

# Integration of EU and Ukraine Energy Markets – Scenarios for Coal Sector Developments in Ukraine

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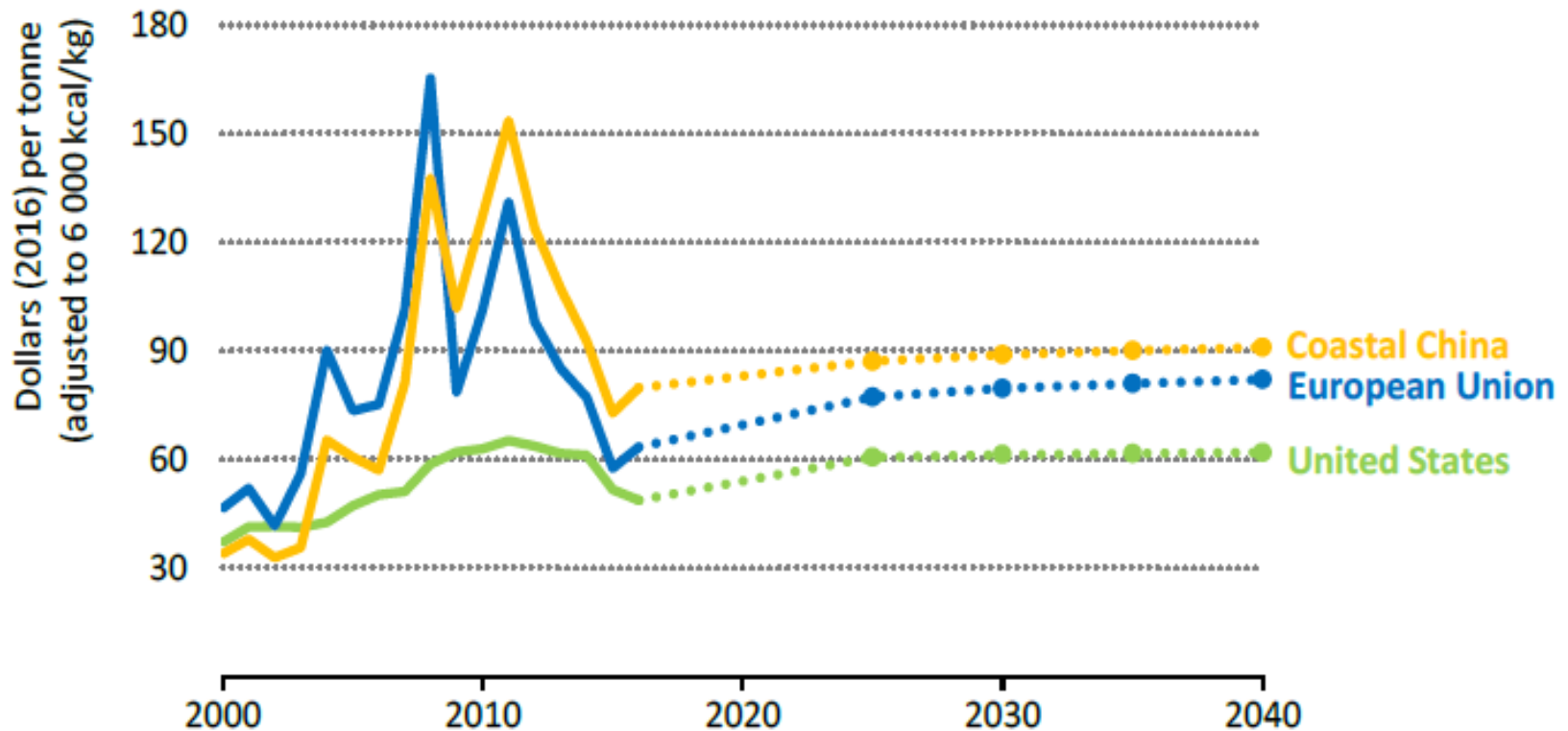
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# Global Coal Market

Evolution of international coal prices (€/ton)

