

Capacity payments:

The final ingredient to supercharge coal

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There is a long list of policy gaps that favour coal; a low carbon price is just the tip of the iceberg.

More urgent interventions would be needed to address these gaps, if coal plants get capacity payments.

The proposed “550” legislation has become one of the more contentious parts of the EC’s Clean Energy Package. A 550gCO₂/kWh limit would ensure high carbon intensity power plants don’t get capacity payments, enabling deployment of less polluting and more efficient technologies. We are most concerned by impact of capacity payments on Europe’s 256 operational coal plants, which all have a carbon intensity greater than 550g/kWh.

On Wednesday 21st February 2018, ITRE will vote on this legislation. Voting for Compromise Amendment 22A, in the Market Design file, would stop the dirtiest plants getting capacity payments. Without this, coal plants would get supercharged, and require urgent interventions to correct existing policy gaps.

Sandbag has far written two papers to inform the proposed “550” legislation. The first paper outlines the 7 reasons why “550” legislation is needed¹. The second paper highlights the frightening scenario where it is not approved, and capacity payments pay to extend the design life of coal plants from 40 years to 60 years, so they can stay open into the 2040’s; this scenario was summarised from a key paper commissioned – ironically – to argue *against* the 550 legislation².

In this briefing we analyse the impact of “550” legislation on policy interventions.

In Section 1 we analyse general EU policies impacting coal; in Section 2 we analyse policies specifically needed to implement a capacity market.



¹ See <https://sandbag.org.uk/project/carbon-intensity-threshold-needed-capacity-payments/>

² See <https://sandbag.org.uk/2017/09/25/eurelectric-lets-copy-paste-polands-coal-strategy-across-europe/>

1. How do EU policy failures give coal an easy ride?

The European Commission is making it harder on coal by trying to legislate on its negative impacts. But even with the best of intentions, coal plants find ways to get around them. ***The current set of climate policies has significant loopholes for coal, which the 550 limit would help to tighten.***

Here is a list of policy gaps that would get more exposed without “550” legislation:

Reason for “550”	EU policy gap
Badly designed capacity payments are fossil fuel subsidies.	Despite a G7 pledge to phase-out fossil fuel subsidies ³ , there is no explicit EU policy to prevent fossil fuel subsidies.
There might not be enough safeguards to prevent capacity markets set up to subsidise coal.	Some of the proposals in the EU Clean Energy Package’s Market Design file may not get accepted – specifically country adequacy assessments, making CM temporary, and adding flexibility requirements to the CM.
Air pollution from coal plants contributed to 19,500 premature deaths in 2015 ⁴ .	New air pollution limits will be implemented in 2021 under “BREF” legislation. This legislation was implemented 3 years late, and was watered down ⁵ ; what’s more, countries are now applying for derogations to BREF.
Many coal plants are still not impacted by renewables, so still have a high utilisation.	The 2020 EU renewables targets were unambitious for many countries; wind and solar penetration in Slovenia, Bulgaria, Slovakia, Czech Republic and Hungary is still below 10% ⁶ . The 2030 renewables target does not yet even plan country targets.
Mining cross-subsidies make coal prices cheaper.	Poland and Spain are still finding loopholes in EU state aid rules to benefit coal plants.
Biomass co-firing subsidises coal	Despite recent tightening of EU biomass legislation, it is still possible to co-fire biomass with coal, which cross-subsidises coal power plants.
The European Investment Bank (EIB) is indirectly funding coal.	Although the EIB actually has its own “550” rule that should ban coal investment, 4 of the largest Polish coal companies – PGE, ENEA, Energa and Tauron – have received EIB money. This money is not meant for coal projects, but it’s impossible to prove it is not cross-subsidising their coal assets.
A low carbon price benefits coal. In 2017, coal plants emitted 38% of all CO2 emissions in the EU ETS, or 15% of the EU’s total GHG emissions ⁷ .	The EU ETS reform process last year has helped raise prices to close to €10/tonne. However, the ETS reforms were far from perfect. The price is not guaranteed to rise further; nor is it guaranteed even to collapse back further.
ETS funds support coal.	Coal plants this decade were given billions of Euros in carbon permits to invest to stay open even longer, rather than fund new, modernising capacity. Next decade, the EU ETS reforms have tried to restrict these allocations under “Article 10C”, but it is far from guaranteed that coal would not benefit.

