JUST TRANSITION OR JUST TALK?

Draft National Energy and Climate Plans reveal some EU countries are planning to stick with coal power beyond 2030

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Executive summary

What are EU Member States planning for coal-fired power?

In this briefing we examine the draft National Energy and Climate Plans (NECPs) of the 21 Member States that are still using coal for electricity generation.

- **8** Member States have a clear commitment to phase out coal over the NECP period (2021-2030).
- **2** Member States will phase out coal - but not as an explicitly stated objective in their draft NECPs.
- **11** Member States do not plan to phase out coal by 2030, instead most of them show very little or no coal capacity decrease vs. 2019.

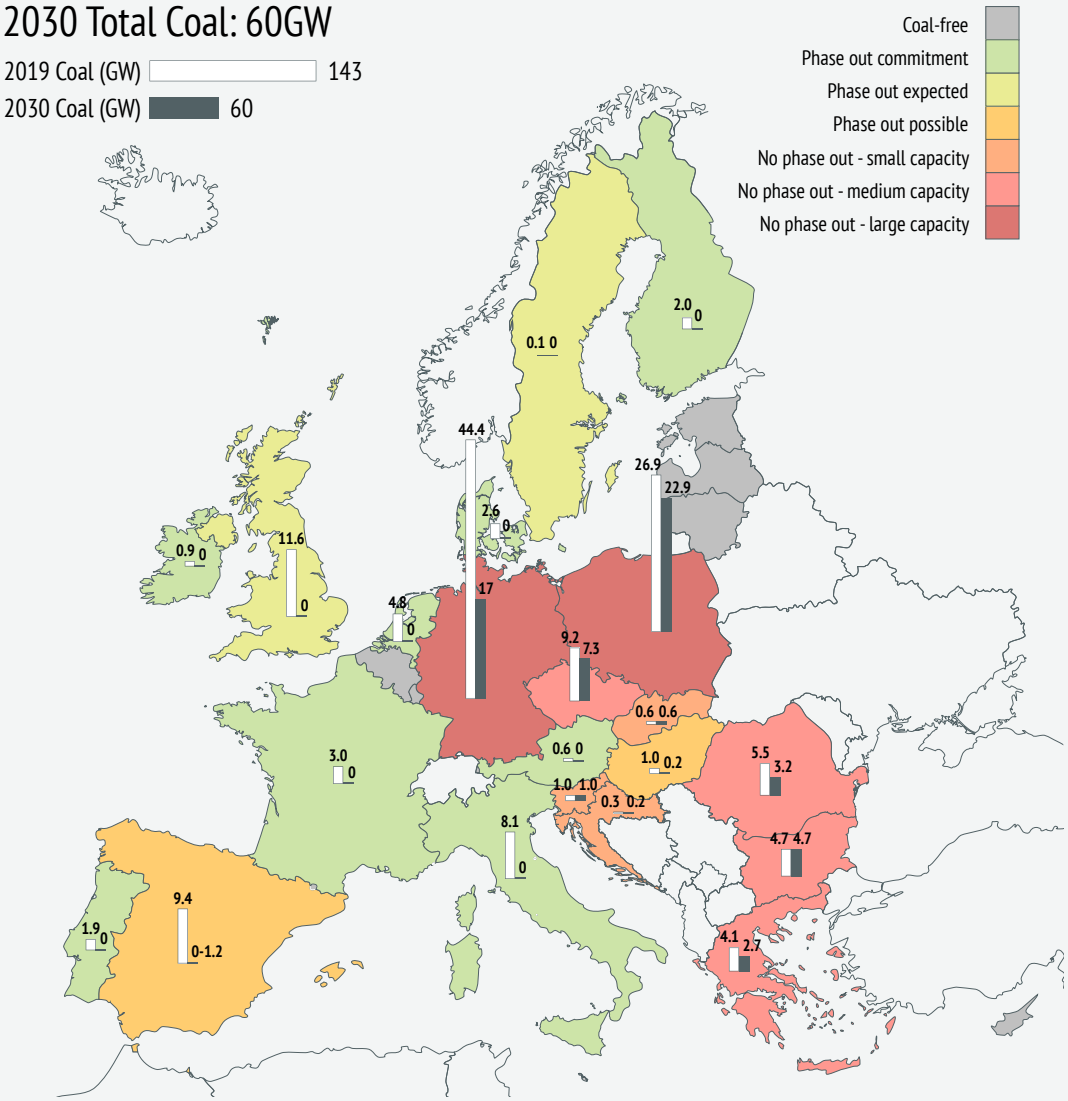
By 2030, on current plans, the vast majority of the EU's remaining coal power capacity will be located in just 6 Member States: Poland, Germany, Czechia, Bulgaria, Romania & Greece.

Many of the Member States with no plans to move away from coal are already benefiting from various EU energy transition support schemes and are asking for increased funding. The support and funding is reaching these countries, including through the EU Commission's *Coal Regions in Transition Platform* initiative - but the draft NECPs make clear that in most of the benefitting countries the move away from coal has not yet been planned.

To fulfill the Paris Agreement and limit the global temperature rise to 1.5°C, and do so in the most cost-effective manner, EU countries need to stop burning coal for electricity by 2030. Our analysis shows that the EU is currently set to miss this goal by a wide margin.

According to the draft NECPs, there would still be 60 GW of installed coal capacity in the EU in 2030, a fall of only 58% vs. the current levels (143 GW). This suggests that too few Member States have grasped the speed and scale of the action needed to transform their energy systems over the next decade.

Figure 1: EU net coal power capacity in 2019 and the projection for 2030 according to the draft NECPs.