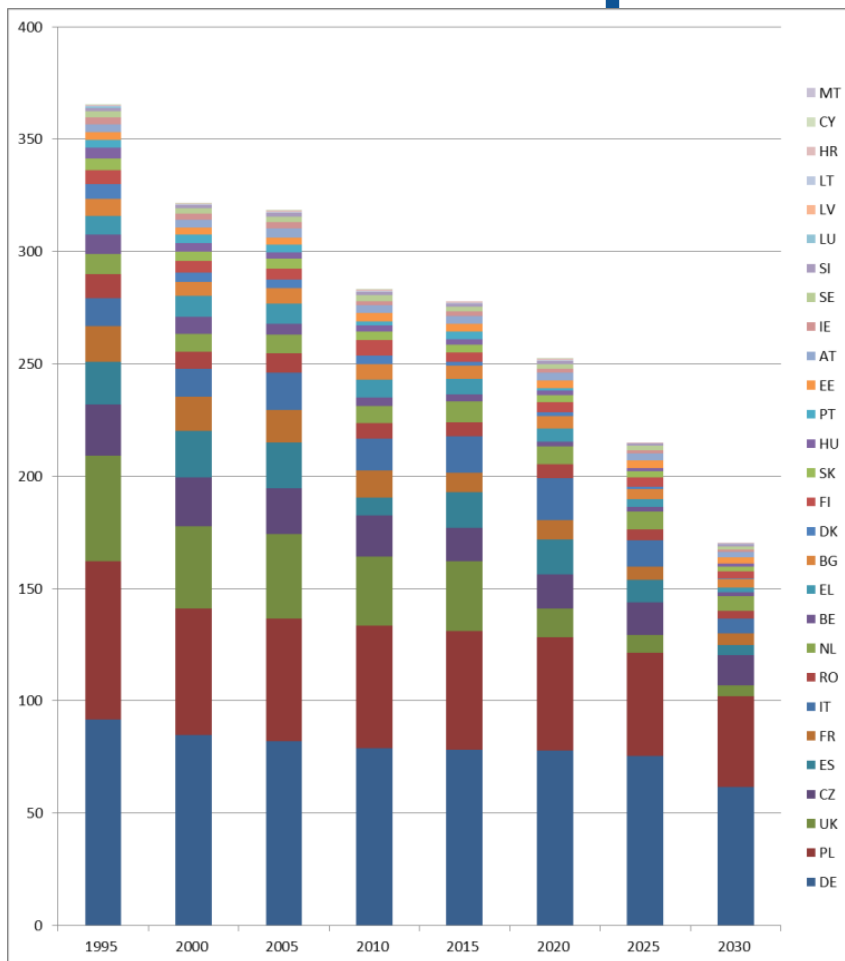


# Coal Prices to Remain Stable



Steam coal price projections (\$/ton) - Source: IEA WEO 2017 (New policies scenario)

