

COAL IN ROMANIA

A review of coal assets
and their impact on the environment



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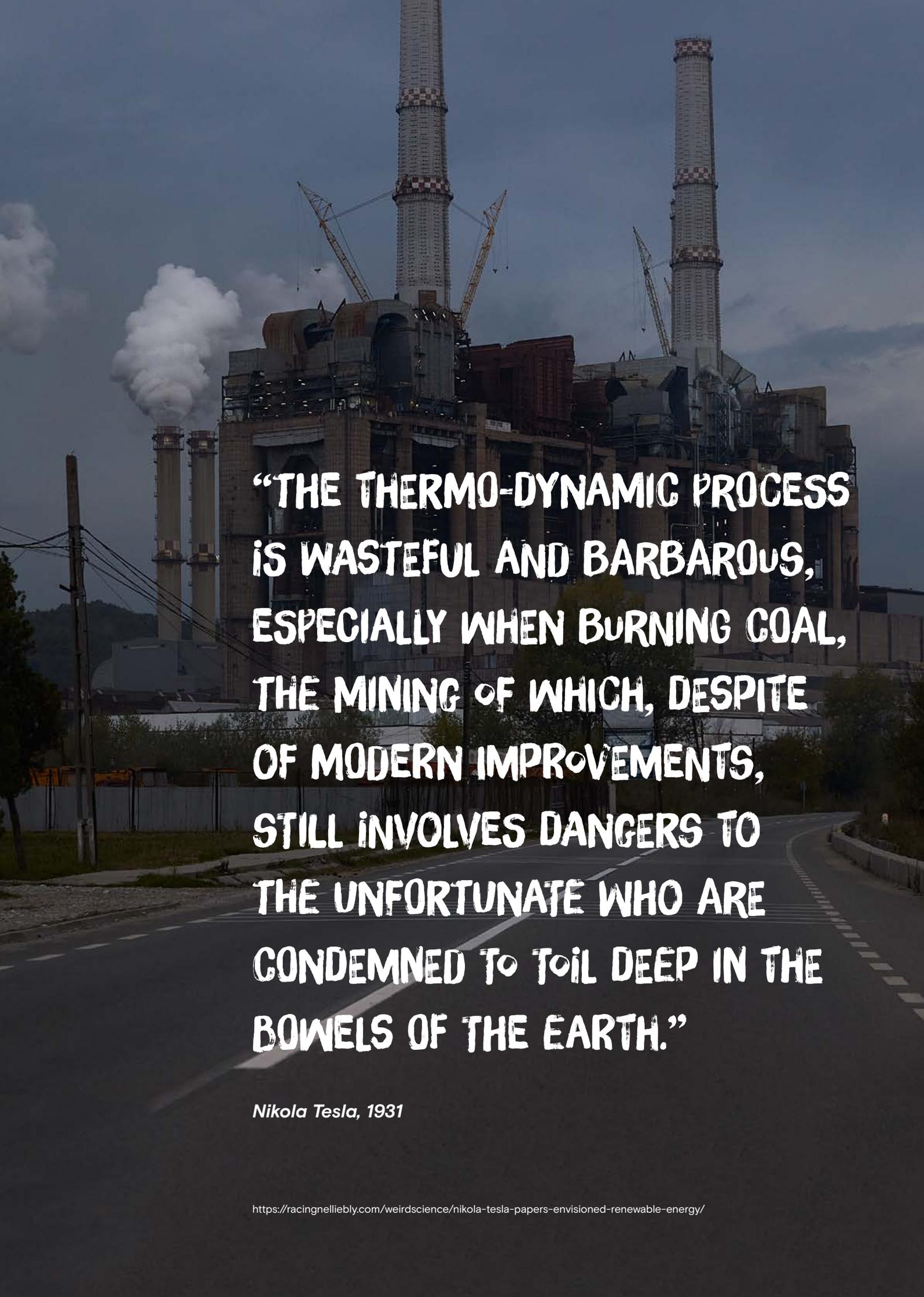
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**“THE THERMO-DYNAMIC PROCESS
IS WASTEFUL AND BARBAROUS,
ESPECIALLY WHEN BURNING COAL,
THE MINING OF WHICH, DESPITE
OF MODERN IMPROVEMENTS,
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CONDEMNED TO TOIL DEEP IN THE
BOWELS OF THE EARTH.”**

Nikola Tesla, 1931

INTRODUCTION

Coal is the most polluting source of energy. Although we recognise its contribution to the development of societies over the last 200 years, we must admit that its negative impact on the environment is much greater than the benefits it creates. Coal is technologically obsolete, and any compensatory measures implemented to reduce its impact on the environment are ineffective and very expensive.

