



Czech Republic

France

Germany

Greece

Hungary

Italy

Netherlands

Poland

Spain

United Kingdom

Cutting Europe's lifelines to coal

Tracking subsidies in 10 countries

Laurie van der Burg

United Kingdom

Key findings

Transparency – subsidy reporting

Rating: very poor

- The UK does not publish an overview of country's coal subsidies
- The British government has stated that it will not undertake a fossil fuel subsidy peer review under the G20 process, as it actively denies that the country provides any fossil fuel subsidies.

Coal mining – subsidy phase out

Rating: poor

- The UK mining sector enjoys various tax benefits, including the mineral extraction allowance and the deduction of capital expenditures connected to the abandonment of fields and mines.

Coal fired power – subsidy phase out

Rating: poor

- The UK has introduced new types of subsidies for power generation over the last few years, with the stated objective of ensuring security of electricity supply – including to coal-fired power stations. This undermines the carbon floor price that is meant to increase the price of high-carbon power.
- The UK has committed to phasing out coal-fired power by 2025.

1. Trends in the production and use of coal in the United Kingdom

Coal has deep historical roots in the UK. Powering steam engines, it played a central role in the UK's historical Industrial Revolution, which began in the late 1700s. However, the serious health implications of coal-fired power and heating became apparent during the great London Smog of 1952. In response, the government enacted the Clean Air Act in 1956, the year in which the use of coal in the UK peaked. Since then, environmental regulations and competition from other energy sources have been the main driver of coal's long-term decline in the UK. The last deep coal mine in the country closed at the end of 2015 (Littlecott, 2015). A few surface mines remain in operation.

After a small revival in the use of coal in power generation between 2011 and 2013, driven by higher gas prices and US coal exports that pushed down coal prices, coal-fired power generation has declined. This stems from a combination of low renewable energy electricity prices and, importantly, 'the carbon price support'. This support came into effect in 2013, putting a price on fossil fuel-fired electricity, and doubled to £18/tonne CO₂ in 2015 (Delebarre, 2016). It makes gas cheaper than coal, with the result that coal plants do not run base load and instead only operate when needed on top of gas-fired electricity generation (Jones, 2016a). Thanks to a drop in the use of coal in electricity generation, CO₂ emissions from coal-fired power significantly reduced by 82% between 2012 and 2016. This led to an 18% reduction in total UK CO₂ emissions over just four years (Sandbag, 2016a).

In 2015, the UK was the first country to commit to phasing out coal-fired power by 2025 (Littlecott, 2016). Upon announcing the decision, the Secretary of State for Energy and Climate Change Amber Rudd said: 'It cannot be satisfactory for an advanced economy like the UK to be relying on polluting, carbon intensive 50-year-old-coal-fired power stations. Let me be clear: this is not the future. We need to build a new energy infrastructure, fit for the 21st century.' In 2016, approximately 4GW of coal plants closed and the UK experienced multiple periods of zero electricity generation from coal throughout the summer (Littlecott, 2016).

In addition to contributing to the UK's climate objectives, the closure of the UK's remaining coal power plants would also have significant health benefits. In 2013, almost 3,000 people in the UK died prematurely because of coal power plant emissions and the total health costs were estimated in the range of €4 to €7.8 billion (Schaible et al., 2016).

2. Status of subsidies to coal and coal-fired power in the United Kingdom

As part of the G20 group, the UK has repeated its commitment to phase out fossil fuel subsidies every year since 2009. In addition, as part of the G7, the UK called on all countries, in 2016, to end fossil fuel subsidies by 2025. The European Commission has furthermore repeatedly called on European Union (EU) Member States to end environmentally harmful subsidies, including those to fossil fuels, by 2020. At the 2014 UN Climate Summit, the former Prime Minister, David Cameron, called on other nations to join 'fighting against the economically and environmentally perverse fossil fuel subsidies, which distort free markets and rip off taxpayers'. Despite these strong high-level commitments and calls to end subsidies, the government has since denied that it provides any fossil fuel subsidies (UK Parliament, 2017a; 2017b).

