives from Mehedinți and Vâlcea would also be part of the Coal Commission.

Later on, the Chamber of Deputies made a set of additional amendments (Chamber of Deputies, 2022):

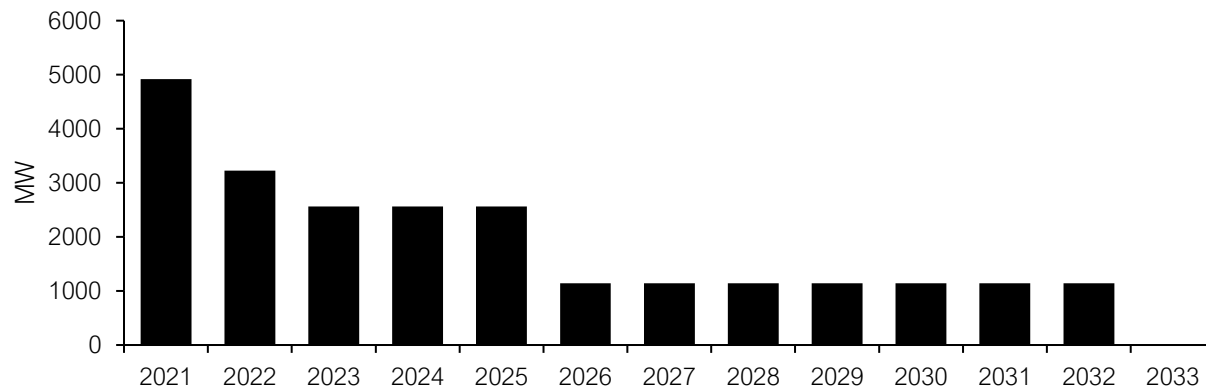
- I. Provided a definition of technical reserves as power units meant to replace the unavailable units for which power contracts are in place or be available to ensure the system adequacy when it cannot be ensured by the energy market. Some details were also added on the procedure for establishing capacities as technical reserves. While there was no more clarity on the specific power plants that would be transferred to the technical reserve list, a clear mention was added that all technical reserves are to be gradually closed by 31 December 2032.
- II. Reintroduced a ban the construction of new coal-fired capacities, with the exception of those that have already received a construction permit.¹⁴
- III. Reintroduced the initial shut down benchmarks (660 MW by 2022, 1,425 MW by 2025 and 1,140 MW by 2032 the latest).
- IV. Removed the priority support for dismissed personnel in coal regions to benefit from non-reimbursable financing for the purchase of rooftop PV systems of 3-5 kW installed power.
- V. Reintroduced financial sanctions for non-compliance in the form of a fine of up to 5% of the net turnover of the economic operator in case the lignite and hard coal power units are not timely withdrawn.

The draft law was voted by the Parliament and sent to the President for promulgation on November 16th, 2022. Law 334/2022 was promulgated on the 29th of November 2022 (Presidential Administration, 2022) and published in the Official Journal on 5th December 2022 (Official Journal of Romania, 2022b). The coal phaseout timeline according to this final version of the legislative act can be seen in Figure 9.

¹⁴ It is currently uncertain which investments, if any, would qualify under this provision.

The amendments introduced especially in the Chamber of Deputies addressed some of the shortcomings of GEO 118/2022. The ban on the construction of new capacity was reinstated and financial sanctions for non-compliance were reintroduced, allowing for fines to be imposed as an enforcement mechanism. Nonetheless, Law 334/2022 still fell short compared to the initially proposed draft GEO from the Ministry of Energy. Mentions to permanence of capacity closures are still removed, gas-fired investments at CEO have been introduced, and the provision on priority support for rooftop PV installations for dismissed personnel was removed.

Figure 9. Evolution of total coal power plant capacity based on Law 334/2022¹⁵



Source: EPG analysis based on the Romanian Law on coal phaseout (Official Journal of Romania, 2022b)

All in all, legislating the coal phaseout calendar still constitutes an important step forward and is eagerly welcomed. However, the current version of the law does not ensure that the governance of such a complex process will be justly and efficiently enforced, as there are legislative gaps that still need to be filled and some measures that raise questions of effectiveness. In this sense, there are several aspects that need to be addressed in the implementation phase:

- a) **Uncertainties regarding technical reserves: how will they be remunerated?** More details should be given on how the technical reserves will be financed, the source of financing as well as the amount of funds they will receive. It is important to avoid hidden and unnecessary subsidies for lignite power plants, especially after they cease to be economically viable. Romania does not have a capacity mechanism¹⁶ and can therefore no longer implement such an option.

¹⁵ It needs to be mentioned that in comparison to previous versions, the promulgated law does not offer a technical reserves calendar anymore. It is stipulated that coal-fired power plants will cease to be operational and can become technical reserves (Official Journal of Romania, 2022b).

¹⁶ In some Member States, reserve capacities can be financed through a [capacity mechanism](#), a scheme that pays power plants to remain available when needed. Romania did not apply in time for such a scheme when this was still allowed under EU legislation.

- b) **Transparency on which power groups will be kept as technical reserves and which will be decommissioned?** The current law eliminated the technical reserves calendar and granted the Ministry of Energy along with the TSO the ability to decide when and how active power plants will become technical reserves. In his most recent statement, the Minister of Energy announced that there will be no actual closures of coal-fired power plants, as they will be all moved to technical reserves (Infofinanciar, 2022).
- c) **Just transition measures:** more comprehensive measures that are meant to mitigate the socio-economic impact should be implemented. The measures adopted are insufficient to effectively mitigate this impact. A more comprehensive transition plan, covering all the economic sectors concerned and ensuring support to all affected individuals is needed, beyond the PTTJs. In this sense, the law must clearly specify all funds that will be made available, as well as the amounts allocated, in addition to the criteria for allocating state aid. National resources should also be mobilised.
- d) **Transparency and public participation:** as currently designed, the phaseout will be a top-down process, which hinders the involvement of local communities, civil society, stakeholders. The Advisory Committee, which has the most variate composition of the three entities designated to contribute to the governance of the phaseout, should have an extended role, that goes beyond mere consultation. The Advisory Committee is composed by individuals spanning from the local authorities, trade unions, NGOs to experts from the energy sector and academia. The inter-ministerial Coal Commission, which includes only representatives from ministries and regional authorities cannot enable public participation and social acceptance for the transition, especially from the local communities. Thus, the gap between the Coal Commission and ensuring a participatory and inclusive governance of the phaseout can be filled by empowering the Advisory Committee in the decision-making process.
- e) **The timeline of the phaseout calendar:** on what basis was the phaseout calendar formulated? Neither the GEO 108/2022 nor the current law mentioned that the phaseout calendar took into consideration an impact assessment based on objective criteria such as: (i) power plants age, (ii) CO₂ emissions, (iii) full load hours or others.
- f) **Sanctions:** the first draft of the law stipulated variate sanctions for breaching the law, different thresholds for fines and even the reimbursement of state aid. However, in the final form approved by the Parliament and promulgated by the President, the law only maintains one relatively lax sanction in form of a fine for not complying with the closing deadlines. Even though the sanctioning mechanism is lax, it should at least be ensured that it is rightly and dutifully enforced.