The European Union currently has the largest programme in the world to limit the effects of climate change. Through the European Green Deal, Member States aim to be climate neutral by 2050, i.e. to reduce net greenhouse gas emissions to zero or to compensate emissions with massive afforestation and biodiversity protection.

The first step in reducing greenhouse gases is to phase out coal-fired electricity by 2030.¹ Three Member States have already ended coal production, six do not use coal and another 10 have announced that they will phase out coal by 2030. Germany announced 2038 as the year for closure of coal power capacities, but the country recently set more ambitious climate targets which may result in an earlier phase-out.² Proposals to phase out coal are being discussed in four Member States. Poland and Bulgaria have not taken any official steps to set a date.

In May 2021, Romania announced that it plans to phase out coal by 2032 in its Recovery and Resilience Plan.³ The policies and measures needed to achieve this goal will be outlined in the next two years. Although Romania has a lower coal capacity than some other Member States, national authorities have long avoided supporting the transition from coal to renewable energy sources. Today, coal is artificially kept alive by huge amounts of state funding⁴ and poorly enforced legislation under the pretext of energy security. However, even the coal phase-out date announced in May is not compatible with climate targets: it is not clear whether the commitment was made only for hard coal or also for lignite. In reality, lignite is the biggest polluter in Romania, and the country currently has a small number of power plants that operate on hard coal. The right to a healthy environment is guaranteed by the Constitution, but is constantly breached by coal-based energy producers.

This report documents the power plants and coal mines in Romania in order to understand their negative impact on the environment, economy and public health and support a more rapid coal phase-out. The analysis was performed based on information collected by Bankwatch Romania during its activity since 2012 and on the most recent official documents and public statements. Certainly, the real impact of coal is greater than the data presented here indicates⁵.

1. Europe Beyond Coal, ['Overview: National coal phase-out announcements in Europe](#), 22 April 2021.

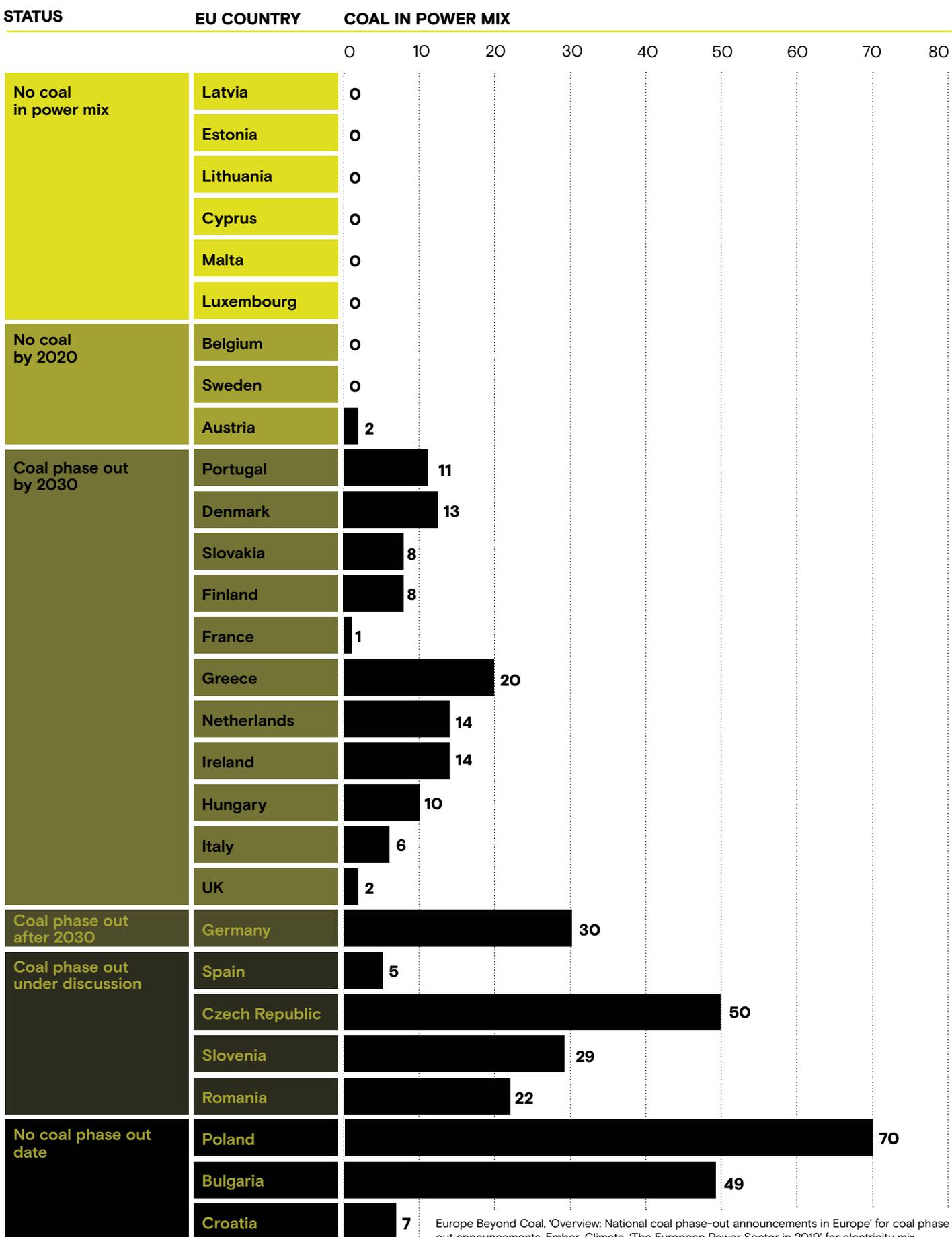
2. Madeline Chambers, ["German cabinet agrees more ambitious CO2 cuts before September election"](#), *Reuters*, 12 May 2021.

