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Report

Accelerating the phase out of coal-fired power generation: international collaboration and diplomacy

Monday 4 – Wednesday 6 September 2017 | WP1563

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The need to move away from coal-fired power generation has become increasingly recognised since the Paris Agreement in 2015, when 195 countries agreed to “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.” The particular emphasis on coal comes as a result of its high carbon intensity which makes it the single largest contributor to climate change. According to the International Energy Agency (IEA), 41% of electricity generation globally was from coal in 2014. Coal is also a leading contributor to air pollution and consequent human health impacts.

Structural trends in technology and energy markets are enabling the phase out of coal power generation, particularly among OECD member states. Similarly, recent reductions in the cost of renewable energy production make it an increasingly viable alternative to coal in emerging economies.

International collaboration can consolidate and accelerate these twin trends, and put the world closer to the goals of the Paris Agreement. The phase out of coal-fired power generation and the transition to clean energy offers multiple benefits to countries and regions in respect to human health, water scarcity, environmental and cultural protection and the sound management of public finances. The transition away from coal does however also require attention by policy makers to manage the impacts on national economies, workers, and communities, as well as the technical energy security challenges of a shift to decentralised electricity generation and flexible grids.

This senior-level event began a dialogue around creating the conditions for an accelerated and orderly transition from coal in the global economy. It built an understanding of market drivers and policy approaches to coal phase out as a basis for continued mutual encouragement and sharing of best practice. It identified how political alignments and proactive diplomacy can grow the number of countries and regions acting to phase out existing coal power plants. It also explored how this momentum can be leveraged to assist emerging economies seeking to pursue clean energy alternatives to coal.

In order to meet the 1.5 degrees Celsius goal identified in the Paris Agreement, coal-fired power generation must be phased out. To meet the Paris Agreement, analysis shows that coal phase-out is needed no later than by 2030 in the OECD

and EU28, 2040 in China, and no later than by 2050 in the rest of the world. Positive trends, including the development of cheap renewable energy at scale, have seen emissions from coal fall over the last several years. At the same time, South East Asia stands out as a hot spot region where governments and utility companies are currently pursuing plans to construct new coal power stations, which would risk increasing CO₂ emissions and the costs of a subsequent transition away from coal. Without concerted policy effort, coal decline will not occur on the trajectory needed, even with rapid advancement in renewable energy. Concern for public health and the environment have also driven policy to regulate and phase out coal. Premature deaths and negative impacts on human health from air pollution are a daily reality in many areas. Similarly, water usage to cool power plants is a source of increased water scarcity and negative environmental impacts, particularly in drought-sensitive regions that are already feeling the impacts of climate change. At the same time, vested interests and institutional bias towards business as usual practices erect barriers to the transition from dirty coal to clean energy.

In order to build on the recent efforts by a growing number of governments to peak coal use and / or accelerate phasing out of its use, countries, regions, and non-state actors can share experiences and lessons learned, and identify opportunities for multilateral and multi-stakeholder collaboration.

This senior level conference sought to explore the opportunities to accelerate coal phase out, bringing together experts from governments, international and civil society organisations, academia and think tanks. The aims were to:

- Build understanding of the policies, experiences, and approaches that have helped usher in coal phase out commitments by different sub-national regions and countries
- Explore the regional and local differences that affect coal phase out policies
- Determine where greater multi-stakeholder collaboration is possible and beneficial
- Facilitate a space for continued international collaboration on coal phase-out.

Key points

- To limit global warming to 1.5 degrees Celsius, coal must be phased out globally by 2050, beginning with a peak in generation in 2020; however, OECD countries must move first, phasing out coal by 2030, followed by phase out in China by 2040.
- Emissions from coal have fallen over the last several years, but the transition is still not yet moving fast enough to keep in line with the Paris Agreement.
- Investment in renewable energy technology has allowed for rapid technological advancement and dramatic cost reductions, and must be continued in regions which have not made initial investments to spur growth.
- Financiers across public and private institutions must stop funding new coal, taking into account the true social cost-benefit analysis of coal power. New coal plants are now at increased risk of poor project economics and asset stranding.

- There are multiple reasons to phase out coal use other than climate change, including public concerns over air pollution and water scarcity. Policies and regulations to tackle air pollution have been among the most effective drivers for reduced coal use.
- The transition away from coal to clean energy must be a just transition which accounts for the well-being and prosperity of workers, communities, and marginalised people. The development of clean energy infrastructure must ensure that all people have equitable access to energy.
- The conference put many participants in touch with one another for the first time, providing an opportunity to share various policy and regional perspectives, learn from technical experts, and develop common understandings for moving forward with coal phase out.

