The Death Spiral of Coal in the U.S.
Will New U.S. Energy Policy Change the Tide?

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Abstract

Until the change in the U.S. administration in 2017, the U.S. coal industry was heavily feeling the fading opportunities in coal. The Trump administration, however, has promised to stop the spiraling down of the U.S. coal industry and has been active in rescinding environmental legislation affecting coal production and combustion. We detail the origins of the decline of the U.S. coal industry and new policy interventions by the Trump administration. To assess whether energy policy and other interventions can turn the tide for the U.S. coal industry, we assess three potential support schemes: i) revocation of the Clean Power Plan (CPP); ii) granting access to the Pacific coal market by developing West Coast coal export facilities; and iii) enhanced support for Carbon Capture, Transport, and Storage (CCTS) technology to provide a perspective for continued use of steam coal while mitigating climate change. We investigate the short-term and long-term effects that could arise for U.S. coal production using a comprehensive partial equilibrium model of the world steam coal market, COALMOD-World (Holz et al. 2016). Revoking the CPP will stop the downward trend of domestic steam coal consumption in the U.S., however, will not lead to an increase of U.S. coal production compared to the year 2015 (760 Mt) in itself. Rather an increasing global demand for U.S. steam coal and growing coal exports could increase total U.S. production by the year 2025. In the case of additional export facilities at the U.S. West Coast, U.S. coal production even could reach levels of production of the year 2010 (910 Mt) by 2030 and beyond before declining in 2050 again. In the situation where global steam coal consumption, including U.S. consumption, is aligned with reaching the 2°C target, U.S. steam coal production drops to around 200 Mtpa by 2030, and below 50 Mtpa by 2050, respectively, even if CCTS is available and exports via the U.S. West Coast are possible.

Key policy insights

- Revoking the Clean Power Plan (CPP) will not lead to an increase of U.S. coal production above current levels.
- A growing global demand for U.S. steam coal could increase U.S. coal production until the year 2040, in case sufficient export port capacities are made available, amongst others along the U.S. West Coast.
- Taking climate change mitigation seriously, coal-fired power production with Carbon Capture and Storage (CCTS) cannot stop the rapid decline of the U.S. coal sector.

Keywords: U.S. coal sector, Trump, Clean Power Plan, Steam Coal, coal ports, Carbon Capture, Transport and Storage