2030 planned installed coal capacity was unavailable in the draft NECPs for 7 Member States. Detailed assumptions are provided on pg. 14 in the briefing.

Policy recommendations

1. **The European Commission** must hold EU governments to account on the quality of their draft National Energy and Climate plans, and make recommendations that will ensure that Member States properly plan for the inevitable phase out of coal in a socially just and orderly manner. Climate laggards should not get a free pass.

2. **The European Commission** must ensure that EU support provided for the just transition in the coal regions is conditional on credible and ambitious energy transition commitments by Member States, including significant decreases in coal-fired electricity generation, that are well grounded in the National Energy and Climate Plans.

3. **EU Member States** should accelerate their coal phase out plans and move towards renewables based energy systems. This will step up emission reductions and help put the EU back on-track to meet the commitments of the Paris Agreement, while bringing numerous health, economic and environmental benefits.

4. **EU Member States** should clearly outline in their NECPs the timeline and process for developing and implementing concrete just transition plans for their coal regions as well as the corresponding funding needs - and treat the just transition as one of the priorities. This will scale up EU budget spending in this area and ensure that no one is left behind throughout the energy transition.

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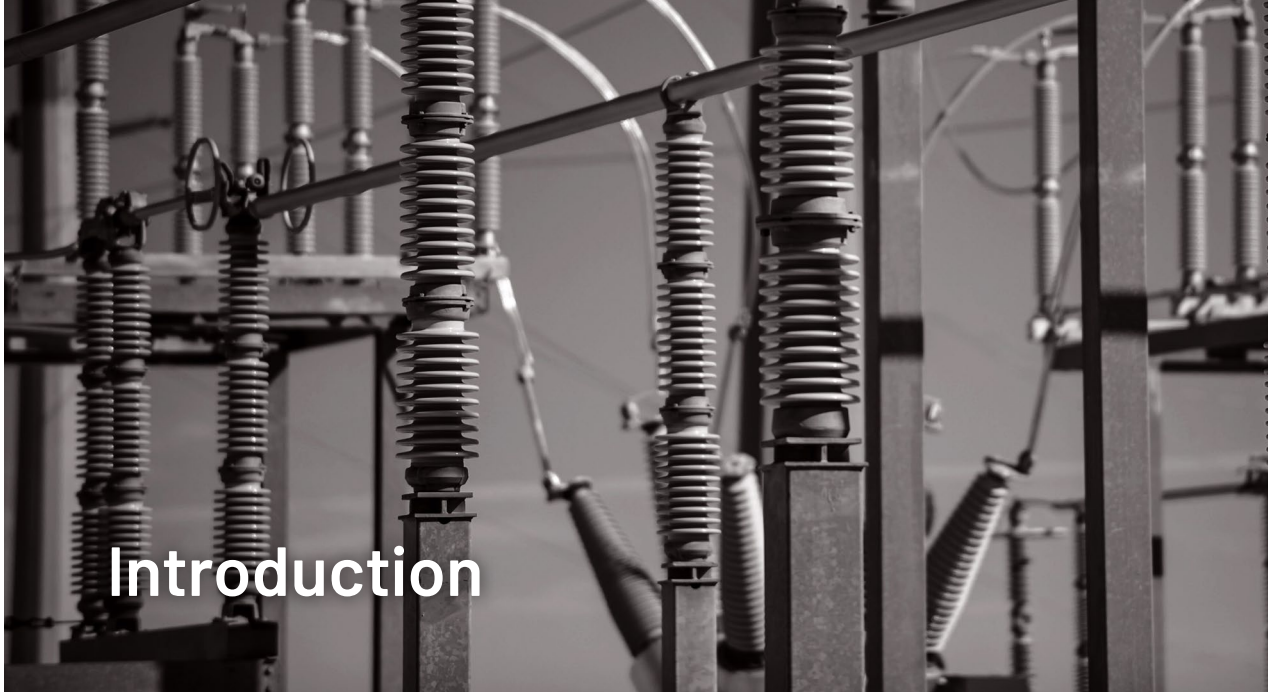


Introduction

What are the NECPs?

In 2018, in order to allow the EU to fulfill the long-term climate strategy in line with commitments made under the Paris Agreement, the block adopted the revised Governance Regulation. The Governance Regulation is the 'umbrella' piece of legislation which is intended to ensure that the EU's 2030 energy and climate targets are achieved. It defines how Member States will collaborate, both with each other and with the Commission to reach the EU's renewable energy and energy efficiency targets, as well as the EU's long-term greenhouse gas emissions goals. It also sets out control mechanisms that will help ensure that the targets are met, and that the range of actions proposed constitute a coherent and coordinated approach. One of the key tools in the Governance Regulation are the National Energy and Climate Plans (NECPs), in which each Member State has to describe, in an integrated manner, its climate and energy objectives, targets, policies and measures for the period from 2021 to 2030, ensuring that the Union's 2030 targets for greenhouse gas emission reductions, renewable energy and energy savings will be met and in line with the EU climate commitments.

Draft NECPs had to be submitted to the European Commission by 31st December 2018. All Member States have now submitted their drafts and these are currently being assessed by the Commission. If an individual

country's draft NECP and its objectives, policies and measures do not sufficiently contribute to reaching the energy union's objectives - or if the EU collectively does not make sufficient progress towards these objectives - the Commission will issue recommendations to countries to amend their draft NECP. Recommendations are to be issued by 30 June 2019. Member States have until the end of 2019 to submit their final NECP, taking into account the Commission's recommendations.

