

# EURACOAL

European Association  
for Coal and Lignite



*“Coal and lignite in a new energy mix to 2030 and beyond”*

*at a*

*Social Policy Dialogue*

*on the*

***“NEW ENERGY MIX”***

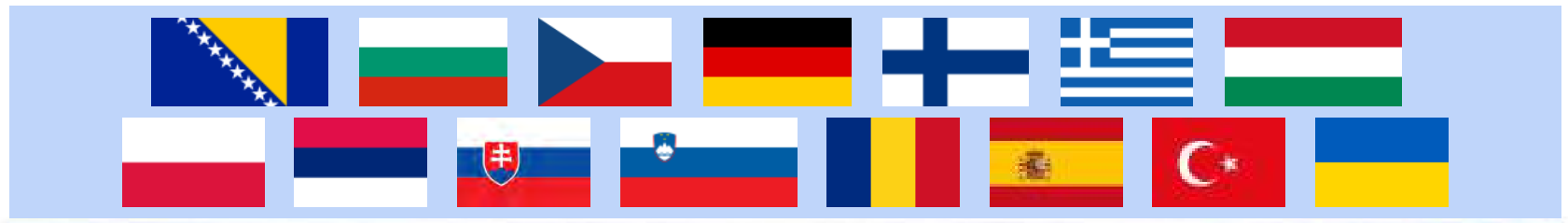
*transition towards low-carbon economy in Stara Zagora District*

Zahariy Knyazheski Library  
Stara Zagora  
Bulgaria

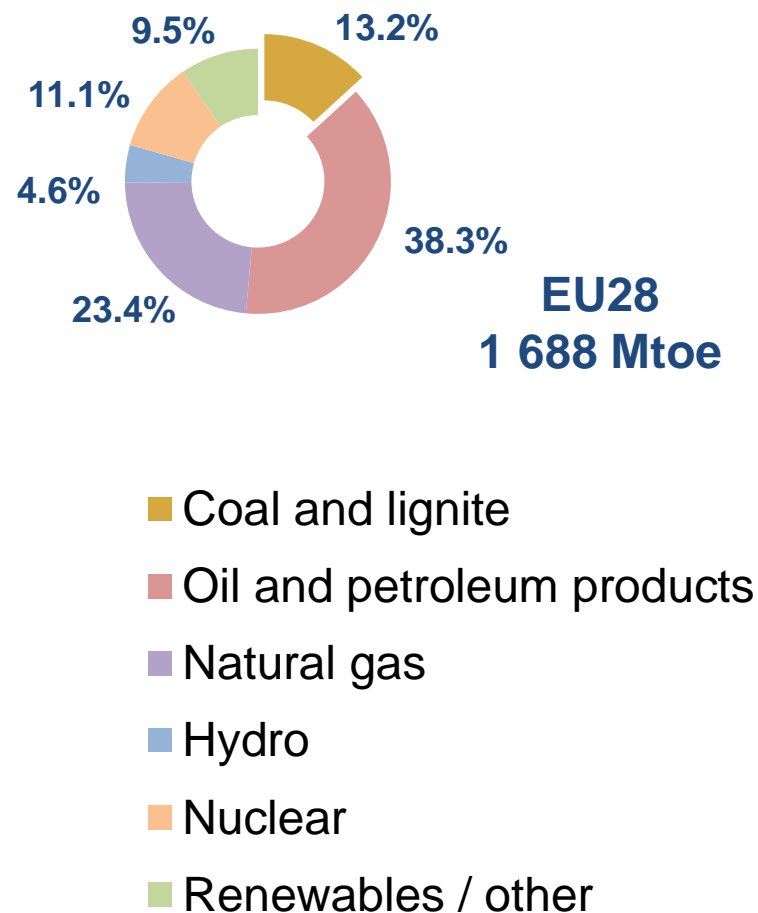
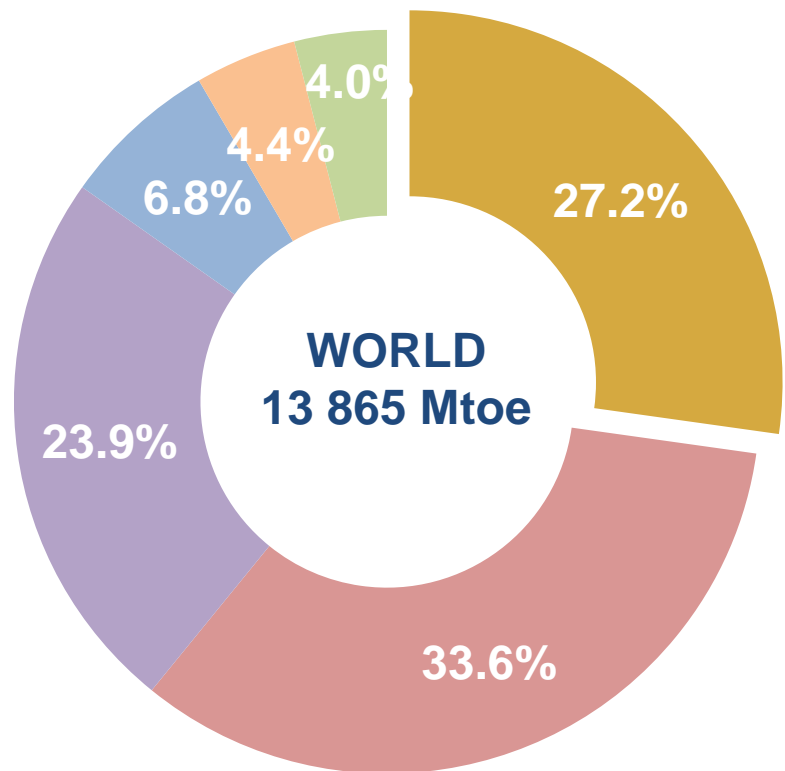
Brian Ricketts  
Secretary General  
28 September 2020