3. Ministry of European Projects and Investments, [National Recovery and Resilience Plan](#), 2 June 2021.

4. Aurel Constantin, ["Bankwatch Romania warns the European Commission the billion-euro state aid for OEC breaches State aid rules"](#), *Business Review*, 19 April 2021.

5. Besides the data available in official documents, no additional field research was carried out. The report does not analyze the impact of coal mines on water bodies and natura 2000 sites or other natural parks, as the official environmental documentation does not provide extensive research on this type of impact. However, it is generally known that coal mining and power plants' activity can affect the quality of water bodies, soil and natural areas. See https://en.wikipedia.org/wiki/Health_and_environmental_impact_of_the_coal_industry

Fig. 1 Coal in electricity mix of EU Member States by coal phase out announcements

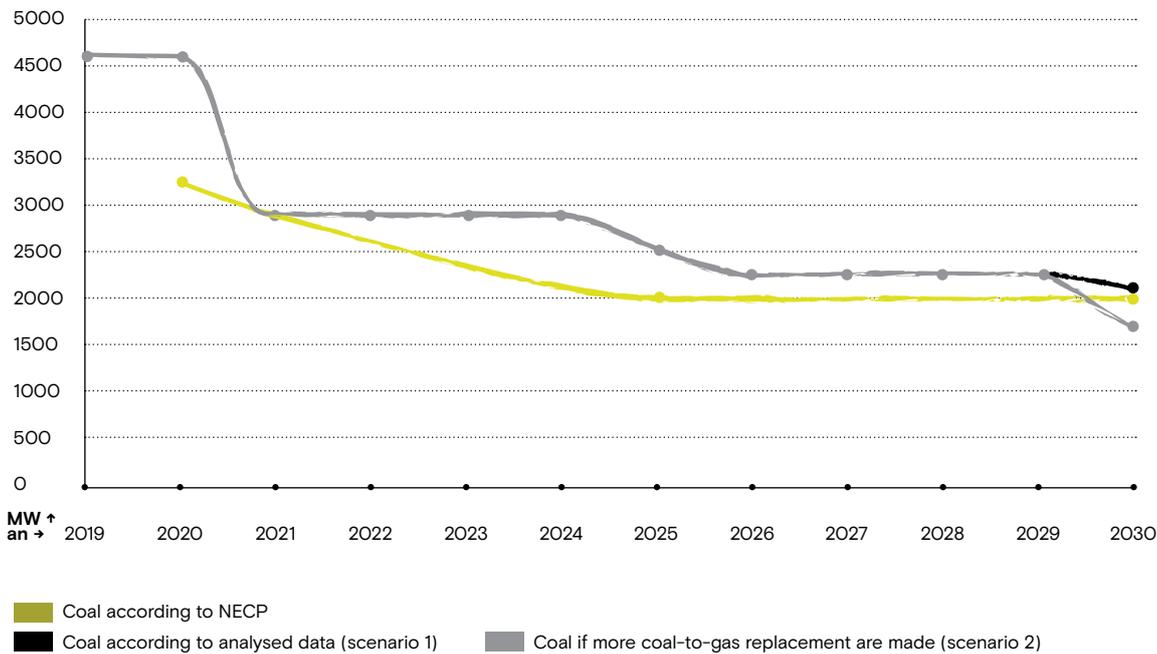


Europe Beyond Coal, 'Overview: National coal phase-out announcements in Europe' for coal phase out announcements, Ember-Climate, 'The European Power Sector in 2019' for electricity mix

RESULTS

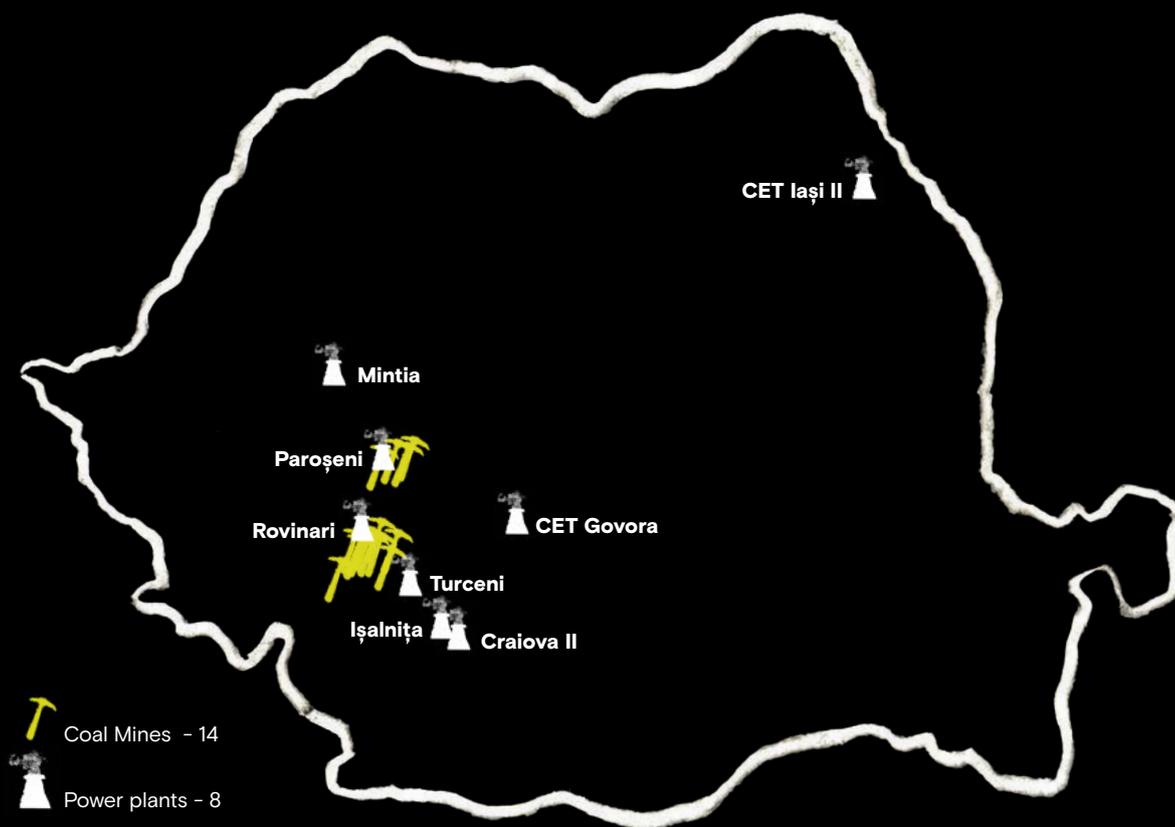
The installed capacity of coal in the national energy system was 4,590 MW in 2020, and it produced about 17 per cent of the electricity used in Romania. The projected trajectory of coal energy production will steadily decline until 2026, after which it will stagnate.

