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ACCELERATING COAL PHASE OUT THE OECD CONTEXT

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Summary

- > Following the Paris Agreement in 2015, repeated analyses have identified that OECD countries should complete the full phase out of unabated coal use for power generation by 2030.¹
- > A structural shift away from coal is already underway across the majority of OECD members and this is set to accelerate.² A growing number of national and regional governments are looking to develop phase out policies as a means of providing a managed transition that ensures energy security and a positive pathway for workers and communities.
- > Among the G7, **Canada, France** and the **UK** have all made national commitments to coal phase out, as has **Alberta** and the city-region of **Berlin**. **Italy** is now consulting on coal phase out scenarios as part of its National Energy Strategy. In the USA, states including **California, Massachusetts, New York, Oregon** and **Washington** are on track to be coal free by 2025, and are taking policy measures to achieve this and / or restrict coal generation from out of state.
- > Beyond the G7, an increasing number of OECD countries could complete a coal phase out over the next few years. **Belgium** became coal free in 2016. **Finland** has announced it will legislate to end coal use by 2030. In **Denmark** the leading utility DONG will cease coal use by 2023. **Austria, Ireland, Israel, New Zealand, Norway, Portugal** and **Sweden** all have just one or two coal power plants left in operation. The **Netherlands** and **Spain** are shutting some older coal power plants, but are yet to set out a comprehensive retirement plan. Most recently, **South Korea** has announced significant steps to close the dirtiest existing coal units, prohibit the construction of new coal plants, and convert those under construction to use gas.
- > It is in the interests of governments to provide a policy framework for this inevitable transition pathway. Proactive coal phase out policies can help provide a more orderly transition that attends to the needs of workers and regions while ensuring energy security is maintained.
- > By working together, governments can share best practice and insights into the transition from coal to clean energy. Cooperation can also provide mutual support for political commitments and provide a basis for aligned efforts to assist the shift from dirty coal to clean energy in emerging economies.



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G7 update

- > G7 countries agreed in 2015 that the decarbonisation of the global economy should be completed by the end of this century; that this requires deep cuts in CO₂ emissions; and that it must include a transformation of their own energy sectors by 2050. The need for coal phase out is implied by this commitment, but has not (yet) been made explicit.
- > E3G has been tracking G7 progress on coal since 2015 in a series of scorecard reports.³
- > G7 countries are taking action on coal to different degrees:
 - > **France** had committed to coal phase out by 2023 under President Hollande but did not introduce policy measures to deliver on this. Incoming President Macron has reconfirmed this commitment, bringing it forward to 2022. Policy measures are now awaited.
 - > The **UK** was the first country to commit to coal phase out by 2025, in November 2015. This was reconfirmed in November 2016 and a policy consultation was undertaken in early 2017. Policy measures are expected in autumn 2017.
 - > **Canada** has announced a 2030 coal phase out objective, matching the commitment of **Alberta** and the completed phase out already achieved in **Ontario**. Policy options building on the existing framework are currently under development.
 - > **Italy** is currently consulting on its new National Energy Strategy, which includes scenarios for coal phase out between 2025 and 2030.
 - > **Germany** has taken action to retire some of the oldest lignite units but is grappling with difficult politics ahead of its impending election. As the largest user of coal in Europe, the approach taken by Germany will have far-reaching implications and should be encouraged by peers.
 - > **Japan** is the sole G7 country in which utility companies are seeking to build new coal plants both at home and abroad, encouraged by the Japanese government through the Ministry of Economy, Trade and Industry (METI) and its bilateral finance institutions. More positively, two proposed coal plants have been cancelled in the past year as utilities recognise that they are bad investment options. Environment Minister Koichi Yamamoto recently spoke out against plans for a large new coal power plant,⁴ but was then replaced in a cabinet reshuffle.
 - > **The USA** continues to make significant progress on coal, with retirements of 117GW of capacity already scheduled. A further 226GW remains.⁵ At the state level, **California, Massachusetts, New York, Oregon** and **Washington** are on track to be coal free by 2025, and are taking policy measures to achieve this and / or restrict coal generation from out of state.



OECD Overview

Before turning to the prospects for coal phase out in other OECD countries it is important to highlight that **Belgium** has already completed a coal phase out in early 2016. This was not an announced government policy objective, but resulted from the progressive closure of ageing power plants over successive cycles of EU pollution control regulations.

Table 2 below provides brief details of the situation in OECD countries beyond the G7. The majority these countries have strong potential to complete a domestic coal phase out significantly before 2030.

Table 2: OECD Coal Phase Out Overview

Country / Capacity	Status	Notes
Austria <1GW	Positive	Last 2 coal power plants have already announced closure dates of 2020 & 2025. Could be brought forward.
Australia ~27GW	Challenging	Hazelwood power plant closed in March 2017. Unions and Civil Society groups calling for Just Transition for workers and policy framework for coal plant retirements. Federal Government strongly in favour of continuing reliance on coal and considering subsidies for new coal generation and mining. Negative diplomatic influence through support for coal exports.
Chile ~5GW	Contested	Increasing civil society campaigning against coal and positive renewables potential. Ageing coal plants are largest source of CO2 emissions and have negative health impacts. Coal plants still receiving capacity payments even when ripe for retirement.
Czech Republic ~9GW	Contested	Significant pollution control challenges for ageing power plants. The need for a lignite region transition is becoming recognised.
Denmark <3GW	Positive	Has previously committed to being fossil free by 2050 and ending coal use by 2030. DONG utility has announced it will cease coal use by 2023, leaving just a couple of small CHP plants remaining. Full coal phase out needs a policy framework and solutions for heat demand.
Finland ~2GW	Positive	Government has committed to phase out by 2030 and has announced it will bring forward a coal phase out law in 2018. ^{6 7}
Greece <5GW	Challenging	Has ageing power plants that should shut under EU pollution control regulation, but government is supporting proposals for new lignite power plants.
Hungary ~1GW	Contested	Has a relatively small amount of coal power plant capacity. Could be an early mover in Eastern Europe.



