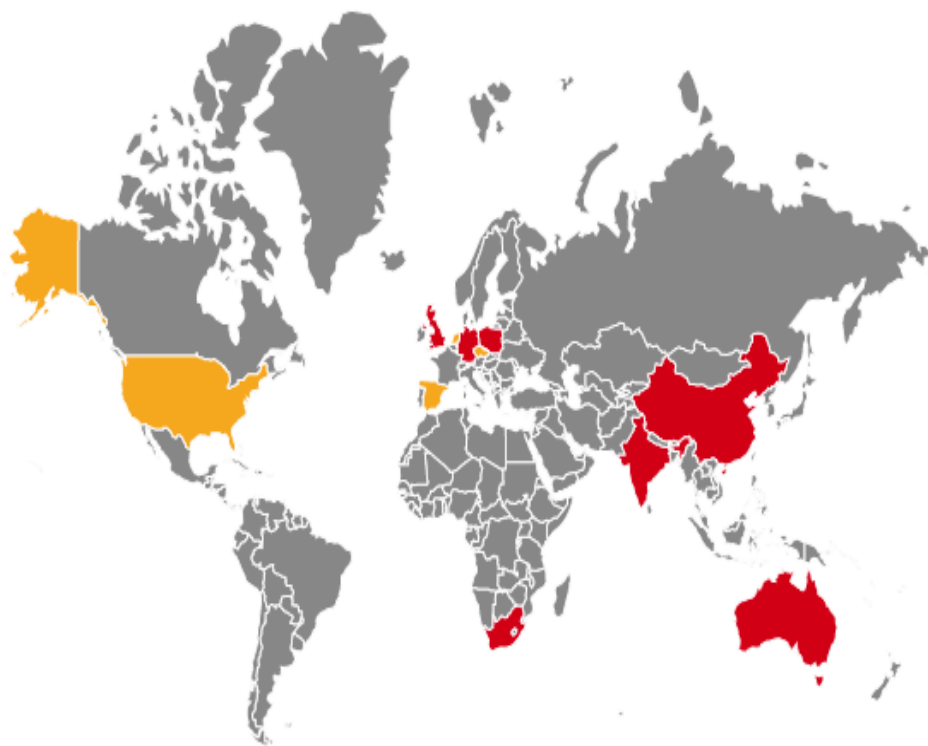


Coal transitions: what is happening internationally?

Symposium South Africa- 27/02/2019
oliver.sartor@iddri.org

IDDRI Coal Transitions: an international research project



IDDRI

Climate
Strategies

DIW BERLIN



ibs
Institute
for structural
research



ERC
ENERGY RESEARCH CENTRE
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Supported by KR Foundation

www.coaltransitions.org

Six leading research teams from 6 major coal using economies: China, India, South Africa, Australia, Germany, Poland.

Exploring the conditions for feasible and just pathways to coal transitions, compatible with <math><2^{\circ}\text{C}</math> goal of Paris Agreement

SciencesPo

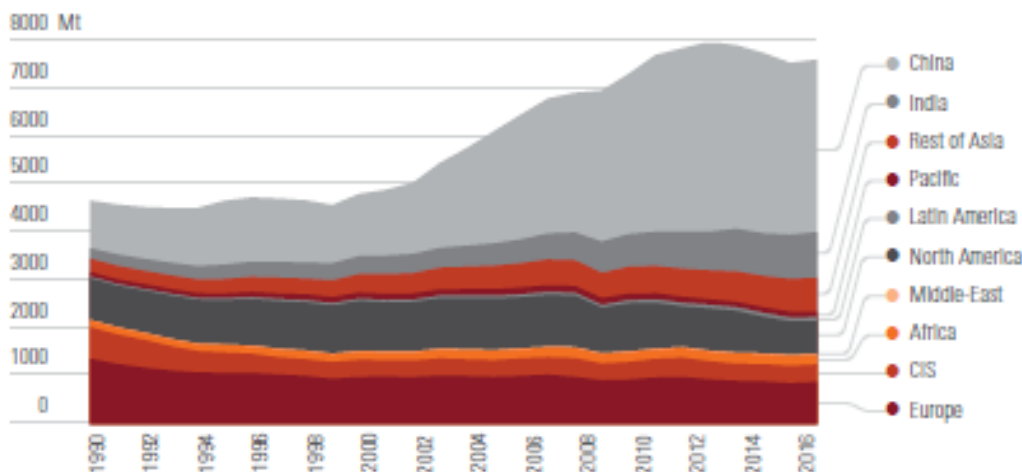
Globally, coal consumption appears to be peaking

Different trends across regions, however...