Romanian Territorial Just Transition Plans

As already mentioned in the previous chapter, Territorial Just Transition Plans (TJTP) need to be elaborated and submitted to the Commission in order to access the necessary funding for transition measures under the JTF. In Romania, the Commission recognises six territories eligible for funding: Dolj, Galați, Gorj, Hunedoara, Mureș and Prahova counties (EC, 2022i). The submitted TJTPs have been approved by the Commission, amounting to EUR 2.13 billion funding for the just transition measures (Ministry of Investments and European Projects, 2022). Gorj and Hunedoara counties are of particular interest since they are coal regions, as well as Dolj, which has strong ties to the coal sector.

The TJTPs for the coal regions identify similar challenges:

- a) **Job losses:** as CEO and CEH are the major employers of the regions, individuals will be directly affected by layoffs; moreover, so will companies whose economic activity is tied to that of coal companies;
- b) **Environmental impact:** the plans identify other polluting activities besides coal, that even though are not subject to ETS, still pose challenges to the transition; water, soil and air pollution are also identified as concerns, mainly due to mining activities;
- c) **Social impact:** the majority of employees are between 41 and 60 years old, thus facing a certain level of difficulty in adapting to the job market; it might be the case that they are also the main breadwinners in their families, hence, the living standard of the families will decrease and there might even be a rise in the school dropout rate as a consequence; the unemployment rate is also expected to rise; it is mentioned that even though the affected individuals have a medium level of education, their income is higher than the average, thus implying further social difficulties;
- d) **Professional reconversion:** many affected individuals have a high potential for professional reconversion in a low-carbon economic model, but due to their advanced age, more support might be needed;
- e) **Potential for economic diversification and regional redevelopment:** different economic opportunities are identified which are correlated to the ones present in the Smart Specialisation Strategy for South-West Oltenia/West Region 2021-2027 (Ministry of Investments and European Projects, 2022).

In addition, the Hunedoara TJTP also mentions energy poverty as a challenge, due to the closing of Mintia power plant in 2021 (Ministry of Investments and European Projects, 2022).

Even though they slightly differ in their formulation, the TJTPs also identify similar action areas for overcoming the challenges:

- a) **Business and entrepreneurship development:** focus should be on microenterprises and SMEs in order to innovate and stimulate the local economies; stimulating entrepreneurship (especially women and youth entrepreneurship) by supporting new

- firms through incubators and business accelerators or existing firms with focus on digitalisation, new technology development, energy efficiency, waste management; development of industrial parks or other stimulating initiatives;
- b) **Supporting workforce transition:** prioritising professional reconversion for the coal industry personnel, especially in the green employment sector; supporting individuals¹⁷ in search for employment, especially the most vulnerable ones, in finding suitable employment and readapting to the job market; measures for reconversion and retraining are envisaged as well as counselling; the County Employment Agencies are to be supported as well;
 - c) **Investments in affordable green energy and mobility:** investments in renewable energy sources (including transport and storage) heat pumps, energy efficiency in public buildings; investments in electrical vehicles for public transport; through this measure, it is ensured that there is local demand for green employment;
 - d) **Land repurposing and buildings refurbishment:** investments in decommissioning and environmental remediating industrial sites in order to repurpose the land and the buildings, as well as to generate employment.
 - e) **Investments in large enterprises:** especially targeting sectors such as batteries manufacturing, green hydrogen, energy efficiency equipment, renewable energy sources or biofuels. (Ministry of Investments and European Projects, 2022).

Even though public participation is a key element in the elaboration process of the TJTPs, this condition was hardly met by the authorities in Gorj and Hunedoara counties, as the Working Groups struggled with lack of transparency from the in central authorities or with very abrupt deadlines (CEE Bankwatch Network, 2022). The engagement from the local community was also limited (CEE Bankwatch Network, 2022).

Nevertheless, the TJTPs stipulate that the governance process of the just transition in each county is to be coordinated and monitored by a special entity, County group for the coordination of the climate neutrality transition (Ministry of Investments and European Projects, 2022). Its composition shall be variate and shall include all the affected actors, the civil society, relevant academics, public authorities representing different sectors, such as environment, education, workforce and social protection or public health (Ministry of Investments and European Projects, 2022). This is a positive development, which could be further enhanced through the establishment of a centralised authority, with own staff and resources, that can coordinate and finance just transition efforts throughout the affected regions.

¹⁷ This measure is targeted at individuals whose employment is indirectly linked to the coal industry, mainly from companies that are dependent on CEO or CEH for their activities.