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The case for coal fired power is in decline

1. The development of cheap renewable energy at scale has catalysed the fall of coal over the last several years. Significant reductions in coal use in the United States, the United Kingdom, and China has driven the global decline of coal. US states have been integral in coal phase out by taking action into their own hands, spearheading efforts that have led to the retirement of one third of the coal fired power generation in the United States. Many have also played important roles in stopping the export of coal, as western states have blocked coal export facilities that could spur trade to Asia.
2. To meet the Paris Agreement, analysis shows that coal phase out is needed no later than by 2030 in the OECD and EU28. The United Kingdom — birthplace of industrial coal — has reduced coal's share on the grid from 40% in 2012 to 9% in 2016, and then saw the first 24 hour period without coal in April 2017. Finland has announced that it will ban coal use in electricity generation by 2030. In Denmark and Italy, utilities are undergoing a proactive transition from coal to clean energy. In North America, states and provinces lead the way, including a phase out in Alberta, where coal power generation has been over half of their electricity mix.

From coal to clean energy in Asia

3. China and India have drastically cut coal construction pipelines and are showing signs of decoupling growth from emissions. And South Korea has committed to retire ten of its older coal plants and restrict the construction of new coal power plants. China is taking action to halt and cancel overcapacity of coal power generation at home, but still needs to act to curb overseas development. Japan is the outlier among G7 members, in that it is pursuing new coal power generation domestically and aggressively promoting coal finance internationally. Air quality and water concerns drive the development of environmental regulation and increase the costs of coal use: coal's claims to be cheap rest on it continuing to be dirty. Research indicates coal is directly responsible for 260,000 premature deaths in China, 100,000 in India, and 20,000 in the European Union. In India, water use for cooling coal plants has exacerbated droughts and led to water shortages. In many areas, moving to clean energy also gives more people energy access.
4. The story of coal decline varies across these cases; however, important to each is experience sharing. In many cases, coal has met strong competition from natural gas and cheap renewables — the result of technological advancement and concerted efforts at scaling up. For instance, German investment and Chinese production reduced prices of solar in many markets.

Policy frameworks for coal phase out

5. A variety of effective policy interventions are being used to assist the transition away from coal use in electricity generation, including:

- Legislative bans on coal – This is the route under development in Finland, but one that requires buy-in from many stakeholders.
- Taxation, emissions regulation, and carbon pricing – These are proving to be effective tools for transitioning away from coal in different jurisdictions, easing the burden over time and signalling the need for action by others.
- Supporting utilities as champions – Regulation, price signals, and incentives to invest in renewables help utilities transition from coal advocates to champions for climate action.
- Non-climate drivers – Concerns over air pollution and access to clean water, have driven action on coal, including in China and India, but should not supplant the narrative for climate action.
- Financial regulations – Public finance, private finance, and multilateral development banks must end coal financing.
- Scheduled phase out and transitions – Phasing out older, less efficient plants first creates a dynamic of old coal being replaced with new clean energy. A temporary transition of coal to biomass may help to maintain energy security and heat production during the transition, but has significant risks.
- Just transition – Must be incorporated in coal phase out plans to provide decent futures in new, green economies for workers and communities. Increases coal phase out constituency.
- Civil society campaigns – Effective in applying pressure on governments, businesses, and financial institutions to phase out coal. In most places, public interest in renewables is high.

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"Investments in coal projects must end, starting with public finance."

Challenges ahead

6. While coal generation has shown signs of peaking, decreasing by 6.2% in 2016, it is not a certainty that this will continue. In fact, signs of recent coal generation upticks underscore the need for concerted effort to phase out coal on a timeline consistent with the Paris Agreement. In areas like Southeast and East Asia, a variety of factors fuel continued coal project development (albeit with a significantly increased rate of project cancellations), including underdeveloped renewable markets and high barriers to entry, non-existent coal regulation, and a prevalence of domestic coal with decreased international value. On top of this, coal promoting countries are continuing to offer public finance for projects that would otherwise struggle to present a plausible business case.
7. In most regions, entrenched interests continue to challenge coal phase out, from the private sector to government and regulatory agencies steeped in decades of experience with coal power generation. False narratives of jobs and economic vitality from coal are widespread in places like the US. The myth of baseload power also persists, locked in from decades of running coal powered grid systems. A challenge to transition in the real economy comes from a renewed push for coal subsidies and additional costs being loaded on to the developers of renewable energy projects.
8. As coal is phased out, policymakers must ensure just transitions for workers, communities, and marginalised people to decent, green jobs is a social imperative. Examples of just transitions exist in many regions, but the scale at which policy makers, businesses, and communities must work to shift away from coal globally is a major undertaking. When done well, however, just transition policies have the power to not only improve the lives of many, but create new constituencies in favour of transition in the communities most often heaviest affected by climate change.
9. While investment in renewables has increased, investment in coal projects continues at a level that will move the world off of the 1.5 degrees Celsius pathway. Investments in