...We see global demand will likely begin to go into decline during the 2020s

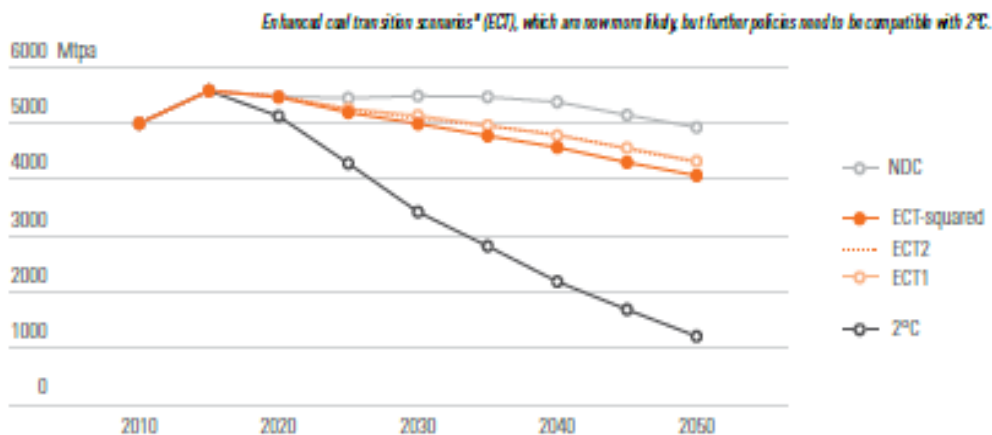
Rate of decline will need to accelerate substantially to achieve the goals of the Paris agreement

Figure 1. Global coal and lignite consumption (includes thermal and metallurgical coal)



Source: Enerdata.

Figure 10. Global coal consumption 2010-2050 in various scenarios in Mtpa

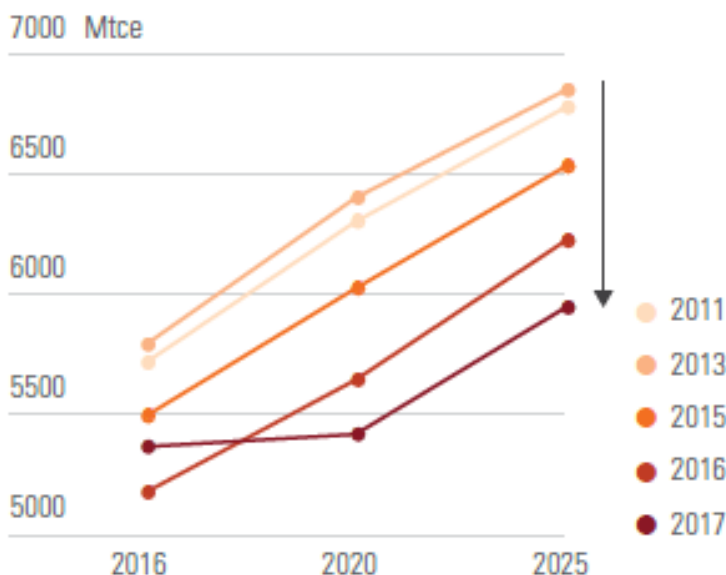


Source: Coal Transitions project.

Note: Figures for thermal coal only

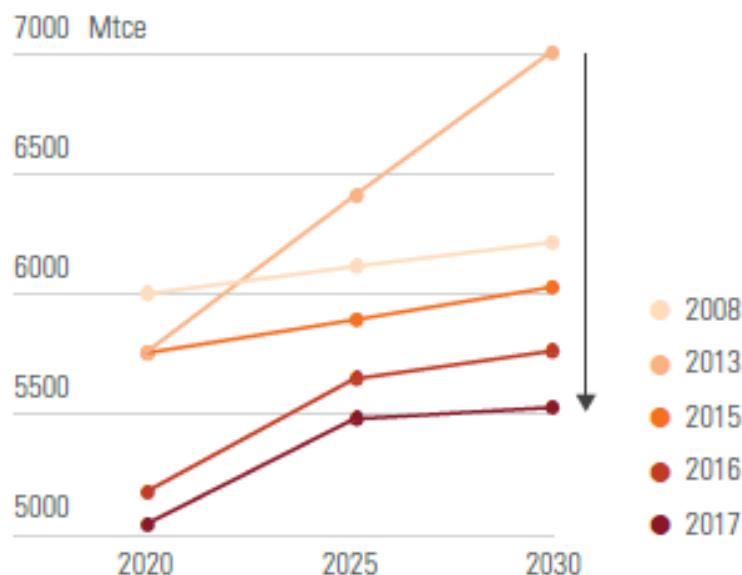
Trends in coal consumption forecasts underscores downside risks for the sector

Figure 4. IEA WEO global coal demand forecasts evolution (Current Policies Scenarios)



Source: IDDRI, based on forecast data from IEA WEO reports.