# Coal Consumption in the EU



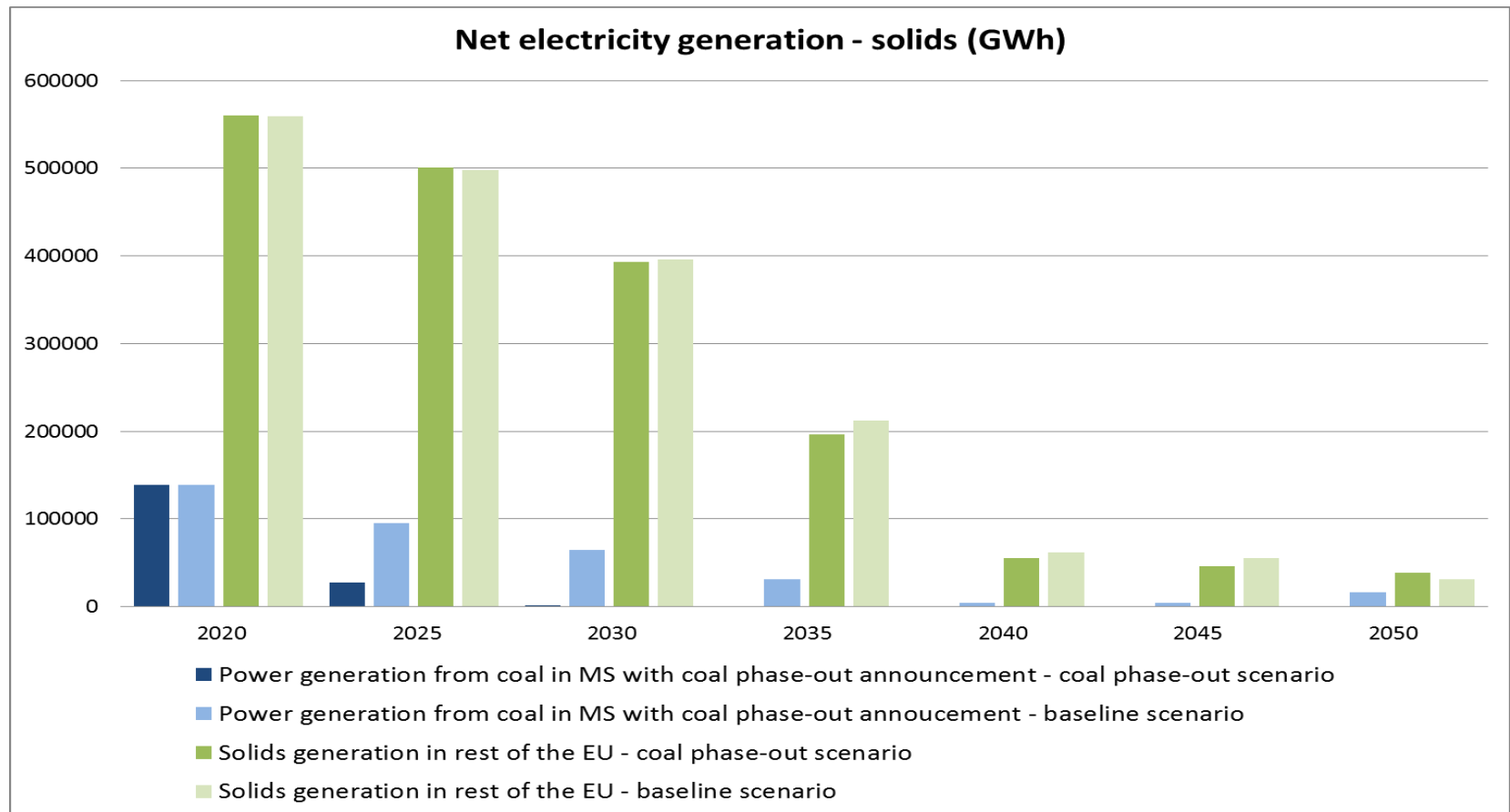
EU and Member States  
projections of overall coal  
consumption (Mtoe) - Source:  
PRIMES EUCO30 scenario

# Additional Coal Phase-Out Decisions

- France (by 2022),
- Italy (by 2025)
- UK (by 2025),
- Finland (by 2030, potentially 2025)
- Netherlands (by 2030)
- Portugal (by 2030),
- Sweden (utilities by 2022)
- Austria (utilities by 2025)
- Belgium (as of today)
- Denmark (by 2030)