Yet, numerous fossil fuel subsidies can be identified in the UK and the government has recently introduced new support measures, including for coal (OECD, 2015; Bast et al., 2015). These subsidies to coal risk encouraging asset sweating, a strategy where coal plant operators delay shutting down their coal plants so they can continue to benefit from coal subsidies. This delays the shutdown of coal plants and discourages both investment in low-carbon and more flexible capacity. Coal subsidies also undermine the carbon price support measure as well as broader market developments that render coal increasingly uneconomic.

The first set of new subsidies to coal, labelled 'capacity payments', were introduced in 2014, with the stated objective of avoiding blackouts. The first four auctions in the UK's new capacity market have led to subsidy contracts worth €554 million (£453 million) – for just seven coal plants between 2017/18 and 2020/21 (Jones, 2017).

In 2014, the government introduced contracts for a supplemental balancing reserve (SBR) in addition to subsidies through capacity payments, to address shorter-term concerns regarding the reliability of the power system. Under the SBR, power plants that would otherwise be closed or unavailable to the market are paid to remain available on standby. This measure has also benefitted coal-fired power and currently comes at an estimated cost of €147 million (£123 million) in 2016/2017 (Wynn, 2016). Eggborough was the biggest UK coal plant to secure a contract to provide reserve power under the SBR. It won £60 million pounds in subsidies to remain available on standby in the winter of 2016 and will earn three times the current price for its electricity if and when it is needed (Carr et al., 2016).

Coal-fired power plants can additionally receive compensation for providing 'Black Start' services. These are contracts that are bilaterally agreed and require generators to restart power generation when needed. In 2016, contracts worth €94 million (£78 million) were signed for two units, Drax and Fiddler's Ferry (National Grid,

2016). Because these are bilaterally agreed contracts, the National Grid does not publish market information reports regarding ‘Black Start’ services.

Although not the focus of this report, the UK also continues to support coal through public finance, but has taken positive steps to reduce this, including through commitments to limit development finance for coal-fired power. It has supported strong policy proposals within the OECD negotiations regarding restrictions on the use of export credits for coal power plants (Littlecott, 2016).

3. United Kingdom’s coal subsidy measures explained

Annual average coal subsidies (see table): €434 million equivalent to £356 million

The breakdown below provides a chronological overview of the United Kingdom’s historic, continuing and new subsidies. The historic subsidies are not included in the annual average estimate of coal support, as these have been phased out.