In order to fulfill the commitments made under the Paris Agreement and reach net zero greenhouse gas emissions by 2050 at the latest, it is essential for the EU to phase out coal and transition towards a renewables-based energy system. This briefing presents the outlook for coal power to 2030 - both at the individual Member State level and the EU as a whole - according to an analysis of the submitted draft NECPs. We rank the progress of each Member State on coal power and explain why it is imperative that Member States include plans to phase out coal-fired electricity generation in their NECPs.

A credible NECP requires a plan for coal.

In 2018, Europe's coal plants released a total of 625 million tonnes of CO2.[1] This accounts for nearly 15%[2] of the EU's total greenhouse gas emissions, a slice nearly as big as that of the entire EU road transport sector (~21%).[3]

The European coal fleet is inefficient, old and dirty. A single coal power station produces enough CO2 to matter at a national level. Closing coal power plants would make a significant contribution to reducing emissions and protecting the climate. While some countries already have coal phase out plans, many

1. Source: EUTL database. More information can be found on Sandbag's website: https://sandbag.org.uk/project/ets-emissions-2018/

2. Based on total EU emissions of 4317 MT in 2017 (excl. international aviation) https://www.eea.europa.eu/publications/approximated-eu-ghg-inventory-proxy

3. Based on total EU emissions of 4317 MT in 2017 (excl. international aviation). Road transport accounts for 82% of EU transport GHG emissions. EU 2017 transport GHG emissions (1096MT) from table 1 of *Progress of EU transport sector towards its environment and climate* objectives https://www.eea.europa.eu/themes/transport/term/term-briefing-2018

still do not.

Member States should use the process of developing their NECPs as an opportunity to outline a credible path consistent with achieving a net-zero carbon economy by 2050. A timely and ambitious coal phase out is a crucial element of this path.

Timely planning for this inevitable energy transition brings a number of benefits, namely:

- A framework that enables public funding to support the energy transformation and the just transition i.e. through the new EU budget for 2021-2027.
- Increased investor certainty, helping to scale up the required investments in sustainable renewables, energy efficiency, energy storage and demand side response measures.
- Predictability for the coal utilities, giving them time to plan for coal closures and develop new business models.
- Sufficient time for proactive measures to support affected communities who are currently dependent on the coal industry, to ensure that no one is left behind.

Analysis and ranking

What do the draft NECPs say on coal power?

In the EU, **7** Members States are already coal free, however, there are still **21** EU Member States that use coal for electricity generation. We have analysed each of the 21 draft NECPs and collected all relevant data and statements regarding their proposals for coal-fired electricity generation. The analysis was completed in March 2019 through a combination of desk-based research and collating written feedback from our network of partner organisations working on coal.

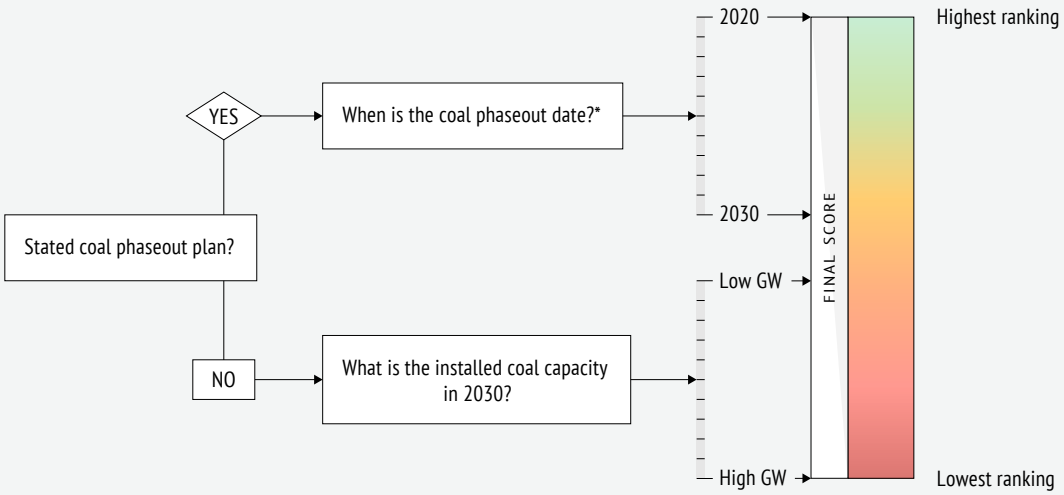
In this section we rank each of the 21 Member States on the coal component of their draft NECP and draw conclusions on what this would mean for coal-fired electricity generation in Europe in 2030.

We have ranked each Member State taking into consideration three core metrics:

1. Is there a stated plan to phase-out coal over the NECP period?
2. If there is a coal phase-out plan, when is this achieved?
3. If there is no coal phase-out plan, what is the planned installed coal capacity in 2030?

Under these criteria, Member States with clearly stated and ambitious plans to phase-out coal over the NECP period (2021-2030) ranked the highest, conversely Member States with no plans to phase-out coal over the same period and large installed coal capacities in 2030 ranked the lowest.

Figure 2: Schematic of the ranking process



** Member states with the same phaseout date are ranked by the scale of required transformation - measured by the percentage contribution coal made to electricity generation in 2018. The higher the percentage, the higher the ranking.*

For more detailed information on the methodology and why we chose these specific metrics, please refer to the annex.