Recommendations

The legislation adopted by Parliament following the Ministry of Energy's emergency ordinance is remarkable for a country that has long refused to even discuss coal phaseout, especially considering the circumstances in which the legislative process has occurred. It represents a landmark piece of legislation outlining a calendar for the orderly transition away from coal and making a decisive step towards the decarbonisation of the electricity sector in Romania. Nonetheless, based on the analysis presented in this report, a number of recommendations can be made for improving the governance framework for phasing out coal in Romania over the coming years:

- Clarify the outstanding issues related to the coal phaseout legislations such as how will technical reserves be remunerated.
- Run dedicated modelling for phasing out coal in Romania to better understand what is the most feasible coal phaseout calendar in the current market conditions and taking into consideration the climate ambitions in REPowerEU and the Fit for 55 package.
- Implement the polluter pays principle by eliminating subsidies for CO₂ costs incurred by coal-fired power plants.
- Ensure a coal-to-clean transition based on the urgent deployment of renewable energy sources combined with flexibility technologies such as batteries and other forms of storage.
- Avoid large-scale investments in oversized fossil gas-fired capacities that risk turning into stranded assets. CCGT projects should be scaled at capacities suitable for a future renewable-dominated electricity mix.
- Further empower the Advisory Committee in the decision-making process as a way to increase transparency and public participation in the implementation of the coal phaseout process.
- Leverage all available state aid instruments for attracting key value chains in coal regions, such as those of batteries, electrolysers, renewable technologies, and electric vehicles.
- Consider the creation of a specialised just transition institution with dedicated funding and staff that can coordinate the transition process in coal regions, the implementation the TJTPs, and help better deploy national financial resources in carbon-intensive regions.
- Engage with transnational organisations and coalitions working on global coal phaseout commitments such as the PPCA.

References

- Adevărul, 2022. *adevarul.ro*. [Online]
Available at: <https://adevarul.ro/stiri-locale/targu-jiu/planul-de-restructurare-a-complexului-energetic-2146284.html>
[Accessed 25 November 2022].
- Agora Energiewende and enervis, 2021. *Phasing out coal in the EU's power system by 2030. A policy action plan*, s.l.: Agora Energiewende.
- Agora Energiewende und Aurora Energy Research, 2019. *The German Coal Commission. A Roadmap for a Just Transition from Coal to Renewables*, s.l.: Agora Energiewende und Aurora Energy Research.
- Agora Energiewende, 2021. *Coal Exit by 2030 in the EU Power Sector*, s.l.: Agora Energiewende.
- AP News, 2022. *apnews.com*. [Online]
Available at: <https://apnews.com/article/russia-ukraine-czech-republic-coal-mining-a267972e604626e0cfd4b26d82f52c81>
[Accessed 07 November 2022].
- Bankwatch Romania, 2021. *Coal in Romania-A review of coal assests and their impact on the environment*, s.l.: Bankwatch Romania.
- Bloomberg, 2022. *bloomberg.com*. [Online]
Available at: <https://www.bloomberg.com/news/articles/2022-06-27/europe-s-coal-plant-comeback-drives-up-carbon-permit-prices?leadSource=uverify%20wall>
[Accessed 07 November 2022].
- BNEF, 2020. *assets.bbhub.io*. [Online]
Available at: <https://assets.bbhub.io/professional/sites/24/BloombergNEF-Decarbonization-of-Eastern-Europe%E2%80%99s-Energy-Mix-Key-to-Higher-EU-Climate-Goals-Nov-2020.pdf>
[Accessed 09 December 202].
- Brauers, H. et al., 2022. *Comparing Coal Commissions-What to learn for future fossil phase-outs?*, s.l.: s.n.
- Braunger, I. & Walk, P., 2022. Power in transitions: Gendered power asymmetries in the United Kingdom and the United States coal transitions. *Energy Research & Social Science*, Volume 87, pp. 1-14.
- CEE Bankwatch Network, 2022. *Status of the Territorial Just Transition Plans in central and eastern Europe*, s.l.: CEE Bankwatch Network.

CEO, 2014. *ceoltenia.ro*. [Online]

Available at: <https://www.ceoltenia.ro/gigantul-energetic-ce-oltenia-si-guvernul-o-poveste-despre-presiuni-sociale-facilitati-guvernamentale-ineficienta-si-vanzari-sub-pretul-de-productie/>
[Accessed 06 December 2022].

CEO, 2022. *ceoltenia.ro*. [Online]

Available at: https://www.ceoltenia.ro/marele-producator-de-electricitate-ce-oltenia-tinteste-un-profit-de-216-mil-lei-cu-ajutoare-de-stat-de-miliarde/?parent_page=144
[Accessed 28 November 2022].

CET Govora S.A., 2022. *cetgovora.ro*. [Online]

Available at:

<http://cetgovora.ro/pictures/editorimagefile/plan%20reorganizare/2022/Plan%20de%20reorganizare%20modificat,%20precum%20si%20prelungirea%20duratei%20executarii .pdf>
[Accessed 22 November 2022].

Chamber of Deputies, 2022. *cdep.ro*. [Online]

Available at: https://www.cdep.ro/pls/proiecte/docs/2022/pr548_22.pdf
[Accessed November 2022].

CNV Internationaal, 2021. *Just Transition CNV Internationaal*. [Online]

Available at: <https://justtransition.cnvinternationaal.nl/application/just-energy-transition-the-netherlands-case-1>
[Accessed 25 November 2022].

Digi24, 2022. *digi24.ro*. [Online]

Available at: <https://www.digi24.ro/stiri/actualitate/politica/vanzarea-termocentralei-mintia-irgill-popescu-raspunde-criticilor-psd-devenise-o-gaura-neagra-investitia-va-fi-de-un-miliard-de-euro-2065171>
[Accessed 22 November 2022].

DIW Berlin, Wuppertal Institute and Ecologic Insititue, 2019. *Phasing out Coal in the German Energy Sector, Interdependencies, challenges and potential solutions*, s.l.: German Insitute for Economic Research, Wuppertal Insitute for Climate, Environment and Energy, Ecologic Insitute.

DW, 2022. *dw.com*. [Online]

Available at: <https://www.dw.com/en/germany-reactivates-coal-fired-power-plant-to-save-gas/a-62893497>
[Accessed 04 November 2022].

E3G, 2019. *The German Coal Commission-A Role Model for Transformative Change?*, s.l.: E3G.

E3G, 2020. *How (Not) to Phase-out Coal: Lessons from Germany for just and timely coal exits*, s.l.: E3G.

E3G, 2021. *Just Transitions Beyond Coal, Lessons from The EU*, s.l.: E3G.