Fig. 2 Future installed coal capacity in Romania



In the two scenarios shown in figure 2, calculated based on official sources and declarations from authorities, the coal capacity of Romania in 2030 should be either 2,100 MW or 1,650 MW – neither of which corresponds to the figure of 1,980 MW that is in the National Energy and Climate Plan (NECP).

Coal power plants in Romania have an average age of 44 years, the oldest being Paroşeni (hard coal, owned by Hunedoara Energy Complex), which went into operation in 1964, and the newest unit 2 at the Craiova thermal power plant, which has operated since 1989 (lignite, owned by Oltenia Energy Complex). Some power plants have been modernised over the years to extend their lifetime, but most of them have exceeded their technical lifespan of 40 years.



Mintia

Commissioned in 1971, closed in 2021
 Installed capacity of 1050 MW in hard coal

Paroşeni

Commissioned in 1964
 Installed capacity of 150 MW in hard coal

Rovinari

Commissioned in 1975
 Installed capacity of 1320 MW in lignite

Turceni

Commissioned in 1980, replaced with fossil gas by 2026
 Installed capacity of 1320 MW in lignite

Işalniţa

Commissioned in 1967, replaced with fossil gas by 2026
 Installed capacity of 630 MW in lignite

Craiova II

Commissioned in 1987
 Installed capacity of 330 MW in lignite

CET Govora

Commissioned in 1973
 Installed capacity of 100 MW in lignite

CET Iaşi II

Commissioned in 1986
 Installed capacity of 50 MW in hard coal

The profitability of coal-fired power plants comes from their level of production. For years, the coal-fired power plants in Romania have been operating at loss. A modelling exercise based on 2019 data⁶ shows that the utilisation rate of coal-fired power plants in Romania will be at 10 per cent in 2020; however, a coal-fired unit cannot operate profitably at utilisation factors below 50 per cent.

6. REKK et al., [Accelerated lignite exit in Bulgaria, Romania and Greece](#), Energy Policy Group, May 2020.

Environmental emissions and compliance

From 17 August 2021, industrial combustion plants will be required to comply with new emissions standards based on best available techniques adopted by the European Commission in 2017,⁷ part of the Industrial Emissions Directive (IED).⁸

A **combustion plant** is any technical apparatus in which fuels are oxidised in order to use the heat thus generated. The IED identifies a single combustion plant as a plant:

- where the waste gases of two or more separate combustion plants are discharged through a common stack and their capacities should be added to calculate the total rated thermal input;
- where two or more separate combustion plants which have been granted a permit for the first time on or after 1 July 1987, or the operators of which have submitted a complete application for a permit on or after that date, are installed in such a way that, taking technical and economic factors into account, their waste gases could in the judgement of the competent authority be discharged through a common stack

For the purpose of calculating the total rated thermal input of a combination of combustion plants, only individual combustion plants with a rated thermal input of over 15 MW are considered

Example: The Craiova II coal power plant has two units of 150 MW each, but the waste gases for both units are discharged through a common stack, so it is considered a single industrial combustion plant of 300 MW.