NECP coal ranking of the 21 Member States still using coal

Rank	Country	Stated plan to phase out coal over the NECP?	NECP phaseout date	2019 installed coal capacity [Net GW]*	NECP 2030 installed coal capacity [net GW]**
1	France	✓	2022	3.0	0.0
2	Ireland	✓	2025	0.9	0.0
3	Italy	✓	2025	8.1	0.0
4	Netherlands	✓	2029	4.8	0.0
5	Finland	✓	2029	2.0	0.0
6	Portugal	✓	2030	1.9	0.0
7	Denmark	✓	2030	2.6	0.0
8	Austria	✓	Vague	0.6	0.0
9	UK	×	–	11.6	0.0
10	Sweden	×	–	0.1	0.0
11	Spain	×	–	9.4	0-1.2***
12	Hungary	×	–	1.0	0.2
13	Croatia	×	–	0.3	0.2
14	Slovakia	×	–	0.6	0.6
15	Slovenia	×	–	1.0	1.0
16	Greece	×	–	4.1	2.7
17	Romania	×	–	5.5	3.2
18	Bulgaria	×	–	4.7	4.7
19	Czechia	×	–	9.2	7.2
20	Germany	×	–	44.4	17.0
21	Poland	×	–	26.9	22.9

[Descriptions overleaf]

N.B: Belgium, Cyprus, Estonia, Latvia, Lithuania, Luxembourg and Malta are coal-free, with no coal power plants and no plans to build any, and are therefore excluded from the coal ranking.

Ranking descriptions

*2019 installed capacity is sourced from the latest (11.03.19) version of the Europe Beyond Coal database - https://beyond-coal.eu/data/. Installed capacity is the sum of all units marked as "open" under the category "unit status (gross)", this includes plants which are marked as open in the database but sub-categorised as on standby or deactivated (BG - 0.5GW, CZ - 0.3GW, DE - 4.3GW, DK - 1.1GW, IT - 0.6 GW, HR - 0.1 GW, HU - 0.2GW, PL - 0.8GW, RO - 1.1GW). The figures in the database are provided as gross MW, a gross to net conversion factor of 92% is applied for units that commenced operation pre-1980, 94% for all other units. In Czechia the current installed capacity figures include "Ledvice III NZ 660 Mwe" - which is marked as "construction" in the database, and officially in "test phase" but already running at high load.

** Data on planned installed coal capacity in 2030, was unavailable in the draft NECPs for seven Member States: Bulgaria, Czechia, Germany, Hungary, Slovakia, Slovenia & Sweden. The section below below explains how we used other information in each of these Member State's NECP to arrive at the figures in this table.

*** Spain's coal capacity is provided as a range in the NECP for 2030 - we have used the lower end of the range for the ranking.

2030 installed coal capacity assumptions

Data on planned installed coal capacity in 2030, was unavailable for seven Member States: Bulgaria, Czechia, Germany, Hungary, Slovakia, Slovenia & Sweden. We used the following methodology to forecast 2030 installed coal capacity.

Czechia, Hungary[4]: the draft NECPs contain a forecast for net electricity generation from coal (TWh) in 2030. We used the ratio of 2030 vs. 2018[5] electricity generation from coal and applied this to the current (March 2019) installed coal capacity to forecast installed coal capacity in 2030. (N.b this assumes load factor across the remaining fleet remains constant).

Germany: the draft NECP references "The drawing up of an Action Programme [....] for ending coal-fired electricity step-by-step [...] by the Commission on 'Growth, Structural Change and Employment'". The recommendations of this Commission are now available and are the source of Germany's 2030 installed coal capacity figures in our analysis.

Bulgaria, Slovakia, Slovenia: with no indication of any plans to reduce coal use in power generation, 2030 installed capacity was set equal to the current (March 2019) installed coal capacity.

Sweden: the draft NECP does not explicitly mention coal power but Sweden's one small plant (<150MW) is due to close in 2022. Therefore we have set 2030 installed coal capacity equal to zero.

4. In Hungary's draft NECP, the electricity generation from coal must be estimated from a chart (*Figure 31 - Forecasts of electricity production and net electricity imports for existing policies measures*). We have estimated a figure of 0.9 TWh in the analysis.

5. Hungary 2018 electricity generation from coal figures are taken from Sandbag's *State of the Europen Power Sector in 2018*: https://sandbag.org.uk/project/power-2018/. In Czechia 2018 official data for electricity generation from coal is available here: https://www.eru.cz/zpravy-o-provozu-elektrizacni-soustavy#2018

Comment on the rankings

The draft NECPs of eight Member States (Austria, Denmark, Finland, France, Ireland, Italy, Netherlands, Portugal) have explicit commitments to end coal-fired electricity generation across the NECP period (2021-2030) and score highly. Austria's ranking could be considerably improved had the coal phase-out date been clear and driven by policy rather than by industry.[6]

Two additional Member States (Sweden & United Kingdom) are expected to phase-out coal over the period. However the lack of an explicit commitment to do so in the draft NECP prevents these Member States from ranking higher.

Spain and Hungary rank in the middle of the pack because neither are committing to a coal phase-out but both draft NECPs suggest a greatly reduced role for coal by 2030. In Hungary this is pursuant on the commissioning of two new nuclear power plant units. In Spain, the draft NECP assumes that coal is mostly removed from the electricity system by 2030, but this relies on market dynamics (including high CO2 prices and required pollution abatement investment) to drive the coal phase out, and authorities will only interfere if the coal phase out is slow enough to pose a compliance risk for decarbonisation targets.

Three Member States (Croatia, Slovakia, Slovenia) make no commitments to reduce coal-fired electricity generation across the NECP period, but each only has a small coal capacity and therefore they rank near the middle of the pack. Notably, promising statements[7] regarding coal phase out from the Slovak environment minister have not been included in the draft NECP.