EC Decision 2022/553, 2022. *ec.europa.eu*. [Online]
Available at: https://ec.europa.eu/competition/state_aid/cases1/202218/SA_59974_40197480-0000-C36B-AA20-73B13A9ED4D4_183_1.pdf
[Accessed October 2022].

EC, 2003. *eur-lex.europa.eu*. [Online]
Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0087&from=EN>
[Accessed 30 November 2022].

EC, 2010. *eur-lex.europa.eu*. [Online]
Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN>
[Accessed 30 November 2022].

EC, 2017. *eur-lex.europa.eu*. [Online]
Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1854&from=EN>
[Accessed 29 November 2022].

EC, 2020a. *ec.europa.eu*. [Online]
Available at: https://ec.europa.eu/commission/presscorner/detail/ro/mex_20_323
[Accessed 25 November 2022].

EC, 2020b. *Stepping up Europe's 2030 climate ambition; Investing in a climate-neutral future for the benefit of our people*, Brussels: s.n.

EC, 2021a. *ec.europa.eu*. [Online]
Available at: https://ec.europa.eu/regional_policy/sources/funding/just-transition-fund/swd_territ_just_trans_plan_en.pdf
[Accessed 29 November 2022].

EC, 2021b. *energy.europa.eu*. [Online]
Available at: https://energy.ec.europa.eu/system/files/2022-04/Transition%20financing%20toolkit%20-%20Initiative%20for%20coal%20regions%20in%20transition_0.pdf
[Accessed 12 August 2022].

EC, 2022a. *ec.europa.eu*. [Online]
Available at: https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/european-agricultural-fund-rural-development-eafrd_en
[Accessed 26 July 2022].

EC, 2022b. *cinea.ec.europa.eu*. [Online]
Available at: https://cinea.ec.europa.eu/programmes/connecting-europe-facility_en
[Accessed 26 July 2022].

EC, 2022c. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/regional_policy/funding/cohesion-fund_en

[Accessed 27 July 2022].

EC, 2022d. *cinea.ec*. [Online]

Available at: https://cinea.ec.europa.eu/programmes/life_en

[Accessed 26 July 2022].

EC, 2022e. *climate.ec.europa.eu*. [Online]

Available at: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en

[Accessed 30 November 2022].

EC, 2022f. *climate.ec.europa.eu*. [Online]

Available at: https://climate.ec.europa.eu/eu-action/funding-climate-action/modernisation-fund_ro

[Accessed 12 August 2022].

EC, 2022g. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism/just-transition-funding-sources_en

[Accessed 25 November 2022].

EC, 2022h. *climate.ec.europa.eu*. [Online]

Available at: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/free-allocation-modernisation-energy-sector_en

[Accessed 26 July 2022].

EC, 2022i. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/regional_policy/funding/just-transition-fund/just-transition-platform_en

[Accessed 30 November 2022].

EC, 2022j. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/regional_policy/funding/just-transition-fund/just-transition-platform/helpdesk_en

[Accessed 30 November 2022].

EC, 2022k. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/clima/eu-action/funding-climate-action/innovation-fund/policy-development_en

[Accessed 26 July 2022].

EC, 2022l. *ec.europa.eu*. [Online]

Available at: https://ec.europa.eu/regional_policy/funding/erdf_en

[Accessed 26 July 2022].

EC, 2022m. *ec.europa.eu*. [Online]

Available at: <https://ec.europa.eu/social/main.jsp?catId=326&langId=en>

[Accessed 26 July 2022].

EC, 2022n. *eeef.lu*. [Online]

Available at: <https://www.eeef.lu/eeef-ta-facility.html>

[Accessed 26 July 2022].

EC, 2022o. *energy.ec.europa.eu*. [Online]

Available at: https://energy.ec.europa.eu/topics/oil-gas-and-coal/eu-coal-regions/target-technical-assistance_en

[Accessed 26 July 2022].

EC, 2022p. *eu.europa.eu*. [Online]

Available at: <https://ec.europa.eu/european-social-fund-plus/en/what-esf>

[Accessed 26 July 2022].

EC, 2022q. *eu.europa.eu*. [Online]

Available at: https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

[Accessed 26 July 2022].

EC, 2022r. *eur-lex.europa.eu*. [Online]

Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1854&from=EN>

[Accessed 30 November 2022].

EC, 2022s. *research-and-innovation.ec.europa.eu*. [Online]

Available at: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/research-fund-coal-and-steel-rfcs_en

[Accessed 26 July 2022].

EC, 2022t. *energy.ec.europa.eu*. [Online]

Available at: https://energy.ec.europa.eu/topics/markets-and-consumers/capacity-mechanisms_en

[Accessed 09 December 2022].

Economica, 2020. *economica.net*. [Online]

Available at: https://www.economica.net/virgil-popescu-la-complexul-energetic-oltenia-va-fi-restructurare-naturala-4-000-de-angajati-se-pensioneaza-in-4-ani_179990.html

[Accessed 25 November 2022].

EIB, 2022a. *eib.org*. [Online]

Available at: <https://www.eib.org/en/publications/european-investment-advisory-hub>

[Accessed 26 July 2022].

EIB, 2022b. *jaspers.eib.org*. [Online]

Available at: <https://jaspers.eib.org/>

[Accessed 26 July 2022].

Ekathimerini, 2022. *ekathimerini.com*. [Online]

Available at: <https://www.ekathimerini.com/news/1181612/greece-pushing-back-phase-out-of-lignite-plants-due-to-tackle-energy-crisis/>

[Accessed 07 November 2022].

Ember, 2022. *ember-climate.org*. [Online]

Available at: <https://ember-climate.org/data/data-tools/carbon-price-viewer/>

[Accessed 29 November 2022].

Enerdata, 2022. *Enerdata*. [Online]

Available at: <https://www.enerdata.net/publications/daily-energy-news/spain-approves-closure-14-gw-coal-fired-plant-conditions.html>

[Accessed 07 November 2022].

EPG, 2021. *The sustainable transition of Gorj County*, Bucharest: EPG.

EPG, et al., 2020. *Accelerated lignite exit in Bulgaria, Romania and Greece*, s.l.: s.n.