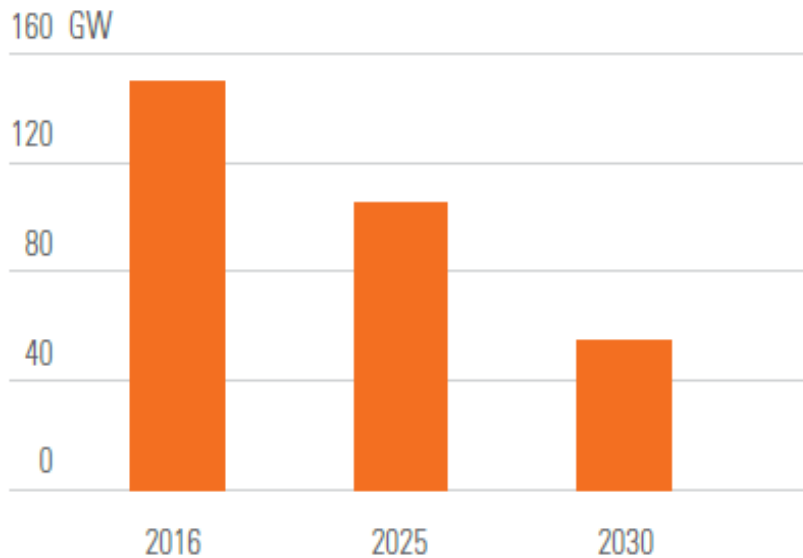
Figure 5. IEA WEO global coal demand forecasts evolution (New Policies Scenarios)



Note: Figures here are in Mtce rather than Mtpa as above.

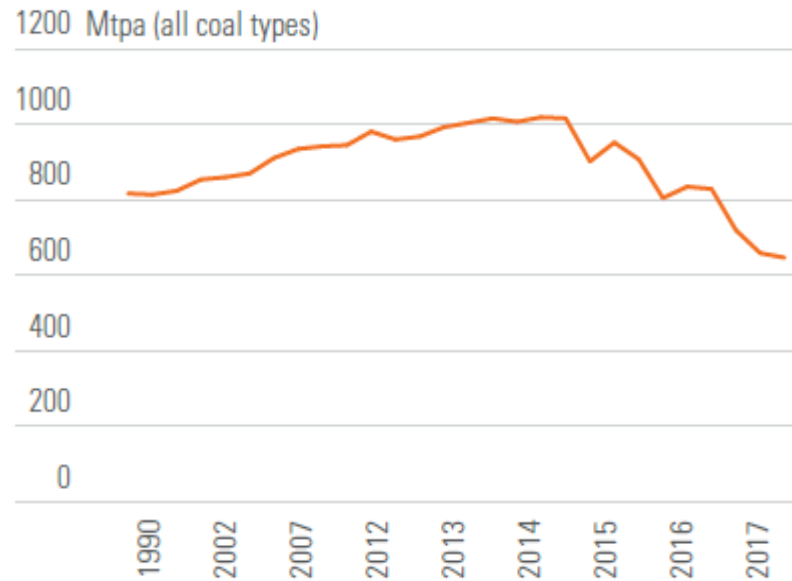
Forecasts for coal consumption out to 2030 have consistently been revised downwards due to underlying structural trends moving against coal...

Figure 12. EU JRC's Forecast of Total Coal-fired power capacity in Europe to 2030



Source: IDDRI, based data from JRC, 2018.

Figure 16. US Coal Consumption is declining rapidly



Source: Enerdata.

China (~50% of global demand) has placed a cap on coal consumption. A range of policies being implemented that will likely lead to declining consumption during next 10 years.

India has been expanding coal production and generation, but from 2020 net new investment will cease. Goal for 175 GW of renewables by 2022

2017: 36 governments and over 50 companies sign on to Powering Past Coal Alliance - pledge to phase out coal by 2030 or earlier.