# EURACOAL: 26 members and observers

- DEBRIV – Deutsche Braunkohlen-Industrie-Verein (DEU)
- GVSt – Gesamtverband Steinkohle (DEU)
- MMI – Mini Maritza Istok (BGR) - observer
- PGG – Polska Grupa Górnicza S.A. (POL)
- PPC – Public Power Corporation (GRC)
- PPWB – Confederation of Polish Lignite Producers (POL)
- ZSDNP – Czech Confederation of Coal and Oil Producers (CZE)
- BAZ – Borsod-Abaúj-Zemplén County Government (HUN)
- GIPH – Górnicza Izba Przemysłowo-Handlowa (POL)
- PATROMIN – Asociația Patronală Minieră din Romania (ROU)
- VDKi – Verein der Kohlenimporteure (DEU)
- CPERI/CERTH – Chemical Process and Energy Resources Institute (GRC)
- DTEK (UKR)
- Donetsksteel (UKR)
- EPS – Electric Power Industry of Serbia (SRB)
- GIG – Central Mining Research Institute (POL)
- HBP – Hornonitrianske bane Prievidza (SVK)
- Lubelski Węgiel „Bogdanka” S.A. (POL)
- Premogovnik Velenje (SVN)
- RMU “Banovići” d.d. (BIH)
- TKI – Turkish Coal Enterprises (TUR) – observer
- KOMAG Institute of Mining Technology (POL)
- Geocontrol S.A. (ESP)
- Subterra Ingeniería S.L. (ESP)
- DMT GmbH & Co. KG (DEU)