The bottom of the ranking is comprised of six Member States (Bulgaria, Czechia, Germany, Greece, Romania and Poland), each expects to have a

6. The relevant text in the draft NECP is as follows: *"Austria has set itself the objective of promoting a rapid phase-out of coal. Austria's energy supply companies are already planning to phase out of coal-to-electricity conversion in the next few years. It is important to further accelerate the process of phasing out electricity generation from coal in Austria."*

7. At the One Planet summit in December 2017 in Paris, Environment Minister László Sólymos declared 2023 as the target year for Slovakia's coal phase-out in both the mining and power sectors. https://www.euractiv.com/section/energy/news/slovakia-discusses-coal-phase-out-in-2023-sefcovic-eyes-geothermal-energy/

large (> 1 GW) installed coal fleet in 2030 and, with the exception of Germany, all show little or no reduction in coal capacity over the NECP period.

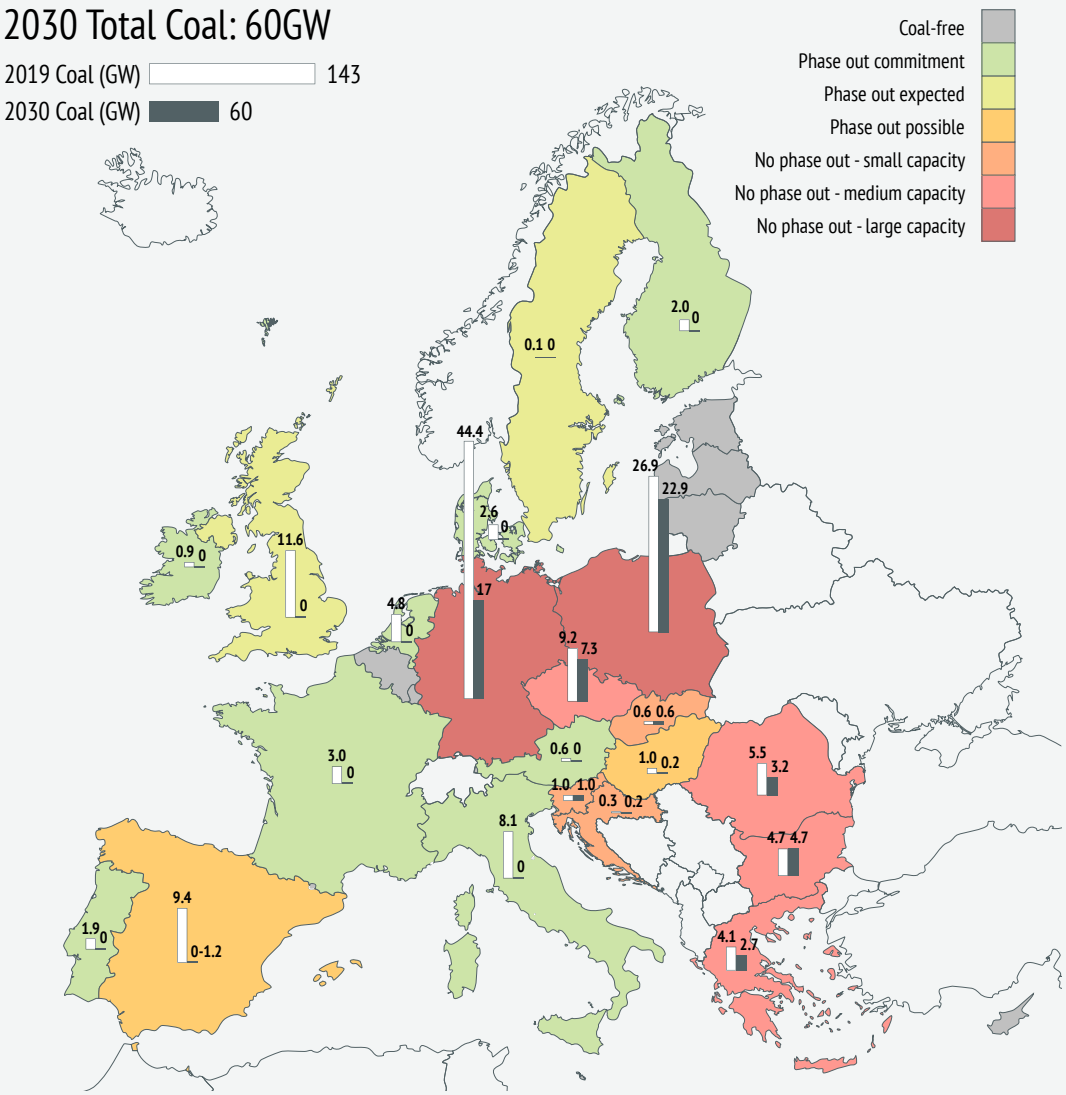
Unassessed criteria

It is important to note that our ranking does not include an assessment of non-coal power generating capacity. There are however concerns that some coal phase out plans will rely on an increase in unsustainable biomass burning (Denmark, Finland, Ireland, Netherlands, UK, France) or lock-in new large scale gas infrastructure (Ireland, Italy, UK).

We have also not included in the ranking whether Member States have the required policies in place to achieve the coal reductions (if any) stated in their draft NECPs. This is a concern in a number of Member States , eg. the current French national law proposal does not ensure that France will phase-out coal by 2022.

What does this mean for EU coal in 2030?

Figure 3: EU net coal power capacity in 2019 and the projection for 2030 according to the draft NECPs.