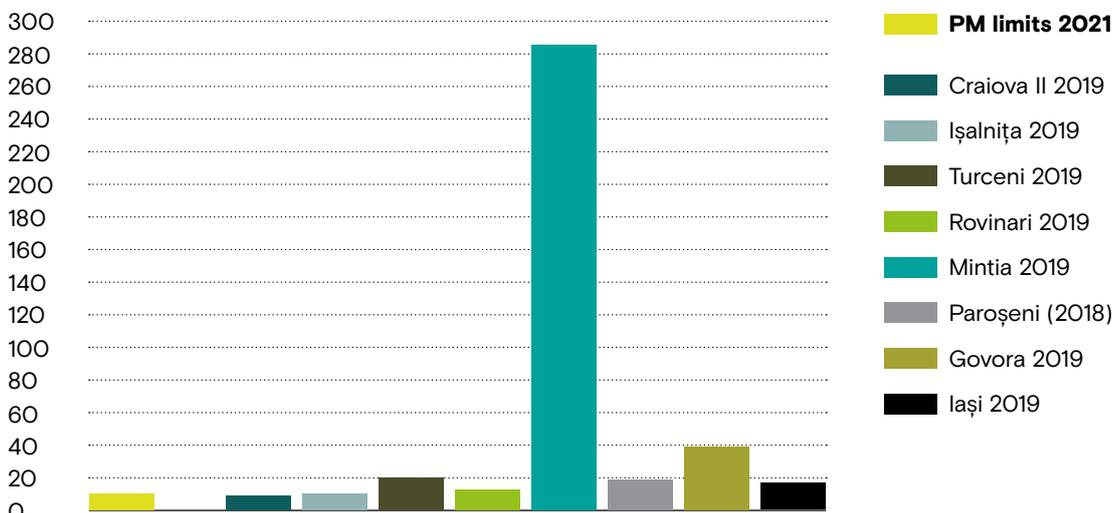
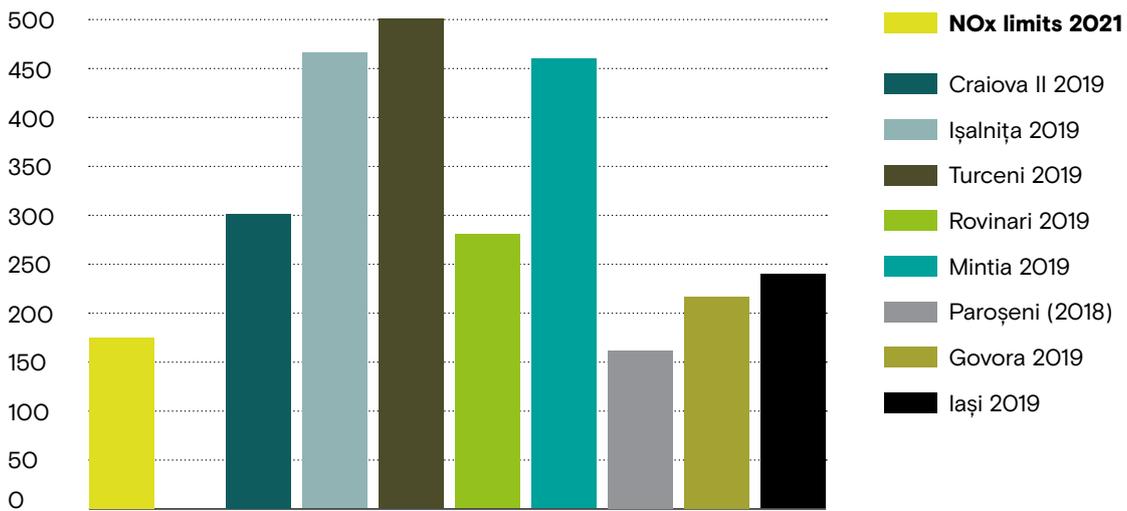
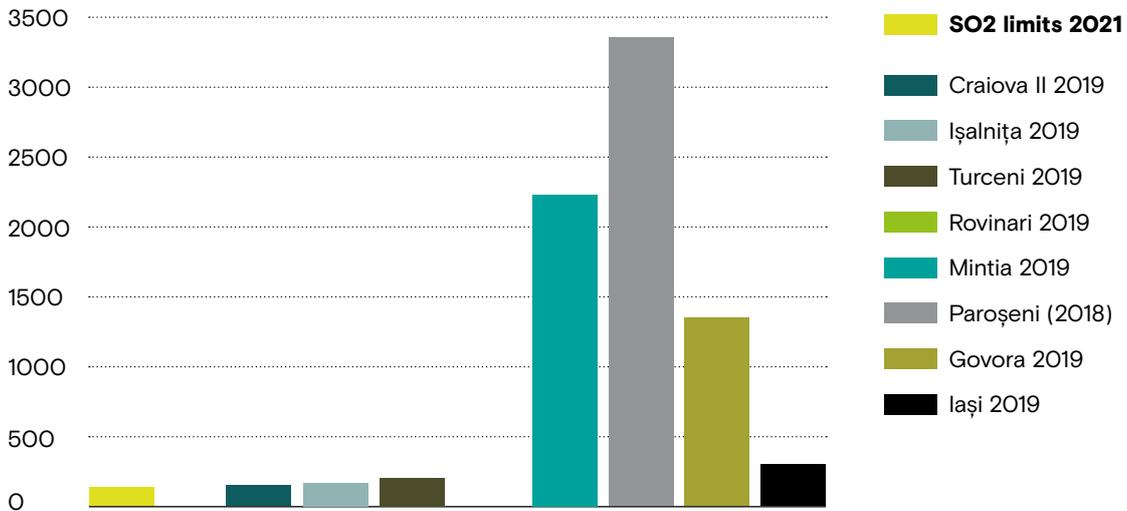
According to the 2019 data, none of the eight power plants in Romania that are 100 per cent coal-fired falls within the new limits. During 2020 and 2021, however, Oltenia Energy Complex announced modernisations to the working installations. Thus, Oltenia's power plants (Craiova, Işalniţa, Turceni and Rovinari) will comply with the environmental norms. The Paroşeni thermal power plant owned by Hunedoara Energy Complex will also comply, because in 2018 works started on a desulphurisation installation (the result is unknown, as there has been no environmental report since 2018). For Mintia it was decided to enter into conservation (the power plant will not be used until further modernisation or decommissioning is decided on), precisely because it could not comply with the rules – not even the old ones. Other plants in this situation include IMA2 from the CET Govora power plant and K1 from CET Iaşi II for which no modernisations were made. CET Govora has planned installations for the reduction of nitrogen oxides (NOx) and sulphur dioxide (SO₂), but has not carried them out due to lack of funds. The installation operates without an integrated environmental permit. The situation of CET Iaşi is uncertain. The thermal power plant will be taken over by the local authorities, but there is no concrete plan for IED compliance (however, it was used for only one month in 2020).