# Coal in world and EU energy supply, 2018



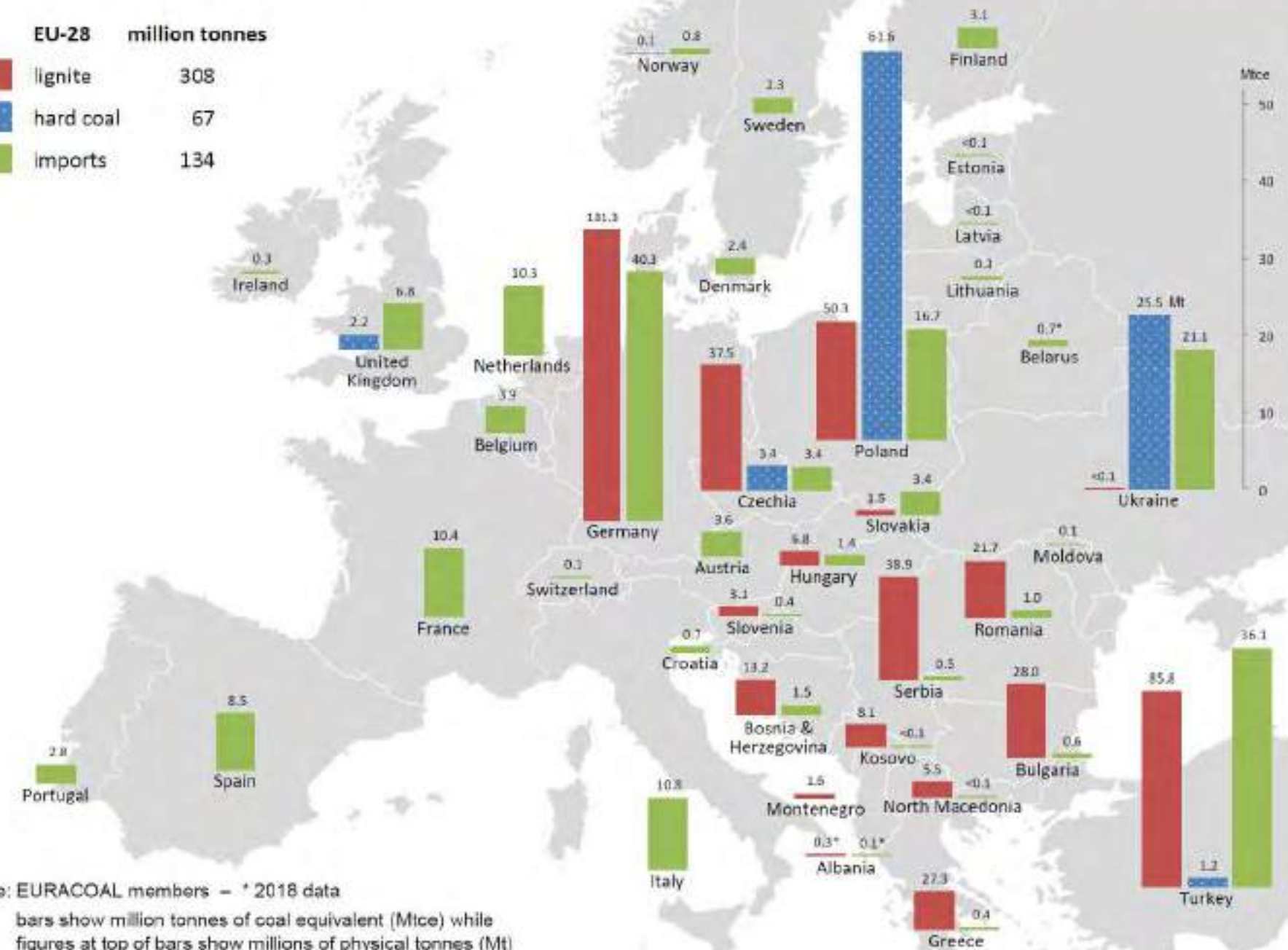
Source: BP Statistical Review of World Energy 2019, BP plc, London, June

>96% from conventional sources in 2018. Coal use forecast to be flat to 2040.