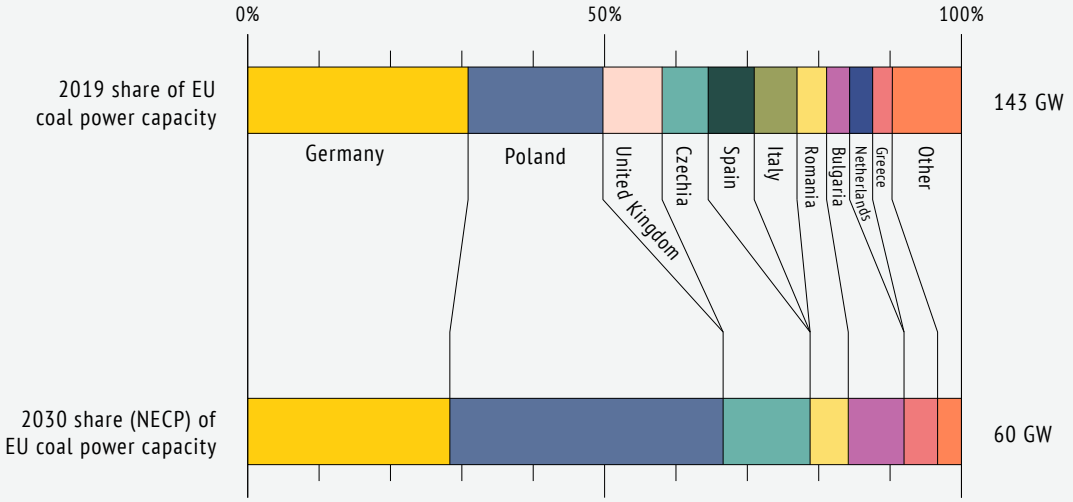


According to the draft NECPs, there would still be **60 GW** of installed coal capacity in the EU in 2030 (see Figure 3 for more detail). This is a fall of 58% vs. the current levels (143GW).

Under the least-cost pathways, to fulfill the Paris Agreement and limit the global temperature rise to 1.5°C, EU countries need to stop burning coal for electricity by 2030.[8] The draft NECPs indicate that the EU is currently on course to miss this goal by a wide margin.

Planned reductions in coal capacity are unevenly spread across Europe. The vast majority of the 60GW remaining in 2030 is located in just 6 Member States: Bulgaria, Czechia, Germany, Greece, Romania & Poland (see Figure 4), while coal power stations are expected to almost completely disappear from Western Europe.

Figure 4: Member State share of the total coal power capacity in 2019 and the projection for 2030 according to the draft NECP.



8. Climate Analytics: *Implications of the Paris Agreement for coal use in the power sector.* The referenced scenario has a more than 50% chance of remaining below 1.5°C by 2100. https://climateanalytics.org/media/climateanalytics-coalreport_nov2016_1.pdf

EU support for the transition

Receiving support for the just & energy transition – Yes!
Committing to the transition – No!

Recognising the challenge Member States would face in moving away from coal, at the end of 2017, the European Commission launched the Coal Regions in Transition Platform. The aim of the Platform is: *to assist Member States and regions in their efforts to modernise their economies and prepare them to deal with the structural and technological transition in coal regions*.[9]

Member States with regions that have joined the platform so far are: Czechia, Germany, Greece, Poland, Romania, Slovakia, Slovenia and Spain. Altogether 20 regions in 8 Member States are currently part of the platform.

Coal regions that are part of the platform benefit from direct support and tailor-made assistance to ensure they can maximise the use of EU funds and support tools available in the process of transition.[10] For example: regions in Greece and Slovakia are receiving technical assistance from the

9. https://ec.europa.eu/info/news/no-region-left-behind-launch-platform-coal-regions-transition-2017-dec-08_en

10. https://ec.europa.eu/info/news/coal-regions-transition-no-region-and-no-citizen-left-behind-2018-dec-11_en

European Commission Structural Reform Support Service to develop long-term transition strategies. In Poland, Czechia and Germany, coal regions are benefiting from Commission guidance to develop and finance identified priority projects with the use of existing EU funds.[11]

Furthermore, a number of pilot projects are already underway, with the first projects (in Poland and Slovakia) obtaining financing.[12]

Member States are receiving support despite the fact that most - namely Czechia, Greece, Poland, Romania,[13] Slovakia and Slovenia, show little or no intent to decrease their coal capacity by 2030 in their NECPs (see Figure 5). Czechia, Poland, Romania, Slovakia and Slovenia also fail to include any plans or measures for the just transition in their respective NECPs.

Moreover under the EU ETS, lower income Member States such as: Bulgaria, Croatia, Czechia, Hungary, Poland, Romania and Slovakia can use the newly established Modernisation Fund for investments to modernise and diversify their energy systems and also to fund the Just Transition.

While the above mentioned countries (with the exception of Hungary) do not plan a significant transition away from coal in their NECPs, together they will still be able to obtain in the region of 26 billion euros[14] through the Modernisation Fund across the NECP period (2021-2030).