2018: Spanish government reached deal with workers unions and regional governments of 4 coal mining regions to exit domestic coal mining

2018/19: EU has agreed on Clean Energy Package

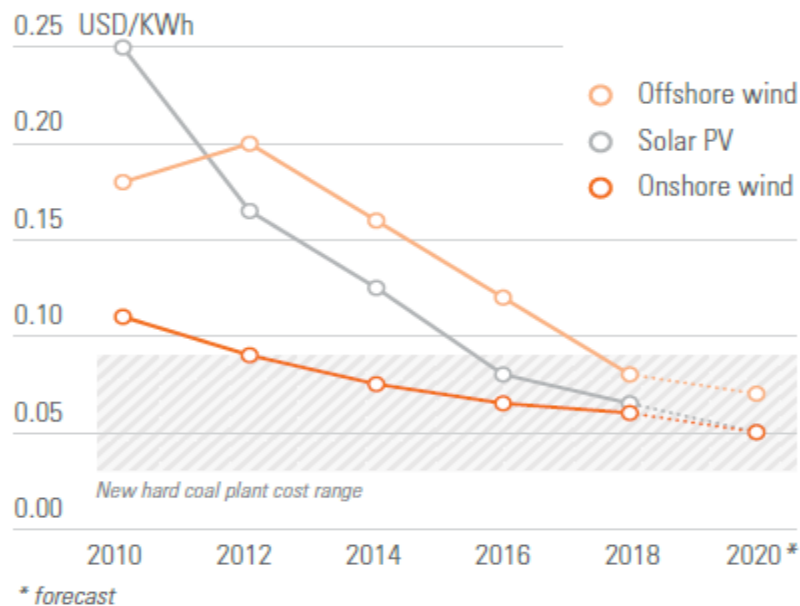
Jan 2019: Germany (5th largest coal consumer in the world) found compromise between stakeholders to phase out coal by 2035-2038.

Feb 2019: Glencore miner in AU, CO, ZA, announces cap on global coal production – part of strategy to limit exposure to coal and diversify..

Feb 2019: Key court ruling in NSW (Australia) to block opening of new coal mines for climate change reasons.

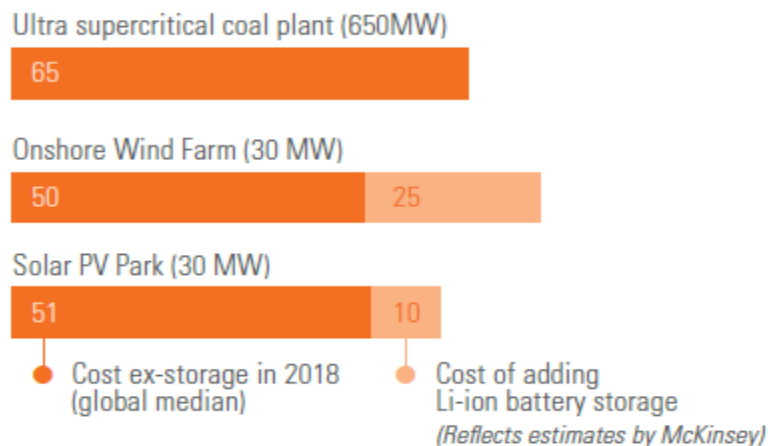
Feb 2019: China limits imports of Australian coking coal equivalent to ~10% of Australian exports of coking coal

Figure 7. The increasing competitiveness of renewable energy with hard coal technologies (global median auction results)



Source: IDDRI, based on data from IRENA, World Coal Association.

Figure 8. Current cost estimates of supercritical coal vs cost of onshore wind and solar PV with Li-ion battery use as capacity firming



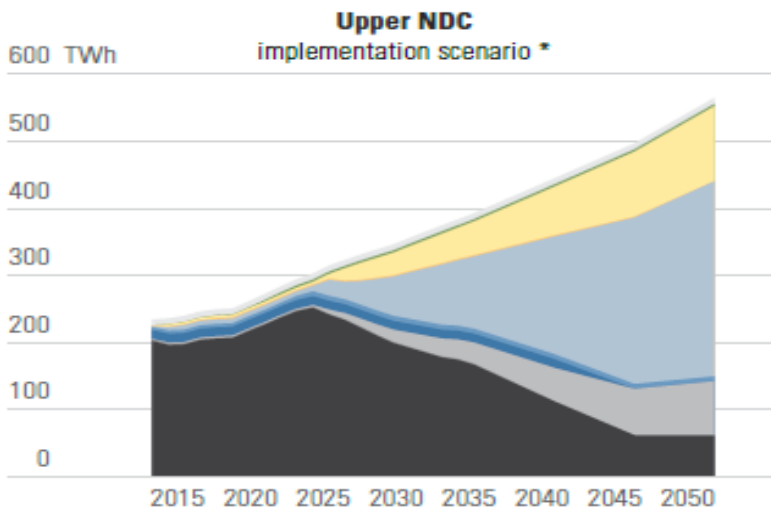
NB. Figures reflect global averages for auctions for different installation sizes and not necessarily represent local costs in all locations, which can be significantly lower (or higher).