³ See <https://www.theguardian.com/environment/2016/may/27/g7-nations-pledge-to-end-fossil-fuel-subsidies-by-2025>

⁴ See <https://beyond-coal.eu/data/>

⁵ See <https://sandbag.org.uk/project/lifting-europes-dark-cloud-how-cutting-coal-saves-lives/>

⁶ See figure 12 of <https://sandbag.org.uk/project/european-energy-transition-power-sector-2017/>

⁷ See figure 33 of <https://sandbag.org.uk/project/european-energy-transition-power-sector-2017/>

2. Capacity Markets need careful interventions to avoid favouring coal

It is *simply impossible* to design a capacity market that exactly puts existing coal on a level playing field with modernising new-build capacity like batteries, demand-side response (DSR), small peaking gas and interconnectors. ***Details of market design policy become much more critical to ensure coal is not kept open sub-optimally; passing “550” legislation would reduce this risk.***

Here are 5 key reasons why capacity market design risks favouring coal:

- **Capacity markets have so far been designed with large generators in mind; ill-thought design features risks blocking out entire technologies.** For example, minimum availability duration may mean battery couldn't qualify, or insufficient aggregation rules may mean small generators couldn't qualify.
- **Batteries, DSR and small peaking plants must be able to compete in balancing and ancillary markets on a level playing field with large generators, also coal will crowd them out of the capacity market.** Due to the high flexibility of batteries, DSR and small peaking plants, much of their revenue stream is from balancing and ancillary markets – perhaps even more than the capacity market itself. Getting these markets wrong means coal will stay open longer.
- **New and existing capacity competing in the same auction is sub-optimal.** A 15-year contract and a 1-year contract are completely different products, and should not be forced into the same auction with the same clearing price. This same auction creates a higher cost for the consumer: 1-year coal contracts would prop up the clearing price for years, whereas a slightly higher-priced 15-year new-build contract would mean subsequent auction prices would be much lower because that would crowd out existing capacity. Passing “550” legislation would reduce the need to do split the auctions.
- **Multi-year capacity contracts for coal.** Both the UK and Polish capacity markets allow coal to bid for 3-year contracts if they refurbish. This means not only that coal crowds out new capacity for the following 2 years, but also that this will encourage investment into coal plants which would keep them open longer in subsequent years. This is a particularly acute risk because these contracts are likely to fund investment into old coal plants to meet tightening air pollution limits, where otherwise these old coal plants would have closed.
- **Procuring capacity 4 years ahead of need.** Batteries, DSR and small gas peaking plants have a short lead time for deployment of 6-12 months; so if they are bidding 4 years ahead of time - like in the UK and Poland – the fast-falling costs of these technologies cannot be harnessed. In a similar vein, coal plants will bid based on CO2 price 4 years ahead, so if the ETS reforms are expected to raise prices by 2025, then this higher carbon price would only impact coal from 2029.

3. Conclusion

Extending old coal plants risks blocking investment into renewables and other replacement capacity. Without “550” legislation, many more complicated interventions would be needed in order to make sure capacity contracts do not extend the lifetimes of old coal plants

Clean, modern, reliable capacity is already cheaper than extending old coal plants. Since the first UK capacity auction in 2014, the capacity of the UK’s 5 remaining 7 coal plants has been replaced, all without the carbon lock-in or expense of building new large gas plants. In the latest auction in February 2018, 2 coal plants were replaced with a combination of capacity from interconnectors, battery (364MW of projects) and small peaking gas plants (328MW), with an amazingly low clearing price of around €9/KW. (This is despite changes in rule changes in 2018 which stopped generous benefits to small generators, and also ensured batteries only got the full capacity payment if they discharge at full over 4 hours or more.)

Coal would still have a role to play in keeping the lights on after “550” legislation comes into effect: for instance, in the UK capacity market, capacity not bidding into the auction is deducted from the requirement, so the system operator does not procure more capacity than is needed for the plant that is there. In this way, coal still gets paid revenues from the 3 existing markets (wholesale electricity, balancing and ancillary markets), but not from the capacity market.

Ironically, a major reason capacity markets are set up because old coal plants need to be replaced, and their sudden closure would risk the lights going out. Far better then, to mandate a closure date – like in the UK – to give certainty to the new investment needed to replace these old coal plants.

Eventually all the coal plants will need to close as the transition progresses. Capacity payments to coal plants would only crowd out clean, modernising, new-build capacity needed to replace coal.

About this briefing

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Sandbag is a London and Brussels-based not-for-profit think tank conducting research and campaigning for cost-effective climate policies. Our research focus includes reforming the EU Emissions Trading System and the Effort Sharing Decision; accelerating the phase-out of old coal in Europe; and deep decarbonisation of industry through technologies including Carbon Capture & Storage. For more information, visit www.sandbag.org.uk email us at info@sandbag.org.uk, or phone us on (+44) 020 3876 6451.

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