11. https://ec.europa.eu/clima/sites/clima/files/docs/pages/initiative_5_support_en_1.pdf

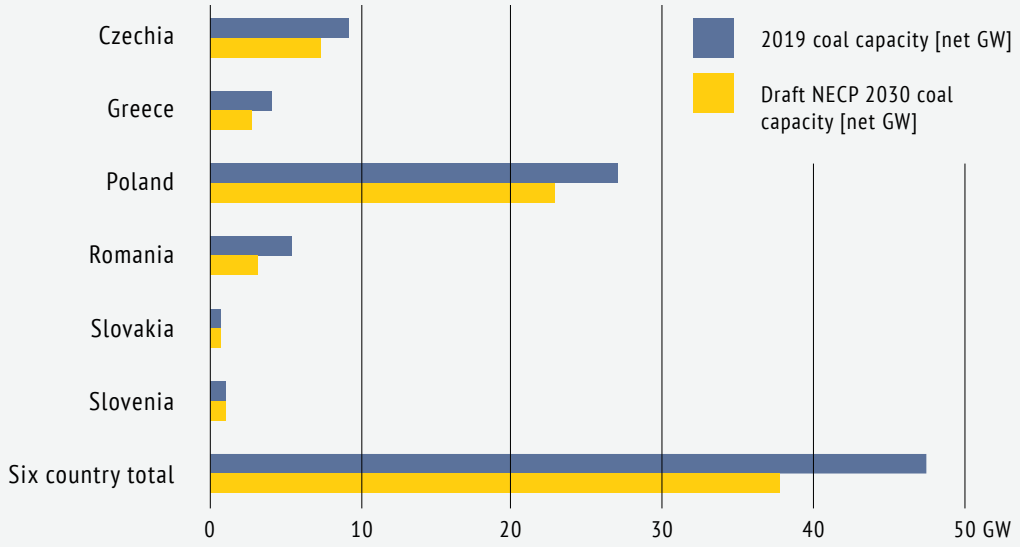
12. Coal Regions in Transition meeting on 8-9.04.2019. The process for selecting these projects has lacked transparency and no apparent verification of their contribution to an actual clean and just energy transition has taken place. https://webcast.ec.europa.eu/coal-regions-platform-meeting-08-04-2019-part1https://webcast.ec.europa.eu/coal-regions-platform-meeting-08-04-2019-part1

13. While nominal coal reductions in Romania are not insignificant, the majority of the coal closures anticipated occur before 2020 and would be closures of units that have not functioned for years, lacking permits and being insolvent. Romania's draft NECP indicates only 500MW of coal closure over the NECP period (2021-2030). More detail can be found: https://bankwatch.org/press_release/romanias-dodgy-math-coal

14. Sandbag calculations: 7 MS (Bulgaria, Croatia, Czechia, Hungary, Poland, Romania and Slovakia) total of 963m Modernisation Fund allowances at 27 EUR/tonne. Key assumptions: 51.7% emissions reductions by 2030 (Sandbag base case); auction share 57% first half, 52% second half; no carry over of unused article 10cs from Ph3; 40% derogation from 10(2)(a) to 10c for just under 2/3rds of the MSs under focus; transfers of full 40% 10c derogation from 10(2)(a) to 10d for just under half and 50% transfer from 10(2)(b) "solidarity" to 10d for the same proportion of MSs; no transfer from 10(2)(b) "solidarity" to 10c.

The effort to reduce reliance on coal needs to be evident within the NECPs. This should be a clear condition for receiving additional support and funds for a just energy transition, in particular those channelled via the Coal Regions in Transition Platform.

Figure 5: Installed coal power capacity in 2019 and the projection for 2030 according to the draft NECP for 6 selected Member States on the Coal Regions in Transition platform



Will EU energy transition funding dry up for Member States without a plan to move on from coal?

While a final agreement on the overall EU budget has not yet been made, it is clear that a large part of it - the Cohesion Policy for 2021-2027 - could channel significant financial resources to less developed and coal-dependent regions.

However, for the Member States to use these funds to enable a just transition in the coal regions, political priorities and objectives in this regard have to be set. These objectives then need to be included in the EU funds strategic planning process called "programming". Member States should base their programming of the EU funds on their climate and energy strategy and planning documents.

Cohesion Policy programming and NECP drafting processes are currently happening in parallel. There is a clear opportunity to establish a concrete link between them. Member States need to proactively consider now their needs relating to energy system transformation and just transition over the next decade and include them in their NECPs - to ensure that ambitious transition objectives can be matched with ambitious funding.

Without clearly stated objectives, including efforts to significantly reduce reliance on coal power - made evident in the NECPs, there is a risk that Member States will not programme sufficient funds from the Cohesion Policy to provide for the just transition. On the other hand, ambitious commitments and clear 'just transition' strategies developed in the framework of future EU funding can provide the means to design and implement NECPs which will fully catalyse the just energy transition.

This process should go hand in hand with a national assessment of the investments needs, based on a long-term decarbonisation pathway, to

identify the respective national potentials for emissions reductions with a focus on the 2030 timeframe. National planners must essentially already complete this task under the Governance Regulation, which calls for Member States to prepare 2050 strategies and chart their energy and climate policy options to meet GHG reduction obligations and set national energy targets for 2030.

Costs of keeping coal

Member States that fail to plan significant reductions in coal capacity in their NECPs will perpetuate the huge health, economic and climate damage caused by electricity generation from coal.

Health: recent research[15] calculated that air pollution from coal power stations in Bulgaria, Czechia, Poland, Romania, Greece, Slovakia & Slovenia, causes an estimated 5,460 premature deaths and almost 105,000 asthma attacks in children every year, costing society up to ~ €16 billion annually.

Carbon: coal is the most carbon-intensive form of electricity generation. Carbon prices in the EU's Emissions Trading Scheme (ETS) have been rising sharply over recent months, it now costs over 27 EUR to emit a tonne of carbon dioxide - a 5x increase in just two years - making generating electricity from coal significantly more expensive than in recent years. Carbon prices are expected to remain strong over the course of the NECP period[16] - although still insufficient to achieve the Paris temperature target.[17] Table 1 sets out the total annual carbon costs incurred by coal power station operators in selected Member States with the ETS price at 27 EUR/tonne.