Euractiv, 2022a. *euractiv.com*. [Online]

Available at: <https://www.euractiv.com/section/energy/opinion/hungary-risks-billions-in-eu-funds-if-it-goes-ahead-with-investments-in-coal/>

[Accessed 07 November 2022].

Euractiv, 2022b. *euractiv.com*. [Online]

Available at: <https://www.euractiv.com/section/energy/news/poland-to-slow-coal-phase-out-process-maintain-2049-end-date/>

[Accessed 10 November 2022].

Europa Liberă România, 2022. *romania.europalibera.org*. [Online]

Available at: <https://romania.europalibera.org/a/centrala-nculeara-doicesti/31917155.html>

[Accessed 23 November 2022].

Europe Beyond Coal, 2020. *Saying Adios to Coal, Lessons on Just Transition from Spain*, s.l.: Europe Beyond Coal.

Europe Beyond Coal, 2022a. *beyond-coal.eu*. [Online]

Available at: <https://beyond-coal.eu/database/>

[Accessed 06 December 2022].

Europe Beyond Coal, 2022b. *beyond-coal.eu*. [Online]

Available at: <https://beyond-coal.eu/coal-exit-tracker/>

[Accessed 03 November 2022].

Europe Beyond Coal, 2022c. *beyond-coal.eu*. [Online]

Available at: <https://beyond-coal.eu/2022/05/12/slovakia-presses-ahead-with-coal-phase-out-as-solution-to-energy-crisis/>

[Accessed 8 November 2022].

Eurostat, 2022. *ec.europa.eu*. [Online]

Available at: <https://ec.europa.eu/eurostat/web/main/data/database>

[Accessed 10 November 2022].

GEO 69/2019, 2019. [Online]

Available at:

https://mmuncii.ro/j33/images/Documente/Munca/2019/13012020OUG_69_din_2019_concedieri_colective.pdf

[Accessed 25 November 2022].

Greenpeace, 2021. *Scenario for a Failed Transition Analysis of the decarbonisation plan of the Oltenia Energy Complex*, s.l.: Greenpeace.

Greenpeace, 2022. *Producția descentralizată de energie și comunitățile de energie, parte din pachetul de măsuri pentru cei afectați de tranziția energetică în zonele miniere ale României*, s.l.: Greenpeace.

IDDR and Climate Strategies, 2017. *Lessons from previous 'Coal Transitions' High-level Summary for Decision-makers*, s.l.: IDDR and Climate Strategies.

IEA, 2022. *iea.org*. [Online]

Available at: <https://www.iea.org/reports/world-energy-outlook-2022/an-updated-roadmap-to-net-zero-emissions-by-2050>

[Accessed 29 November 2022].

IMF, 2022. *Surging Energy Prices in Europe in the Aftermath of the War: How to Support the Vulnerable and Speed up the Transition Away from Fossil Fuels*, s.l.: International Monetary Fund.

Infofinanciar, 2022. *infofinanciar.ro*. [Online]

Available at: <https://www.infofinanciar.ro/un-miliard-de-euro-pentru-modernizarea-sistemului-energetic-virgil-popescu-termocentralele-nu-se-inchid.html>

[Accessed 22 November 2022].

IRENA, 2020. *Innovation lanscape brief: Community-ownership brief*, Abu Dhabi: International Renewable Energy Agency.

LSE, 2022a. *climate-laws.org*. [Online]

Available at: <https://climate-laws.org/geographies/finland/laws/law-416-2019-banning-the-use-of-coal-for-energy-purposes>

[Accessed 03 November 2022].

LSE, 2022b. *climate-laws.org*. [Online]

Available at: <https://climate-laws.org/geographies/netherlands/laws/law-prohibiting-coal-in-electricity-production>

[Accessed 03 November 2022].

Ministry of Energy, 2016a. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/ministerul-energiei-a-scos-in-dezbatere-publica-ordonanta-de-urgenta-privind-includerea-ceh-si-cnu-pe-lista-societatilor-care-beneficiaza-de-masuri-de-protectie-sociala-acordate-persoanelor-disponibil/>

[Accessed 22 November 2022].

Ministry of Energy, 2016b. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/guvernul-a-adoptat-un-memorandum-privind-ajutorul-de-stat-pentru-inchiderea-a-doua-mine-neviabile-din-cadrul-ceh/>

[Accessed 22 November 2022].

Ministry of Energy, 2020. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/5-februarie-2020-guvernul-a-aprobat-o-ordonanta-de-urgenta-prin-care-ce-oltenia-va-primi-banii-pentru-acordarea-ajutorului-de-salvare-a-complexului-energetic-oltenia/>

[Accessed 25 November 2022].

Ministry of Energy, 2021a. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/guvernul-aloca-ajutor-de-stat-pentru-anul-2021-pentru-minele-lonea-si-lupeni-ceh-si-pentru-minele-din-cadrul-societatii-nationale-de-inchideri-mine-valea-jiului-s-a/>

[Accessed 22 November 2022].

Ministry of Energy, 2021b. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/guvernul-aloca-fonduri-pentru-plata-venitului-lunar-de-completare-de-care-beneficiaza-persoanele-disponibilizate-de-la-ceo-si-ceh/>

[Accessed 22 November 2022].

Ministry of Energy, 2021c. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/acord-important-pentru-cet-paroseni-in-prima-parte-a-anului-2022-vor-incepe-testele-pentru-a-inlocui-carbunele-cu-peletii-produsi-de-arbaflame/>

[Accessed 22 November 2022].

Ministry of Energy, 2022a. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/ajutor-de-stat-de-peste-40-000-mii-lei-pentru-ceh/>

[Accessed 22 November 2022].

Ministry of Energy, 2022b. *energie.gov.ro*. [Online]

Available at: <https://energie.gov.ro/aproximativ-14-miliarde-de-euro-din-fondul-de-modernizare-pentru-finantarea-unor-proiecte-strategice-in-sectorul-energetic-din-romania/>

[Accessed 02 November 2022].

Ministry of Energy, 2022c. *energie.gov.ro*. [Online]
Available at: https://energie.gov.ro/wp-content/uploads/2022/05/OUG_masuri-decarbonizare-31.05-1.pdf

[Accessed 29 November 2022].