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Ireland <1GW	Positive	The last remaining coal power plant at Moneypoint is responsible for ~6% of national CO2 emissions. ⁸ Ireland's 2017 National Mitigation Plan recognises that the plant's current operational configuration will end by 2025, and that a decision on its future and / or replacement is required before 2020.
Israel <5GW	Positive	Has recently moved to close the ageing and polluting Hadera power plant rather than upgrade it to meet air pollution standards. This leaves just one large plant (Rutenberg, 2GW).
Mexico <6GW	Contested	Coal fired power generation makes up less than 4% of installed capacity and is expected to decline to 4GW in 2029 but as yet there are no plans for full phase out.
Netherlands <6GW	Contested	Has started to accelerate closure of older coal power plants, but three new ones recently entered operation. Increasing political discussion of coal phase out stimulated by the Urgenda court case requiring increased climate protection efforts by 2020.
New Zealand <1GW	Positive	In 2016 New Zealand's last two coal-fired units were announced for closure by end of 2018. This was then pushed back to 2022 following receipt of additional payments from other generators. The units can operate on both coal and gas, and have been reducing their coal stockpiles.
Norway <0.1GW	Positive	Norway has one very small coal-fired CHP plant in the high Arctic and is considering alternatives. The Sovereign Wealth Fund has acted to exclude investments in coal companies and utilities with a substantial proportion of coal in their portfolio. Continued tightening of this limit could be a driver for accelerated performance by utilities.
Poland ~28GW	Challenging	Ageing coal power plants facing big challenge of meeting air pollution requirements. A handful of new plants under construction. Polish mining sector facing significant economic pressures. Government backing coal but market forces shifting. EU 2030 climate goals and energy market framework may help accelerate transition.
Portugal <2GW	Positive	Has 2 coal power plants left, responsible for 16% of GHGs and a quarter of national electricity capacity. Current Power Purchase Agreements (PPAs) end in 2017 & 2024 but the power plants are set to continue operating. Government modelling for the 2015 Climate Action Plan included a scenario with high investment in renewables that could see the plants close by 2021 and 2026. Government hasn't fixed a



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		firm closure date as yet. Doing so would help drive further investment in renewables, particularly solar.
Slovakia ~1GW	Contested	Has a relatively small amount of coal power plant capacity. Could be an early mover in Eastern Europe. Governing coalition has been positive for action on climate.
South Korea ~30GW	Positive	New President Moon Jae-in has committed to phase out coal and nuclear due to air pollution and citizen concerns. Existing coal plants are being shut during summer months to reduce air pollution ahead of final closure. The government has recently announced that no further permits for coal plants will be issued, and that those under construction will convert to LNG. ^{9 10}
Spain <12GW	Contested	Has massive overcapacity and could retire coal plants without impacting energy security. A set of old coal plants should retire under the EU Industrial Emissions Directive. Iberdrola and Endesa utilities have announced closure plans for four power plants, but Energy ministry is pushing for them to stay open in the face of pressure from mining interests and coal unions. There has been continuing state subsidy support for domestic coal production, but mines are due to close by 2018.
Sweden <0.5GW	Positive	Has a fossil free commitment. But government permitted the 'sale' of Vattenfall's lignite interests in Germany to EPH at a loss, rather than enabling a coal phase out. Vattenfall still has hard coal power plants in operation outside of Sweden and has no phase out plan in place as yet.
Turkey ~16GW	Challenging	Has over 70GW of new coal capacity in the development pipeline, the third largest new coal risk globally.

About E3G

E3G is an independent, non-profit European organisation operating in the public interest to accelerate the global transition to sustainable development. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. www.e3g.org

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Endnotes

¹ See for example <http://climateanalytics.org/publications/2016/implications-of-the-paris-agreement-for-coal-use-in-the-power-sector.html>

² The costs of renewables have significantly decreased in recent years, opening up new opportunities for smart, clean electricity generation. At the same time, ageing coal plants are increasingly heading towards retirement given the age structure of past investments.

³ Available at <http://www.e3g.org/showcase/coal-phase-out>

⁴ <http://www.reuters.com/article/us-japan-environment-coal/japan-environment-minister-urges-chubu-elec-coal-fired-power-project-be-reconsidered-idUSKBN1AH3KS>

⁵ <http://content.sierraclub.org/coal/victories>

⁶ See <http://www.reuters.com/article/us-finland-energy-coal-idUSKBN12X26Y>

⁷ <https://www.reuters.com/article/finland-coal-carbon/finland-to-introduce-law-next-year-phasing-out-coal-idUSL8N1LH51D>

⁸ Also: Kilroot power plant in Northern Ireland is part of the all-Ireland electricity grid and not subject to UK phase out policy framework.

⁹ <http://uk.reuters.com/article/southkorea-politics-energy/s-korea-to-temporarily-close-10-old-coal-fired-power-plants-in-june-idUKL4N1IH13D>

¹⁰ http://www.koreatimes.co.kr/www/biz/2017/08/488_235615.html