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coal projects must end, starting with public finance. Existing restrictions on lending must be strengthened for multilateral development banks and their intermediaries, taking into consideration adequate risk accounting for coal projects.

Key moments for signalling action

10. To assist efforts to expand commitments to coal phase out by OECD countries and the peaking and reduction of coal power generation elsewhere ahead of 2020, there will be a series of key moments during 2018-19 that could provide opportunities for coordinated efforts, including:
 - California Global Climate Action Summit 2018 – Subnational actors will play a key role in the transition from coal to clean and signal their readiness to contribute to climate action and coal phase out.
 - Facilitative Dialogue 2018 – An early test of Paris implementation, the Facilitative Dialogue will seek to ratchet ambition behind NDCs. Real world progress on coal can help support deeper commitments.
 - COP24 in Katowice, Poland – An important moment to send signals that countries are supporting a just transition as they seek to phase out coal.
 - World Bank meetings – An opportunity for financial institutions to ensure that the risks of investing in coal are taken into account, and public financing for coal comes to an end.
 - UN Secretary General's Summit 2019 – With a focus on climate action, this moment is an important target by which time countries should be aligned and working on coal phase out.

Actions in the OECD

11. In order to deliver CO2 emissions reductions in line with the aims of the Paris Agreement, OECD countries should be aiming to have ended coal use for power generation by 2030 (unless it is fitted with carbon capture and storage technology). This means that by 2020 OECD governments should all be making visible progress on coal phase out and introducing policy commitments. Alongside this, OECD countries have an important international role to play through implementing a complete moratorium on coal finance (including subsidies and investment in existing plant).
12. Through the proactive sharing of policy approaches and real-world expertise, OECD countries can address practical challenges and support political leadership. There is already growing interest in how coal phase out approaches can provide a key element of a 'clean growth' agenda. Sub-national governments, energy regulators, and grid operators all have valuable roles to play in sharing insights and technical expertise.
13. By working together, OECD countries can undertake more effective diplomatic engagement with countries seeking to transition away from coal and those currently still financing coal and related infrastructure. By challenging the myth of "clean coal" and orthodoxy of baseload, leading governments can support the coal to clean challenge in emerging economies.

Actions in emerging economies

14. The last remaining hot spots for the development of coal power plants are in emerging economies, but even here the pipeline of project development is significantly reduced. In order to secure a timely transition from coal to clean energy there is a need for parallel activities to tackle supply and demand elements of international finance for coal related infrastructure. This must include engagement with recipient countries and finance providers alike to reorient financial flows.
15. In order to support this transition, there is a need to encourage the sharing of peer to peer best practice for commercial lending and development banks alike. This can

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- include an initial focus on asset stranding risk caused by early retirement of new and existing coal plant. Such an approach would also provide stronger information flows about real project impacts to investment decision makers, including regarding air pollution as well as CO₂.
16. At a national level, donors are already recognising the need to support greater capacity in emerging economies to support clean energy investment decisions. These will increasingly be taken forward through the development of robust 2050 strategies, thereby helping to improve investor confidence and the bankability of renewable projects displacing new coal build. OECD governments can also assist through the provision of expert input and analytical tools to provide better understanding of electricity system development and the integration of increased renewable penetration.
 17. Internationally, there is a continued need to defend, promote and strengthen existing multilateral restrictions on coal finance, including via multilateral and national development banks and OECD Export Credit Agency guidelines.

Conclusion and next steps

Coal phase out and just transition must be integrated into economy-wide 2050 strategies. OECD countries must take the lead on ending new coal and financing. By proactively sharing peer to peer learning and combining their diplomatic efforts they can have a global impact.

Governments still considering the construction of new coal power generation must improve their capacity to assess risk on coal investment and promote clean alternatives, providing tools and support for phase out plans and increasing the bankability of renewable projects. International assistance will be required to support this.

Countries, subnational actors, and civil society have an opportunity to join forces to form coalitions carrying forward the commitment to develop strategies to transition from coal to clean energy, end coal investment, and stop building new coal plants.

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