Ministry of Energy, 2022d. *energie.gov.ro*. [Online]
Available at: https://energie.gov.ro/wp-content/uploads/2022/05/Nota-de-Fundamentare_oug-masuri-decarbonizare-1.pdf

[Accessed 28 November 2022].

Ministry of Energy, 2022e. *energie.gov.ro*. [Online]
Available at: <https://energie.gov.ro/wp-content/uploads/2022/05/Anexa-1-Inchideri-capacitati-1.pdf>

[Accessed October 2022].

Ministry of Energy, 2022f. *energie.gov.ro*. [Online]
Available at: <https://energie.gov.ro/wp-content/uploads/2022/06/Minuta-Comisia-Dialog-Social-16.06.2022-1.pdf>

[Accessed October 2022].

Ministry of Investments and European Projects, 2022. *mfe.gov.ro*. [Online]

Available at: <https://mfe.gov.ro/wp-content/uploads/2022/12/21e46881d6b62fc6f6941423d889a14e.pdf>

[Accessed 08 December 2022].

National Energy Regulatory Authority, 2022. *anre.ro*. [Online]
Available at: <https://www.anre.ro/ro/energie-electrica/rapoarte/puterea-instalata-in-capacitatiile-de-productie-energie-electrica/>

[Accessed November 2022].

Nuclearelectrica, 2022. *nuclearelectrica.ro*. [Online]
Available at: <https://www.nuclearelectrica.ro/2022/06/15/consiliul-judetean-dambovita-alaturi-de-primaria-doicesti-nuclearelectrica-si-e-infra-au-organizat-conferinta-de-informare-locala-cu-tema-dezvoltarea-primul-reactor-modular-mic-smr-nusc/>

[Accessed 23 November 2022].

Official Journal of Romania, 2022a. *monitoruloficial.ro*. [Online]
Available at: <https://monitoruloficial.ro/Monitorul-Oficial--PI--659--2022.html>

[Accessed 28 November 2022].

Official Journal of Romania, 2022b. *monitoruloficial.ro*. [Online]
Available at: <https://monitoruloficial.ro/Monitorul-Oficial--PI--1163--2022.html>

[Accessed 07 December 2022].

Politico, 2022a. *politico.eu*. [Online]
Available at: <https://www.politico.eu/article/coal-not-taboo-as-eu-seeks-russian-gas-exit-says->

green-deal-chief/

[Accessed 28 November 2022].

Politico, 2022b. *politico.eu*. [Online]

Available at: <https://www.politico.eu/article/europe-coal-crisis-shortage-war-ukraine-russia-gas-reserves/>

[Accessed 07 November 2022].

Presidential Administration, 2022. *presidency.ro*. [Online]

Available at: <https://www.presidency.ro/ro/media/decrete-si-acte-oficiale/decrete-semnate-de-presedintele-romaniei-klaus-iohannis1669728887>

[Accessed 05 December 2022].

Profit, 2022. *profit.ro*. [Online]

Available at: <https://www.profit.ro/povesti-cu-profit/energie/scumpirea-galopanta-a-energiei-catapulteaza-cel-mai-mare-producator-de-energie-pe-carbune-al-romaniei-de-la-pierderi-de-1-6-miliarde-lei-la-profit-net-de-3-3-miliarde-lei-20901339>

[Accessed 07 December 2022].

Renewables Networking Platform, 2019. *energy-cities.eu*. [Online]

Available at: https://energy-cities.eu/wp-content/uploads/2019/06/BP_Loos-en-Gohelle-RNP_2019_en.pdf

[Accessed 26 July 2022].

Rentier, G., Lelieveldt, H. & Kramer, G. J., 2019. Varieties of coal-fired power phase-out across Europe. *Energy Policy*, pp. 620-632.

Reuters, 2022a. *reuters.com*. [Online]

Available at: <https://www.reuters.com/business/energy/netherlands-activates-energy-crisis-plan-removes-cap-coal-plants-2022-06-20/>

[Accessed 03 November 2022].

Reuters, 2022b. *reuters.com*. [Online]

Available at: <https://www.reuters.com/business/energy/finlands-fortum-revive-idle-coal-plant-add-power-capacity-2022-09-16/>

[Accessed 03 November 2022].

Reuters, 2022c. *reuters.com*. [Online]

Available at: <https://www.reuters.com/business/energy/energy-crisis-revives-coal-demand-production-2022-10-19/>

[Accessed 07 November 2022].

Romanian Government, 2016. *gov.ro*. [Online]

Available at: <https://www.gov.ro/ro/guvernul/sedinte-guvern/masuri-de-protectie-sociala-pentru-salariatii-disponibilizati-de-la-complexul-energetic-oltenia-complexul-energetic-hunedoara-i->

societatea-nationala-de-inchideri-mine-valea-jiului

[Accessed 28 November 2022].

Senate, 2022. *senat.ro*. [Online]

Available at: <https://www.senat.ro/legis/PDF/2022/22L447OG.PDF>

Societatea Complexul Energetic Hunedoara S.A., 2022. *cenhd.ro*. [Online]

Available at: <http://www.cenhd.ro/>

[Accessed 22 November 2022].

The Guardian, 2022. *theguardian.com*. [Online]

Available at: <https://www.theguardian.com/business/2022/aug/28/national-grid-nears-deal-third-coal-power-station-on-standby>

[Accessed 04 November 2022].

The Local, 2022a. *thelocal.it*. [Online]

Available at: <https://www.thelocal.it/20220225/italy-may-reopen-coal-plants-amid-concerns-about-energy-supply-pm-says/>

[Accessed 07 November 2022].

The Local, 2022b. *thelocal.dk*. [Online]

Available at: <https://www.thelocal.dk/20221003/denmark-delays-closure-of-three-power-plants/>

[Accessed 07 November 2022].

UK Government, 2022. *gov.uk*. [Online]

Available at: <https://www.gov.uk/government/publications/uk-emissions-trading-scheme-and-carbon-price-support-apply-for-compensation>

[Accessed 30 November 2022].

URBACT, 2022a. *urbact.eu*. [Online]

Available at: https://urbact.eu/sites/default/files/6_the_funding_matrix_0.pdf

URBACT, 2022b. *urbact.eu*. [Online]

Available at: <https://urbact.eu/>

[Accessed 26 July 2022].