All combustion plants will need to have installed monitoring and control technologies for several new substances as stipulated in the IED – carbon monoxide (CO), hydrochloric acid (HCl), hydrogen fluoride (HF) and mercury (Hg). At the moment they are not reported by almost any coal electricity producer in Romania and there are no plans for compliance in this regard.

7. European Commission, [Commission Implementing Decision \(EU\) 2017/1442 of 31 July 2017 establishing best available techniques \(BAT\) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants](#), *Official Journal of the European Union*, 17 August 2017.

8. European Parliament, Council of the European Parliament, '[Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions](#)', *Official Journal of the European Union*, 17 December 2010.

The risk of non-compliance lies with the new wasteful gases introduced in the directive for all powerplants and for NOx, SO2 and particulate matter (PM) at Govora, Iași II and possibly Paroșeni.



Substances such as SO₂, NO_x and PM are associated with a number of environmental and health problems, including an increased incidence of asthma and bronchitis, as well as cases of acid rain. Coal-fired power plants in Romania cause around 500 premature deaths annually and over 11,000 respiratory diseases, according to 2016 data.⁹ Working in underground mines is also dangerous: 54 miners in Jiu Valley have lost their lives at work in the last 20 years.¹⁰

In addition, coal-fired power plants also emit an impressive amount of carbon dioxide (CO₂), the most common greenhouse gas. The European Union put a price on CO₂ through the EU Emissions Trading System (EU ETS) in order to stimulate emissions reductions. A total number of annual allowances is set for all operators in the EU, with each allowance equivalent to a tonne of CO₂. At the end of the year, power plants need to buy allowances to equal their CO₂ emissions during that year. The price of allowances is on the rise, causing financial problems for most coal-fired energy producers. In 2016 the cost was EUR 6 per certificate (tonne of CO₂); in 2019 it exceeded EUR 20 per certificate, and by 2021 it is approaching EUR 55.

Coal is the fuel that emits the most carbon dioxide, the largest pollutant in Romania and globally. In 2019, 13,219,838 allowances were issued and paid for by Romanian coal producers, as follows:

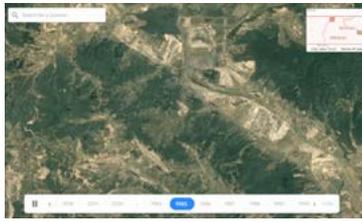
Installation	CO ₂ emissions 2019 (tonnes)	Costs
Craiova II	1,268,134	Roughly EUR 287 million – EUR 36 million from own funds and EUR 251 from state aid In comparison, Oltenia paid EUR 315 million for 7 Mt of CO ₂ in 2020
Işalnița	1,818,205	
Turceni	3,296,552	
Rovinari	4,628,600	EUR 86.3 million in penalties because Hunedoara could not pay for its CO ₂ allowances
Mintia	733,306	
Paroșeni	153,808	Information is not public
Govora	1,028,701	
Iași	292,532	Information is not public

In 2019, Romania's coal power plants produced 35 per cent of the CO₂ emissions of all of the country's industrial operators, for which it paid over EUR 300 million.

