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German coal phase-out and global coal markets

Max Schönfisch & Max Gierkink - EWI Cologne | EWI Energy Debate | 08.04.2019

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Topics

- 1. Coal consumption at the global level
- 2. Europe on its way out of coal
- 3. Phasing out coal: implications for Germany





Coal Consumption at the Global Level

- In 2017, the world consumed 5.4 billion tce of coal (up 1% on 2016)
- 61% for power, 19% coking, the remainder for heat and cement production
- Coal is still the 2nd most important source of energy after oil
- China is by far the largest consumer





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Looking Ahead ...

- There are two worlds when it comes to coal
- While China will remain pivotal, demand growth will stagnate
- Demand in Europe and North America will continue to decline
- India is projected to see the largest absolute increase in demand
- Emerging Asia will continue to see the fastest growth
- In the medium-term, global coal consumption is forecast remain roughly at present levels

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Europe on its way out of coal

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ewi Coal Consumption in Europe

Thermal Coal Consumption in Europe



ewi Reliance on Coal for Power Generation

























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- Coal is still the second most important fuel in the energy system.

> Consumption is on the rise in many regions of the world.

- (Western) Europe is on its way out of coal, while Eastern Europe continues to rely on its domestic coal resources in particular.
- Can Germany as a coal-reliant economy set an example for a global transition away from coal?

Phasing out coal: implications for Germany

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EUI The study examines the effects of the German coal phase-out using a comparative scenario analysis

Abschlussbericht

Kommission "Wachstum, Strukturwandel und Beschäftigung"

Beschluss vom 26.01.2019

Reference (Ref)

- Increasing electricity demand and peak load
- Achieving the 65% RES target in 2030

• EU ETS

Coal phase-out (Exit)

- Assumptions as for reference scenario
- + Coal phase-out until 2038
- + Retirement of certificates

ewi In the reference scenario only a slight decline of the installed capacity of coal-fired power plants can be observed



EUI The coal phase-out of will increase the necessary expansion of <u>backup</u> capacities and combined cycle gas turbines



ewi In the reference scenario, the national climate target in the energy sector for 2030 is clearly missed

Ref: Within the EU ETS framework national emissions are decreasing at a slow rate

Ref: 261 Mt of CO₂ equivalents remain in 2030. The sectoral climate target (175-183 Mt) is clearly missed



ewi Reducing national emissions by phasing out coal will enable the energy sector to achieve its 2030 greenhouse gas target

Exit: Reduction in emissions from coal-fired generation partially offset by additional gas emissions Exit: 189 Mt of CO_2 remain in 2030. Sectoral climate target can be met by further measures

Exit: Increase of electricity price due to coal phase-out of approx. 5 EUR / MWh (+9%) in 2030





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