Source: IDDRI based on data from IRENA, 2018; McKinsey, 2018.

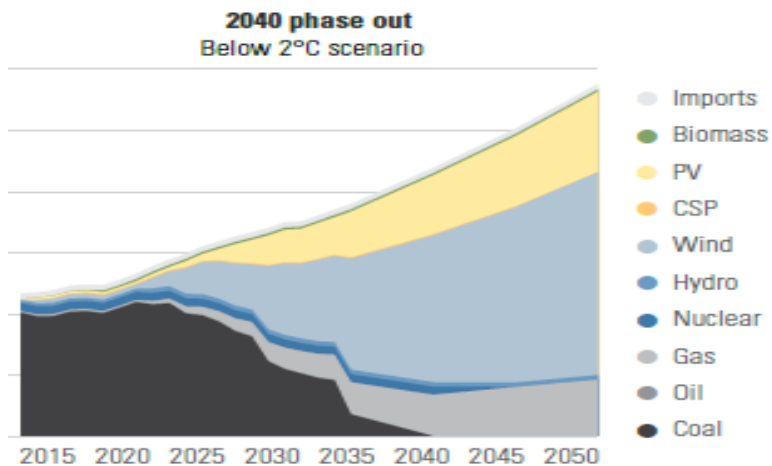
Coal transitions being driven by a number of factors – economics, climate policy, air and water quality concerns, a declining social licence for coal, regulatory risks; etc

Likely to intensify and speed up transition over time.

Figure 17c. South Africa



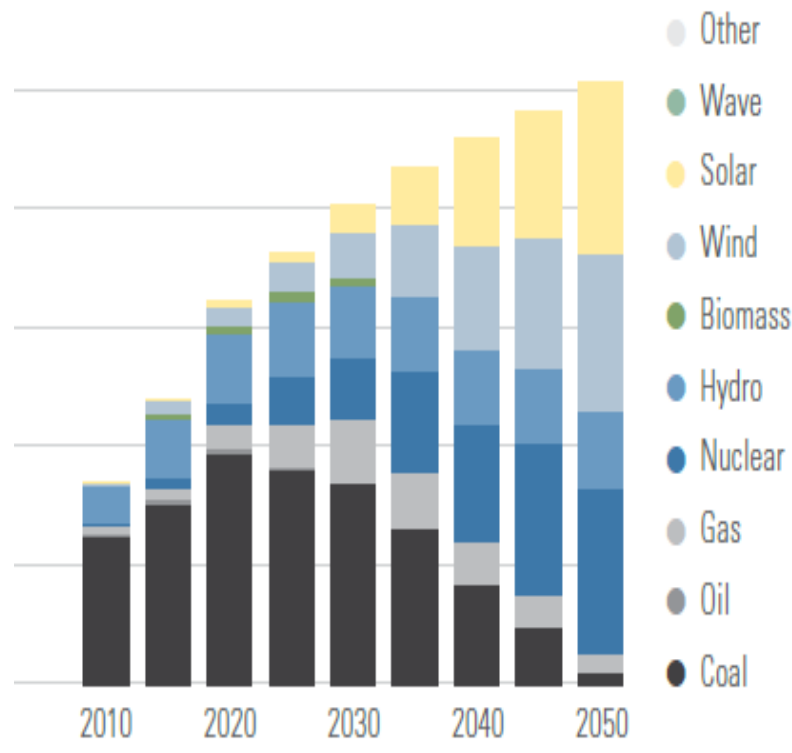
Source: IJ



experts note that the upper range is more consistent with business as usual or reference case

China

with 2025 peaking and progressive decline of emissions



www.coaltransitions.org

Coal transitions have started happening already

The outlook for coal is changing quickly, with large downside risks for major exporters

Coal transitions are driven by climate and non-climate policy factors that will tend to intensify over next decade and beyond,

Stakeholders can manage these changes, but need to use limited available time to start their own transition process now.

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CONTACT

oliver.sartor@iddri.org

IDDRI.ORG