15. Last Gasp. *The coal companies making Europe sick*. The stated figures can be found in the excel data download accompanying the report. https://sandbag.org.uk/project/lastgasp/

16. April 10, 2019 *Carbon Pulse* poll of analysts - median expected price for phase 4 = 25 EUR.

17. *Report of the High Level Commission on Carbon Pricing* concludes that the explicit carbon-price level consistent with achieving the Paris temperature target is at least US$40–80/tCO2 by 2020 and US$50–100/tCO2 by 2030, provided a supportive policy environment is in place.
https://www.carbonpricingleadership.org/report-of-the-highlevel-commission-on-carbon-prices

Table 1: Total annual carbon costs for coal power station operators in selected Member States at 27 EUR/tonne

Member State	Emissions from coal-fired electricity generation 2018 [Mt][18]	Annual Carbon Costs at 27 EUR/tonne [EUR Million]*
Bulgaria	25	675
Czech Republic	46	1,242
Greece	24	648
Poland	128	3,456
Romania	16	432
Slovakia	3	81
Slovenia	5	135

**Excludes the impact of hedging behaviour or any free allocation.*

While carbon costs rise, the price of renewables continues to fall. It will be cheaper to build new renewables than operate existing coal capacity in every EU Member State by 2020[19] - an outcome that is already a reality in the United States.[20] Therefore, Member States that plan to stick with coal - with some of the poorest Member States amongst them - are likely to burden their citizens with unnecessarily high electricity prices.

Notes

- This analysis is based on information and data included in the draft NECPs that are publicly accessible on the European Commission's website.[21]

- The analysis was concluded by the end of April 2019. Any developments after that date have not been taken into account.

18. EUTL database and Sandbag calculations, further details can be found: https://sandbag.org.uk/project/ets-emissions-2018/

19. *Powering down coal: Navigating the economic and financial risks in the last years of coal power.* Dates are sourced from the *"when will renewables be cheaper than coal?"* interactive portal. https://www.carbontracker.org/reports/coal-portal/

20. *The Coal Cost Crossover: Economic Viability Of Existing Coal Compared To New Local Wind And Solar Resources* https://energyinnovation.org/publication/the-coal-cost-crossover/

21. https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/governance-energy-union/national-energy-climate-plans

Annex I

Methodology

Overview of the ranking methodology

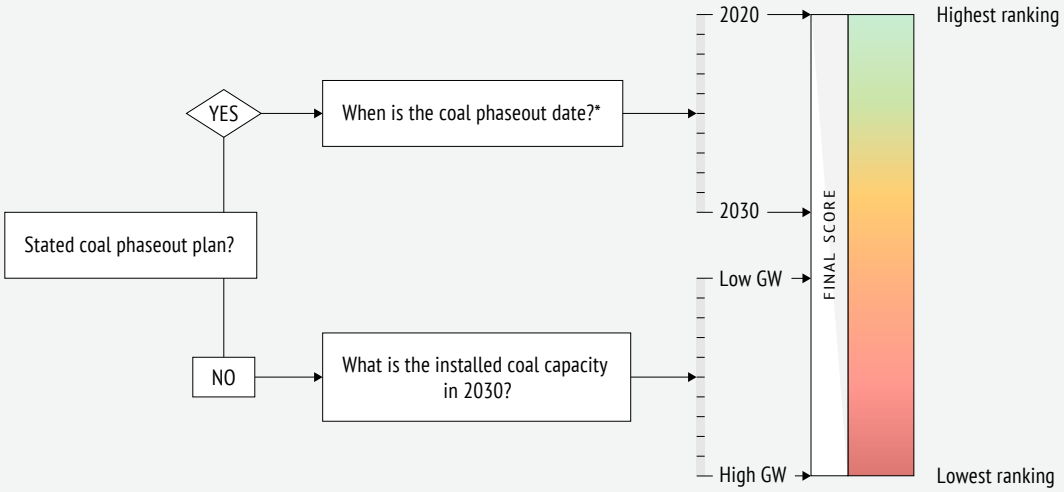
There is a large variation in the quality and quantity of the data provided on coal power in the draft NECPs. Therefore, one of the main challenges we faced was finding a consistent data-set on which to rank each Member State. After balancing the demands of consistency and suitability of each data-set in the draft NECPs, we have ranked each Member State on the following metrics:

1. **Phase-out plan:** is there a stated plan to phase-out coal over the NECP period?
2. **Phase-out date:** if there is a coal phase-out plan, when is this achieved?
3. **Coal largesse**: if there is no coal phase-out plan, what is the planned installed coal capacity in 2030?

Under these criteria, Member States with clearly stated and ambitious plans to phase-out coal over the NECP period (2021-2030) ranked the highest, conversely Member States with no plans to phase-out coal over the same period and large installed coal capacities in 2030 ranked the lowest.

A schematic of the ranking process is shown overleaf in Figure 6.

Figure 6: Coal ranking schematic



** Member states with the same phaseout date are ranked by the scale of required transformation - measured by the percentage contribution coal made to electricity generation in 2018. The higher the percentage, the higher the ranking.*

While planned electricity generation from coal (TWh) in 2030 (a measure of total CO2) or the expected percentage share of coal in the electricity mix (a measure of coal reliance) would arguably have been better metrics to rank the draft NECPs of the non phase-out countries, the draft NECPs do not contain enough data for a consistent measurement on either.

One Member State (Poland) explicitly states plans to build new coal power stations, however we decided not to assign any weight to this in the ranking - we deemed the metric unreliable as a point of comparison. Other Member States (Greece & Romania) have national plans to build additional coal power plants but have chosen not to disclose this in their NECPs - in Greece's case a plant is already under construction.