- **Coal investment aid (historic: 2003 to 2008):** The Coal Investment Aid (CIA) scheme was introduced in 2003 to help companies access coal reserves in deep mines. It reimbursed up to 30% of qualifying investment costs incurred by coal producers (OECD, 2015). Between 2006 and 2008, years for which subsidy estimates are available, the UK government spent an annual average of €5.4 million on coal investment aid (OECD, 2015). This measure is not included in the table below, as it has been phased out
- **Reduced rate of VAT for fuel and power (continuing: 1973 onwards):** The standard Value Added Tax (VAT) rate in the UK was increased to 20% in 2011. However, a much lower rate is applied to the domestic consumption of both heating fuel and power in the United Kingdom. When VAT was first introduced in 1973, domestic fuel and power were exempted, but subsequently became liable to a rate of 8% in 1994. The rate was lowered to 5% (the EU minimum) in 1997 (OECD, 2015). The cost of this subsidy to coal, in the form of foregone tax revenue, increased from €50 million in 2006 to €89 million in 2014 (OECD, 2015).
- **Mineral Extraction Allowance (continuing: 1986 onward):** The Mineral Extraction Allowance (MEA) was introduced in 1986 and provides mining companies with faster rates of depreciation for selected capitalised expenditures. These include the deposits and expenditures for gaining access to natural resources (‘royalties’). Although this allowance applies to the whole mining sector, fossil fuels account for nearly 90% of the total gross output for the mining and quarrying sector in the UK, which implies that fossil fuel producers are likely to be the main beneficiary of the allowance (OECD, 2015). Because of complexities in approximating the MEA, no estimates of this support are available.
- **Inherited liabilities related to coal mining (continuing: 1994 onward):** The Coal Industry Act of 1994 established The Coal Authority to address inherited liabilities for which coal-mine operators could not be held responsible. The Coal Authority now manages abandoned mining sites, including all former British Coal Corporation pits. The two main programmes covered by the OECD data are mine subsidence and historic liabilities, such as the treatment of mine-water discharges (OECD, 2015).
- **Abandonment Costs (continuing):** This provision allows capital expenditures connected to the abandonment of fields and mines to be deducted in full during the year they are incurred. Carry-back provisions even make it possible for companies to deduct losses arising from decommissioning costs against profits in earlier years, which can result in tax refunds. This allowance applies to the whole mining sector. However, coal, petroleum and natural gas account for nearly 90% of total gross output for the mining and quarrying sector in the UK, which implies that fossil fuel producers are likely to be the main beneficiary of the measure (OECD, 2015). No estimates are available for this subsidy.
- **Beyond market ancillary payments (discontinued in 2017 and replaced with the capacity market):** Coal-fired power plants could receive compensation for providing ‘Black Start’ services. These contracts were bilaterally agreed and require generators to restart generation when needed, to ensure security of electricity supply. In 2015 and 2016, contracts worth €102 million (£78 million) were signed for a total of two units, Drax and Fiddler’s Ferry, from a total of €151 million (£123 million) spent on black start contracts (see above) (National Grid, 2016). Because these are bilaterally agreed contracts, National Grid does not publish market information reports on these services. This measure was discontinued in 2017 as it has been replaced with the capacity market.
- **Capacity market (new: 2014 onward):** The capacity market was introduced in 2014, with the main objective to ensure security of electricity supply. It provides auction-based payments to operators for being available to generate when needed, as well as to demand response and storage providers, to reduce or shift electricity demand. However, the capacity mechanism has a bias towards existing capacity, as power plants are able to bid into the T-4 and T-1 auctions. In addition, existing power plants, including coal, are able to bid for three-year contracts when undertaking investments, while low-carbon technologies, such as demand side response and battery storage, are only able to access one-year contracts. The capacity payments allocated to coal-fired power, as well as diesel generation, directly undermine the effectiveness of the carbon price support measure. Changes to the scheme mean that a large share of diesel that initially bid into the auction withdrew before

the auction started and as a result few diesel plants (<20MW) won capacity contracts in the 2016 auction (Jones, 2016b). However, coal-fired power plants still won contracts worth €156.8 million, on top of those secured in the 2014 and 2015 auction (Littlecott, 2014). There are currently four coal plants that have gained capacity contracts up to 2021, and there is a risk that coal-fired power plant operators will secure new ones in the next auctions. To deliver on its commitment to phasing out coal-fired power by 2025, the government will need to ensure that coal is no longer able to access the capacity market.

- **Supplementary Balancing Reserve (new: 2014 to 2017):** To address shorter-term system security challenges, the government also introduced two new balancing reserves in 2014: The Supplemental Balancing Reserve (SBR) and the Demand Side Balancing Reserve (DSBR). The SBR puts generation capacity into a reserve that is kept outside the electricity market and can be activated when there is short-term security of supply issues (van der Burg and Whitley, 2016). This also benefits coal-fired power, with an estimated €91 million (£77 million) in 2016/2017 alone (Wynn, 2016). As the capacity market moved forward, the scheme was closed in February 2017. The Energy and Climate Intelligence Unit (ECIU) has found that households have spent a total of £180

million on the SBR over the past three years, while the spare power capacity it provides has never been used (ECIU, 2017).

- **Research and development budget for coal (continuing):** According to IEA data, the UK government spends an average of €9.0 million a year on coal-related research, development and demonstration (IEA, 2016).