## Coal in Europe 2019

lignite production, hard coal production & imports

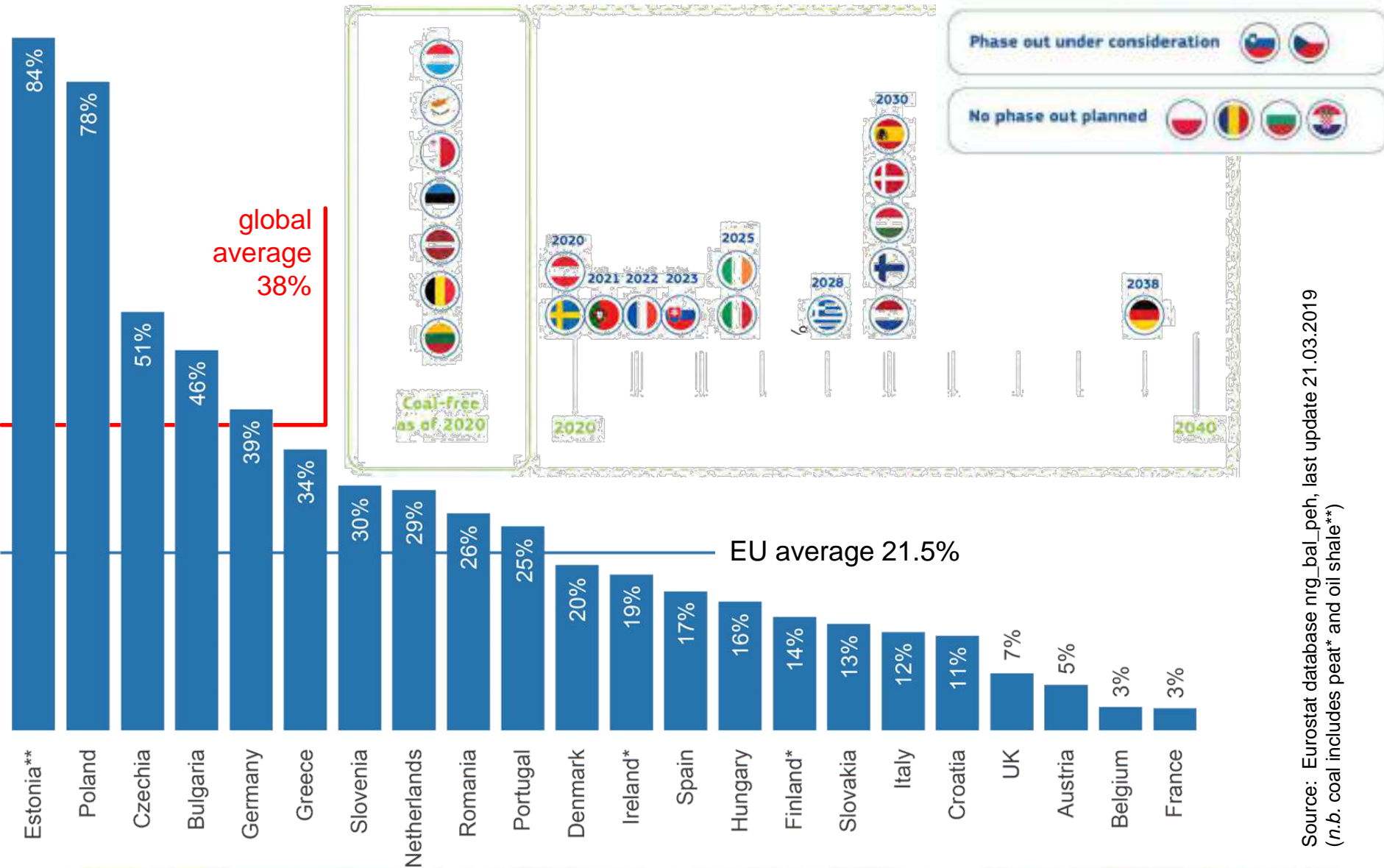
EU-28	million tonnes
lignite	308
hard coal	67
imports	134