URBACT, 2022c. *urbact.eu*. [Online]

Available at: <https://urbact.eu/good-practices/improving-social-dimension-process-urban-regeneration>

[Accessed 26 July 2022].

Wuppertal Institute, 2022. *Just Transition Toolbox for coal regions*, s.l.: European Commission.

Ziare.Com, 2022. *ziare.com*. [Online]

Available at: <https://ziare.com/centrala-termica/termocentrala-doicesti-daramata-reactor-nuclear-mici-dimensiuni-1772790>

[Accessed 23 November 2022].

Appendix

Draft Government Emergency Ordinance concerning the decarbonisation of the energy sector (30.05.2022)	Approved GEO published in the Official Journal after public consultations (23.06.2022)	Draft Law with amendments voted by the Senate (27.09.2022)	Draft Law voted by the Chamber of Deputies (08.11.2022) and later promulgated by the President (29 November 2022).
			Art. 1. (2). Defining technical reserves as power producing capacities meant to replace the unavailable capacities for which power contracts are in place or be available to ensure the system adequacy, when it cannot be ensured by the energy market.
Art. 2. Banning the construction of new electricity generation capacities based on lignite or hard coal.	No revision.	No revision.	Art. 2. Banning the construction of new electricity generation capacities based on lignite or hard coal with the exception of those already permitted/licensed previous to the enforcement of the normative act.
Art. 3. (1) Termination of lignite and hard coal-fired electricity generation, operation withdrawal and permanent and irreversible closure by 31 December 2030 of the total installed capacity of 4920 MW.	Art. 3. Replacing the phrasing 'permanent and irreversible closure' with simple 'closure'. Extension of the final closure date for lignite and hard coal energy generation, operation withdrawal and closure of lignite and hard coal quarries and mines by 31 December 2032.	No revision.	Art. 3 (1, 2, 3). Specifying the phaseout date by 31 December 2032 the latest, including closure of the power plants, safety works, land repurposing and environmental remediation of quarries and mines by the same date. Establishing retraining and professional reconversion programmes in order to ensure a high employment rate for the dismissed personnel. Specifying that by 2032 the latest, 4920 MW lignite and hard coal fired capacity will be gradually closed, of which 3780 MW by the end of 2025.

<p>(2) Operation withdrawal, permanent and irreversible closure timeline (after the closure of 1695 MW in 2021):</p> <ul style="list-style-type: none"> • 31 Dec. 2022: 660 MW lignite; • 31 Dec. 2025: 1425 MW, of which, 1375 MW lignite and 50 MW hard coal; • 31 Dec. 2030: 1140 MW, of which 990 MW lignite and 150 MW hard coal. 	<p>Art. 4 (1). Specifying that the closure of lignite and hard coal-fired power units will be closed according to the Complexul Energetic Oltenia’s restructuring plan.</p> <p>The other coal-fired capacities will be closed as follows:</p> <ul style="list-style-type: none"> • CET Craiova II (spun off to the City of Craiova’s municipality), CET Govora, UAT Municipiul Iași- 31 December 2025. • Complexul Energetic Hunedoara (CET Paroșeni)- 31 December 2030. 	<p>No revision.</p>	<p>Art. 4 (1). Specifying that the remaining active power plants (after the closure of 1695 MW by 31 December 2021) are to be gradually withdrawn and can become technical reserves, at the request of the national energy dispatcher, as follows:</p> <ul style="list-style-type: none"> • End of 2022: 660 MW lignite; • End of 2025: 1425 MW lignite; • End of 2032 the latest: 1,140MW lignite and hard coal.
<p>(5, 6) Establishing technical reserves of lignite-based electricity capacities owned by Complexul Energetic Oltenia: 975 MW in the 2023-2025 period, 990 MW in the 2026-2030 period, in order to maintain the stability and safe operation of the National Power System.</p>	<p>Removing the closure timeline for technical reserves. Art. 4 (3). All the listed capacities, Turceni 4, 5, Rovinari 4, 5, 6, Ișalnița 7 (1965MW), will operate as technical reserves in the 2023-2030 period.</p>	<p>Art. 4 (3, 4). Along with the already mentioned technical reserves for the 2023-2030 period, another two groups are added to the list, namely Rovinari 3 and Turceni 7 (660 MW) for the 2023-2026 period. It is stated that their initial closure deadline (31 December 2022) can be delayed under justified circumstances.</p>	<p>Eliminating the timeline which was mentioning the exact power plants meant to be established as technical reserves.</p> <p>Art. 4 (3, 4, 5). Detailing the procedure for the establishment of technical reserves as follows:</p> <ul style="list-style-type: none"> • technical reserves are to be established by the line minister at the request of the transport system operator, on the basis of an adequacy analysis. <p>Instances for establishing technical reserves:</p> <ul style="list-style-type: none"> • replacing the unavailable units where the power contracts are in place and the energy demand cannot be met by the energy market;

			<ul style="list-style-type: none"> • the adequacy of the National Power System is jeopardised; other instances of force majeure defined by the law, where there is a need for TSO intervention on the energy market. • technical reserves are to be gradually closed by 31 December 2032; • enabling technical reserves is conditioned by state aid law and compliance with environmental legislation requirements.
		<p>Art. 4 (6). New electricity generation capacities will be commissioned as following:</p> <ul style="list-style-type: none"> • 2 CCGT “ready for hydrogen” units: Işalnița 850 MW and Turceni 475 MW • 8 photovoltaic parks, amounting 735 MW <p>These investments will be financed from the Modernisation Fund, €897 million will be deployed in this sense.</p>	<p>No revision.</p>