4. Opportunities to phase out coal subsidies in the United Kingdom

The UK has shown leadership in taking the decision to phase out coal by 2025, which has been followed by similar commitments from several states and countries (Jones, 2016a). However, to set the right example for a process that other countries can follow, the UK government needs to end the subsidies to coal it has recently introduced under various support schemes. These subsidies undermine the UK's carbon price support and also stand in contrast to both the UK's commitments to end fossil fuel subsidies and stop international public finance for fossil fuels. These subsidies also incentivise companies to continue running 'un-economic' coal-fired plants, thereby going against the government's objective to phase out coal-fired power by 2025 (Littlecott, 2016).

Table 1. Existing and new measures that support coal:

| Measure | Subsidy type | Subsidy category | Fuel | Annual estimate (€ millions) | Year(s) for which estimate calculated | Source |
|--|-------------------|------------------------------------|------------------------------------|------------------------------|---------------------------------------|----------------------|
| Inherited liabilities related to coal mining | Budgetary support | Decommissioning and rehabilitation | Coking coal, other bituminous coal | 48.6 | 2006-2014 | OECD (2015) |
| Mineral extraction Allowance | Tax expenditure | Coal mining | Hard coal | Not available | Not applicable | OECD (2015) |
| Abandonment costs | Tax expenditure | Decommissioning and rehabilitation | Hard coal | Not available | Not applicable | OECD (2015) |
| Reduced rate of VAT for fuel and power | Tax expenditure | Coal-fired power (other) | Bituminous coal, patent fuel | 76.6 | 2006-2014 | OECD (2015) |
| Beyond ancillary payments* | Budgetary support | Coal-fired power (other) | Coal | 67.5 | 2016-2017 | National Grid (2016) |
| Capacity market (new) | Budgetary support | Capacity mechanism | Coal | 138.4 | 2017-2020 | Sandbag |
| Supplementary Balancing Reserve (new) | Budgetary support | Coal-fired power (other) | Coal | 94.3 | 2016* | Wynn (2016) |
| RD&D Budget for coal | Budgetary support | Research and Development | Coal | 9.0 | 2011-2013 | IEA (2016) |

* Replaced by capacity market (therefore not included in tracking of new subsidies)