# Accelerating Trend in the EU

Impacts of coal phase-out announcement on power generation from solids

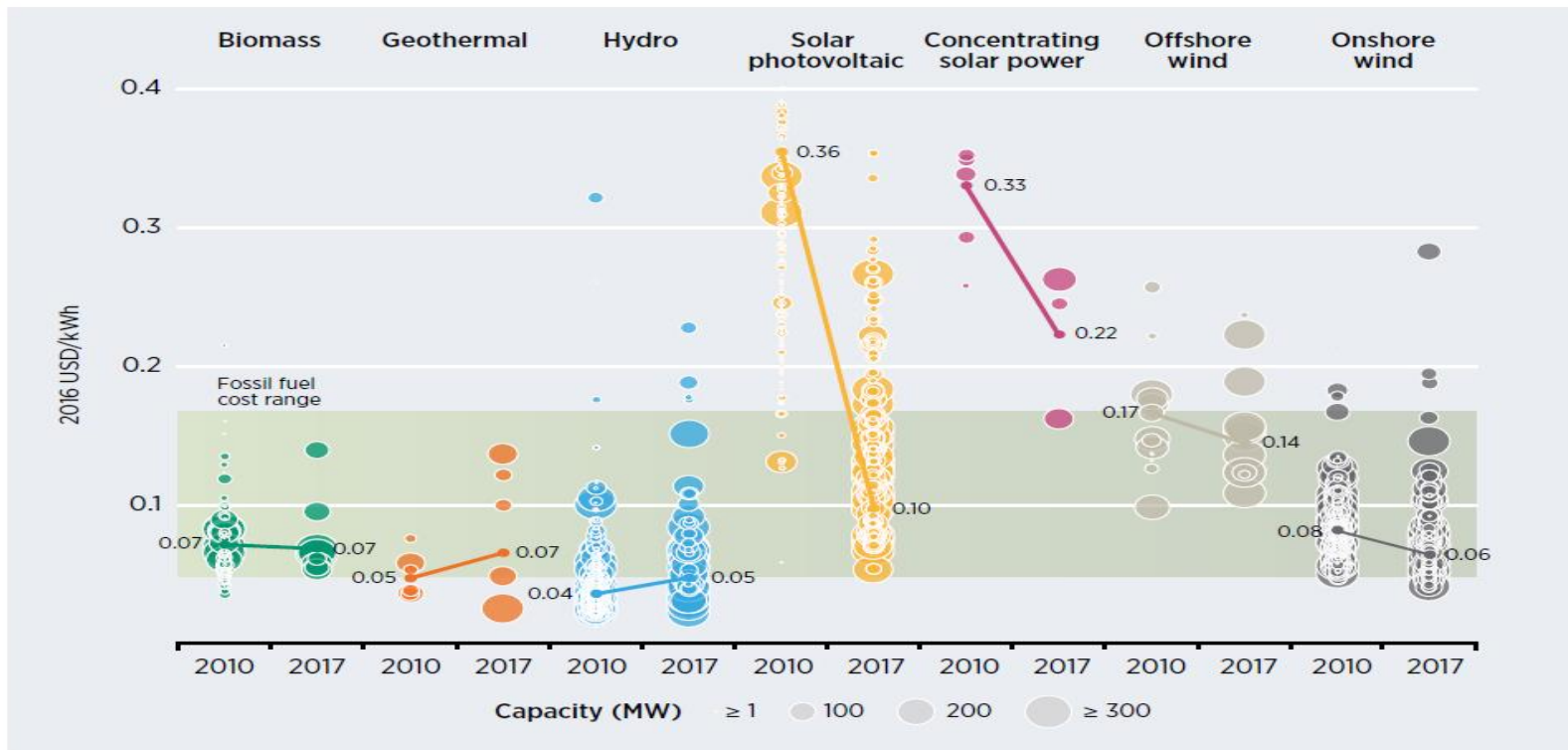


# Markets for Ukraine's Coal

- **Ukrainian coal** mostly for **domestic market** (largely due to war in Donbas Ukraine has turned into net-importer, high sulfur content)
- Main **consumer**: thermal **power plants**
- **No thermal power plant built over some 30 years!**
  - Low efficiency, old equipment → high electricity cost
  - Not optimized to follow increasingly steep load curve (less base load from industry, more electric equipment in households, more renewables)
  - Need to meet air quality standards (investments needed)
- **No announcements yet of new, modern coal-fired power plants** (check e.g. [https://dtek.com/en/investors\\_and\\_partners/reports/](https://dtek.com/en/investors_and_partners/reports/))
- **Capacity and grid reserves**: New role for coal-fired power plants?

# Cost of Competitors - Renewables

**Figure ES.1** Global levelised cost of electricity from utility-scale renewable power generation technologies, 2010-2017



Source: IRENA Renewable Cost Database.

Note: The diameter of the circle represents the size of the project, with its centre the value for the cost of each project on the Y axis. The thick lines are the global weighted average LCOE value for plants commissioned in each year. Real weighted average cost of capital is 7.5% for OECD countries and China and 10% for the rest of the world. The band represents the fossil fuel-fired power generation cost range.



# Success Factors for Ukraine's Coal

- Recognise **long-term trends** (International Energy Agency)
- Invest in keeping **coal production efficient**, leading to lower prices than "Rotterdam+" (social acceptance)
- Profit from international experience and support for **transition of coal mining regions** (e.g. with EU) – missed opportunities so far
- Develop **long-term, non-politicized programme** to finance transition and closure of ineffective facilities ("Kohlepfennig" in Germany)
- Agree on **realistic** role and quantity of new, **modern coal-fired power plants**
- Ensure **environmental stability**, e.g. pumping at closed or abandoned mines, in particular in Donbas

# Thank you for your attention

<https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/coal-and-other-solid-fuels>