<p>Art.5. (1, 2, 3) Forbidding the construction of new lignite quarries and hard coal mines, granting new exploitation permits, as well as production continuation at lignite quarries and hard coal mines after the date of final and irreversible closure. The Line Ministry cannot initiate any normative acts which stipulate the reopening of the mines and quarries.</p>	<p>Removed.</p>	<p>No revision.</p>	<p>No revision.</p>
<p>Art. 6. (1, 2) Completing the safety and irreversible closure works, the land repurposing and environmental remediation of lignite quarries and hard coal mines, according to the timetable, which can be consulted in the Annex 2 of the document.</p>	<p>No revision.</p>	<p>No revision.</p>	<p>Art. 6 (3). Adding further details on what land repurposing, environmental remediation and safety works are entailing, such as ensuring soil quality in the mining areas, regulating the utilisation and access to waste deposits and the utilisation of landforms after decommissioning of the power groups.</p>
<p>Art. 7. (1, 2, 3, 4, 5)/ Art. 8 (1, 2) Establishing support measures, such as state aid, granted annually through Government decisions with the approval of the European Commission, for the permanent and irreversible closure and decommissioning of lignite and hard coal capacities, as well as for the closure of quarries and mines.</p> <p>Art. 15. Financing the support measures is ensured from the state budget and/or European funds.</p>	<p>Art. 7. Replacing ‘permanent and irreversible closure’ with simple ‘closure’ and eliminating the decommissioning possibility.</p> <p>The rest of the article has no further revisions.</p>	<p>No revision.</p>	<p>No revision.</p>

<p>Art. 12. Ensuring social protection measures for the dismissed personnel and access to professional reconversion and retraining programmes.</p> <p>Art. 13-14. People who have lost their jobs, especially in Gorj, Hunedoara and Dolj counties, have priority for professional reconversion and retraining courses provided by the National Vocational Training Plan, as well as the professional training needs identified by the Territorial Just Transition Plans; additionally, they can also benefit from non-reimbursable financing for the purchase of rooftop PV systems of 3-5 kW installed power.</p>	<p>Art. 12. Besides social protection measures, active measures to counter unemployment shall be implemented.</p>	<p>Art. 14. Dismissed personnel from Mehedinți and Vâlcea counties can also benefit from priority to the National Vocational Training and other social protection measures.</p>	<p>Art. 13. Eliminating the possibility of financing rooftop PV systems as social protection measure for the dismissed personnel.</p>
<p>Art. 15. Financing the support measures is ensured from the state budget and/or European funding.</p>	<p>Art. 15. Financing the support measures will be ensured from the budget of the Ministry of Energy and/or European funding through the Just Transition Fund.</p>	<p>No revision.</p>	<p>No revision.</p>

<p>Art. 16. Establishing three commissions and working groups:</p> <ul style="list-style-type: none"> • (1) The inter-ministerial Coal Commission (consisting of representatives from the Ministry of Economy, Ministry of Finance, Ministry of Investments and European Projects, Ministry of Energy, Ministry of Labor and Social Solidarity, Ministry of Environment, Water and Forests, Ministry of Development and Administration, Ministry of Entrepreneurship and Tourism, and counties heads from Gorj, Hunedoara, Dolj) to coordinate the implementation of the decarbonisation process. • (10, 12) Working Group (composed by experts from the central and local authorities, representatives of the Environmental Fund Administration, the National Energy Regulatory Authority, the National Authority for Mineral Resources and the involved economic parties) for coordinating and monitoring the implementation of the decarbonisation process. • (7, 8, 9) The Advisory Committee (composed by representatives of local authorities, trade unions, non-governmental organizations, private operators, academia representatives and experts from the energy field) to assist on relevant issues concerning the implementation of the decarbonisation agenda, which collaborates with the Coal Commission and the Working Group and participates in the meetings, at their requests, as appropriate. 	<p>Art. 18 (1, 7, 8, 9, 10, 12). Representatives from the Ministry of Development and Administration will no longer be part of the Coal Commission. Apart from this aspect, the three entities' composition stays unchanged.</p> <p>Specifying that the economic parties involved are the coal-fired electricity producers.</p>	<p>Art. 18 (1). Representatives from Mehedinți and Vâlcea counties shall be part of the inter-ministerial Coal Commission.</p>	<p>No revision.</p>
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	<p>Introducing new provisions:</p> <p>Art. 16. In order to ensure the safe and stable functioning of the National Power System, investments in natural gas-fired electricity generation capacities can be financed from the NRRP and the Modernization Fund.</p> <p>Art. 17. The possibility of making coal mines tourist attractions.</p>	<p>No revision.</p>	<p>No revision.</p>
<p>Art. 17. Breaching the provisions entails civil, contravention or criminal liability of the economic operators involved.</p> <p>Art. 18 (1, 2). The following constitute contraventions and shall be sanctioned:</p> <ul style="list-style-type: none"> • The construction of new electricity production capacities based on lignite and hard coal, sanctioned with a fine between 5% and 10% of the turnover achieved by the legal entity in the year prior to the application of the sanctioning. • The failure to comply with the withdrawal timeline of operation and closure of the capacities for the production of electricity based on lignite and hard coal, sanctioned with a fine ranging between 50,000 and 100,000 RON and the reimbursement of the granted state aid. • The failure to comply with the permanent and irreversible closure timeline the production termination, the carrying out of the safety and 	<p>Removed.</p>	<p>No revision.</p>	<p>Art. 20 (2). Reintroducing sanctions as following: the failure to comply with the closing timeline for the lignite and hard coal power units is deemed as contravention and shall be sanctioned with a fine up to 5% of the net turnover of the economic operator.</p>

<p>irreversible closure works and the land repurposing and environmental remediation of lignite quarries and coal mines is sanctioned with a fine between 10,000 and 100,000 RON and the reimbursement of the granted state aid.</p>			
<p>Art. 20. In the event of an energy crisis, the Romanian Government, at the proposal of the Ministry of Energy, may take the decision to restart closed power plants while complying with the December 31, 2030 closure deadline.</p>	<p>Art 19. In addition to extending the final closure deadline, in the event of an energy crisis, the Government may postpone the closure of coal-fired capacities or the restart of closed mines and quarries, while complying with the 31 December 2032 closure deadline.</p>	<p>No revision.</p>	<p>No revision.</p>

The Energy Policy Group (EPG) association is an independent think-tank, specialised in energy and climate policies. Founded in 2014, EPG gathers experts who are working together in international research projects. EPG is highly focused on the larger context of European policies and of the global trends, in its endeavour to promote a constructive dialogue on decarbonisation among the decision makers and the larger audience.



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