Energy Union – coal’s role in the EU’s planned shift to renewables

Dr Wolfgang CIESLIK
EURACOAL President
EURACOAL: 33 members from 18 countries

- DEBRIV – Deutsche Braunkohlen-Industrie-Verein (DEU)
- GVSt – Gesamtverband Steinkohle (DEU)
- MMI – Mini Maritza Istok (BGR)
- PPC – Public Power Corporation (GRC)
- PPWB – Confederation of Polish Lignite Producers (POL)
- ZSDNP – Czech Confederation of Coal and Oil Producers (CZE)
- APFCR – Coal Producers and Suppliers Association of Romania (ROU)
- BRGM – French Geological Survey (FRA)
- CARBUNIÓN – Federation of Spanish Coal Producers (ESP)
- CoallmP – Association of UK Coal Importers and Producers (GBR)
- DTEK (UKR)
- EPS – Electric Power Industry of Serbia (SRB)
- GIPH – Mining Chamber of Industry and Commerce (POL)
- GIG – Central Mining Research Institute (POL)
- HBP – Hornonitrianske bane Prievidza (SVK)
- Lubelski Węgiel „Bogdanka” SA (POL)
- Chemical Process and Energy Resources Institute (CERTH/CPERI) (GRC)
- Borsod-Abaúj-Zemplén County Government (HUN)
- PATROMIN - Asociația Patronală Minieră din România (ROU)
- Premogovnik Velenje (SVN)
- RMU “Banovići” d.d. (BIH)
- TKI – Turkish Coal Enterprises (TUR)
- Ukrvuglerobotodavtsy – All-Ukrainian Coal Employer’s Association (UKR)
- VDKi – Verein der Kohlenimporteure (DEU)
- EMAG Institute of Innovative Technologies (POL)
- Finnish Coal Info (FIN)
- Golder Associates (GBR)
- Geocontrol (ESP)
- ISSeP – Institut Scientifique de Service Public (BEL)
- KOMAG Institute of Mining Technology (POL)
- SUBTERRA Ingeniería (ESP)
- Trolex Ltd (GBR)
- University of Nottingham (GBR)
Russia, 29.1%
Colombia, 21.4%
United States, 20.8%
South Africa, 10.0%
Australia, 6.3%
Indonesia, 3.5%
Canada, 2.5%
Ukraine, 1.4%
Norway, 0.7%
Kazakhstan, 0.4%
Mozambique, 0.3%
Chile, 0.2%
Venezuela, 0.1%
China, 0.1%

Note: the source country of 3.0% of coal imports is not specified in customs data.
Share of coal in EU electricity, 2014

- coal: 26.4%
- oil: 1.8%
- gas: 14.3%
- nuclear: 27.5%
- hydro (exc.pumped): 12.7%
- other: 17.3%

EU average = 26.4%

Source: Eurostat database nrg_105a last update 28.01.2016 (*includes peat)
The future of lignite mining in Germany

10 Thesen zur Zukunft der Kohle bis 2040

Comment on Environmental Policy
June 2015
No. 14
PARIS CLIMAT 2015
Pour tout changer, nous avons besoin de tous.
fossil fuels – especially coal, but also oil and, to a lesser degree, gas – needs to be progressively replaced without delay.

Laudato si’, on the care of our common home

Francisco

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2030 proposals – some good points, some bad

1. A 40% GHG reduction target c.f. 1990 with no further “conditional” targets offered at international negotiations

2. ETS allowance cap to shrink by 2.2% each year from 2021 (c.f. 1.74% now)

3. A 27% EU-wide binding target for renewable energy in final energy consumption

4. A new market stability reserve for the ETS from 2021 (Phase IV) – from 2019 after revision

5. Carbon leakage protection to continue. Innovation Fund and Modernisation Fund

6. Indicators for energy price competitiveness and energy security
Two systems, one task: balancing renewables

In 2013, German electricity demand was met by two systems: a reliable thermal one, mainly based on coal, and a new renewables one.

The 71 GW installed capacity of wind and solar was never able to supply more than 35 GW in 2013 and fell to just 0.1 GW on some nights. (AGEE-Stat / BDEW)

To keep the lights on when there is no wind or solar power, requires reliable thermal power generation based on fossil fuels.
Net electricity generation in Germany

Sources: Destatis, EEX transparency platform, BDEW, Thomson Reuters, own calculations, Status: 11.10.2016
Hourly electricity generation of conventional power plants in 2015

Sources: Destatis, EEX transparency platform, own calculations
Flexibility is needed to balance renewables.

**BoA 1 to 3**
- Maximum load: ~ 1,000 MW
- Minimum load: ~ 500 MW
- Maximum ramp rate: +/- 30 MW/min

**Gas-fired CCGT at Lingen**
- Maximum load: ~ 2 × 400 MW
- Minimum load: ~ 520*/260** MW
- Maximum ramp rate: +/- 32 MW/min

**BoAplus**
- Maximum load: ~ 2 × 550 MW
- Minimum load: ~ 350*/175** MW
- Maximum ramp rate: +/- 30 MW/min

* 2 boilers operating
** 1 boiler operating

Coal-fired power plants match the flexibility of gas-fired power plants.

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New coal-fired power plants in the Netherlands

- Engie (GDF Suez, Electrabel) Maasvlakte (Rotterdam) 800 MW
- Uniper (Eon) Maasvlakte 3 (Rotterdam) 1116 MW
- RWE Eemshaven (Groningen) 1560 MW
Thank you!

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