Coal mining and the use of coal for energy not only cause air pollution, but also affect the soil and water and lead to the degradation of hundreds of hectares of forests, as well as land for agriculture and housing. Oltenia Energy Complex obtained expansion approval for eight out of the ten lignite mines it owns between 2015 and 2020. Many of them face legal issues regarding their environmental permits, which were elaborated without taking into account the cumulative impact of the mines located in the same area. In addition, the expansions involve the deforestation of 1,500 hectares and the expropriation of 273 households with insufficient compensation, sometimes with the relocation of entire villages. During the expansions and excavations, the water from the neighboring villages was affected, leaving the inhabitants with no drinking water.

9. Europe Beyond Coal et al, [Last Gasp. The coal companies making Europe sick](#), 20 November 2018.

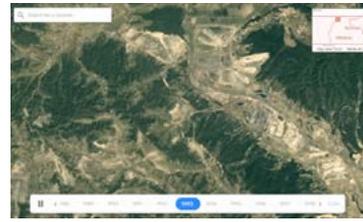
10. Cerasela Bădiță, ["Mining Accidents \(chronology 2000-2019\)"](#), *Agerpres*, 5 July 2019.



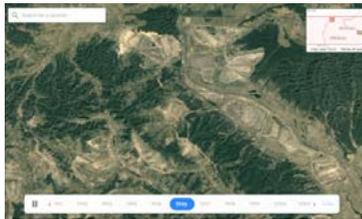
1985



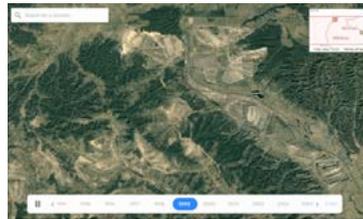
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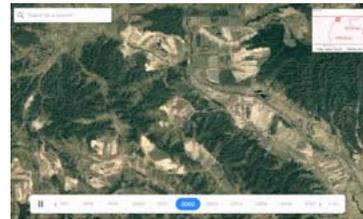
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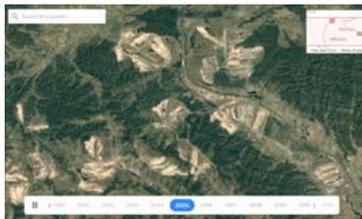
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1999



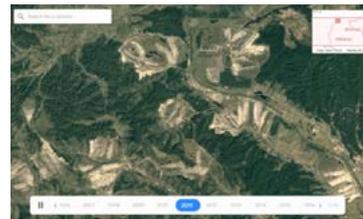
2002



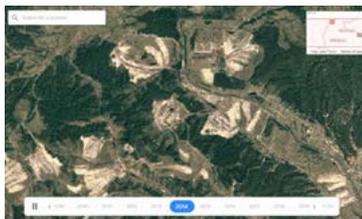
2005



2008



2011



2014



2017



2020

Considering all of these issues, it is clear that coal-based electricity cannot go on any longer. Coal produces devastating environmental and health effects, provides dangerous jobs and is a financial black hole for the companies that produce it, as well as for the state. Romania has set 2032 as the date for the phasing out of coal, although it must and can give up coal before 2030.

The full version of the report, available in Romanian, reviews each existing coal power plant and mining operation in Romania in order to understand their individual impact and provide an overview of their future plans. The report also offers specific recommendations and possible solutions for a fair coal phase-out in Romania, such as:

- **establishing a Coal Commission composed of relevant actors at the central and local level;**
- **replacing coal directly with renewable energy by encouraging investment in new capacities and the energy transmission system;**
- **avoiding any form of State aid for the continuation of coal-based activity. Supporting only those activities that contribute to the energy transition;**
- **allowing the participation of all relevant actors in civil society, in particular trade unions, employers, educational institutions and non-governmental organisations, in planning the future strategies of coal regions;**
- **including in the just transition plans extensive retraining programmes undertaken in partnership with private actors, educational institutions and specialists in the field of renewable energy, but also in other areas that can be exploited sustainably in coal regions;**
- **encouraging the development of SMEs and companies related to specific activities which have potential in the regions through financing schemes or favorable loans;**
- **increasing administrative capacity with specialised staff to manage the just transition process and access European funds, including project writing and consultancy.**