** Financial year 2016/2017

References

- Carr, M., Bauerova, L.M., Morison, R. (2016) 'Investors bet coal has a future as backup to renewable energy' New York: Bloomberg (<https://www.bloomberg.com/news/articles/2016-06-02/investors-bet-coal-has-a-future-as-backup-to-renewable-energy>).
- Delebarre, E.A.J. (2016) 'The carbon price floor' London: House of Commons. (<http://researchbriefings.files.parliament.uk/documents/SN05927/SN05927.pdf>)
- Energy and Climate Intelligence Unit (ECIU). (2017) 'Overpowered: has the UK paid over the odds for energy security?' London: ECIU (http://eciu.net/assets/ECIU_Overpowered.pdf).
- Energy Information Administration (EIA). (2016) 'Country Analysis Brief: United Kingdom.' London: ECIU (https://www.eia.gov/beta/international/analysis_includes/countries_long/United_Kingdom/uk.pdf).
- Evans, S. and Pearce, R. (2015) 'Mapped: How the UK generates its electricity.' Carbon Brief, 12 October 2015 (<https://www.carbonbrief.org/mapped-how-the-uk-generates-its-electricity>).
- Jones, D. (2017) 'Phasing-out coal by 2023: Response to the BEIS coal consultation.' London: Sandbag. (<https://sandbag.org.uk/wp-content/uploads/2017/02/Sandbag-Coal-consultation-response-Feb-2017.pdf>).
- Jones, D. (2016a) 'Why does the UK carbon price support matter?' London: Sandbag. (https://sandbag.org.uk/wp-content/uploads/2016/11/Why_the_Carbon_Price_Support_matters_Nov_2016.pdf)
- Jones, D. (2016b) 'UK Capacity Market – Initial analysis of results for oct-20/sep-21' London: Sandbag. (https://sandbag.org.uk/wp-content/uploads/2017/03/Capacity-Mechanism-analysis2_13Marchupdate-1.pdf).
- IEA (2016). 'Energy Technologies Perspectives 2016'. Paris: International Energy Agency. (http://www.oecd-ilibrary.org/energy/data/iea-energy-technology-r-d-statistics_enetech-data-en).
- Littlecott, C. (2016) 'UK Coal Phase Out: The International Context.' London: E3G (https://www.e3g.org/docs/UK_Coal_Phase_Out_-_The_International_Context,_November_2016,_E3G.pdf)
- Littlecott, C. (2015) 'G7 Coal Phase Out: United Kingdom. A Review for Oxfam'. London: E3G (https://www.e3g.org/docs/UK_G7_Analysis_October_2015_Final.pdf)
- Littlecott, C. (2014) 'Keeping coal alive and kicking: Hidden subsidies and preferential treatment in the UK Capacity Market'. London: E3G (https://www.e3g.org/docs/E3G_Briefing_-_Keeping_coal_alive_and_kicking_-_hidden_subsidies_and_preferential_treatment_in_the_UK_capacity_market.pdf).
- National Grid. (2016) 'Recovery of £113m of Black Start contract costs for 2016/17 via the BSUoS invoice'. London: National Grid. (<http://www2.nationalgrid.com/UK/Industry-information/System-charges/Electricity-transmission/News/IndustryLetterBlackStartCostRecovery2016/>).
- Organisation for Economic Co-operation and Development (OECD). (2015) 'Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2015'. Paris: OECD.
- Schaible, C., Flisowska, J., Huscher, J., Jones, D., Lazarus, A. and Urbaniak, D. (2016) Lifting Europe's Dark Cloud – how cutting coal saves lives. Brussels: CAN Europe; Brussels: European Environmental Bureau (EEB); Brussels: HEAL; Brussels/London: Sandbag; Gland: WWF (<http://www.eeb.org/index.cfm?LinkServID=E3882544-5056-B741-DBB3E8DE57F619F6>).
- UK Parliament (2017a) 'Fossil Fuels: Tax Allowances: Written question - 63181', 6 February 2017. Available at: <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2017-02-06/63181/>
- UK Parliament (2017b) 'Fossil Fuels: Subsidies: Written question - 63284', 6 February 2017. Available at: <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2017-02-06/63284/>
- Wynn, G. (2016) 'European "capacity payments": Shoring up ageing coal power plants' Energy and Carbon, 16 December 2016. (<http://energyandcarbon.com/european-capacity-payments-keeping-ageing-coal-power-plants-alive/>).

This material was funded by the Oak Foundation and the Hewlett Foundation.

The authors are grateful for support and advice on this country study from Dave Jones (Sandbag) and Chris Littlecott (E3G). The authors would also like to thank Holly Combe, Claire Bracegirdle and Amie Retallick for editorial support.

This country study is a background paper for the policy briefing *Cutting Europe's lifelines to coal: tracking subsidies in 10 countries*.

For the purpose of this country study, subsidies to coal include: direct spending, tax expenditure and other support mechanisms (e.g. capacity mechanisms). Where information is available, estimates for all of these categories are included in the national subsidy total for each country and in the Country Studies. The policy brief provides a more detailed discussion of the methodology used for the country studies. The authors welcome feedback on both this country study and the policy brief to improve the accuracy and transparency of information on coal subsidies.

A data spreadsheet summarising coal subsidies data for the 10 European countries reviewed is available here: odi.org/coal-subsidies-Europe.



Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ
Tel +44 (0)20 7922 0300
Fax +44 (0)20 7922 0399
www.odi.org
info@odi.org

ODI is the UK's leading independent think tank on international development and humanitarian issues. Readers are encouraged to reproduce material for their own publications, as long as they are not being sold commercially. As copyright holder, ODI requests due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI or our partners.

© Overseas Development Institute 2017. This work is licensed under a Creative Commons Attribution-NonCommercial Licence (CC BY-NC 4.0).