Source: EURACOAL members – \* 2018 data

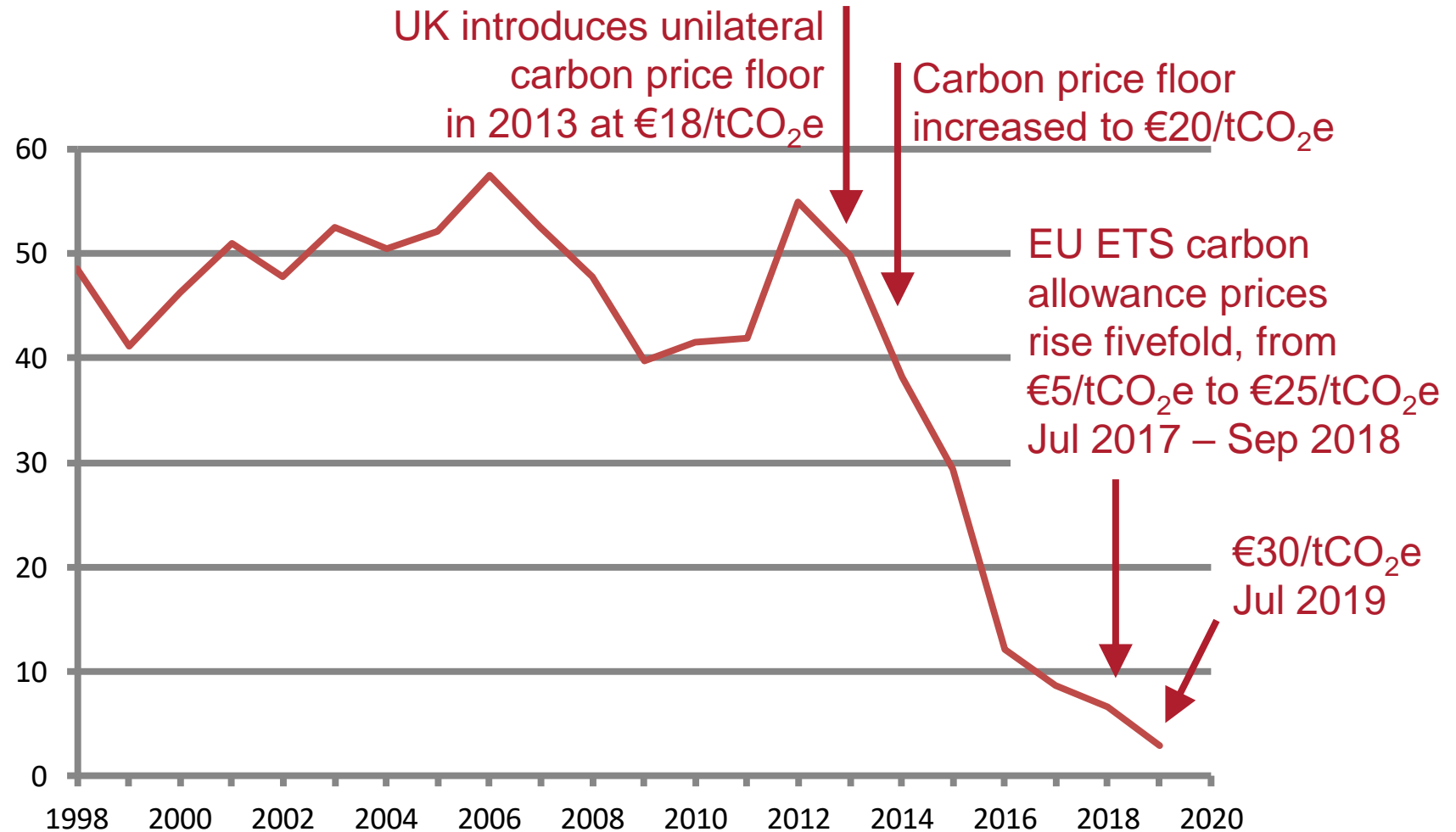
Note: bars show million tonnes of coal equivalent (Mtce) while figures at top of bars show millions of physical tonnes (Mt)

# Coal in EU electricity generation, 2017



Source: Eurostat database nrg\_bal\_peh, last update 21.03.2019  
(n.b. coal includes peat\* and oil shale\*\*)

# Coal use for power generation in UK, 1998-2019



A carbon price (traded allowances or taxes) does not encourage CCS; it simply drives fuel switching from coal to natural gas.

# Is Nord Stream 2 also a threat to coal?



# EU energy reserves

	Gtce	share
Hard coal	20.6	51.0%
Lignite	16.4	40.5%
Oil	1.4	3.5%
Fossil gas	1.7	4.2%
Uranium	0.3	0.8%
Total	40.5	100.0%

Source: BGR (Bundesanstalt für Geowissenschaften und Rohstoffe – Federal Institute for Geosciences and Natural Resources) (2019), *Energy Study 2018 – data and developments concerning German and global energy supplies*, 22, Hannover, Germany, August.

Coal and lignite in the EU: 92% of energy reserves and 95% of resources.



# Hard coal in Europe ...

Three EU Member States mine hard coal: Czech Republic, Poland and Romania. Ukraine is a big producer and Norway, Turkey and the UK small ones.



photo: NTRES REUTERS / Srdjan Zivulovic



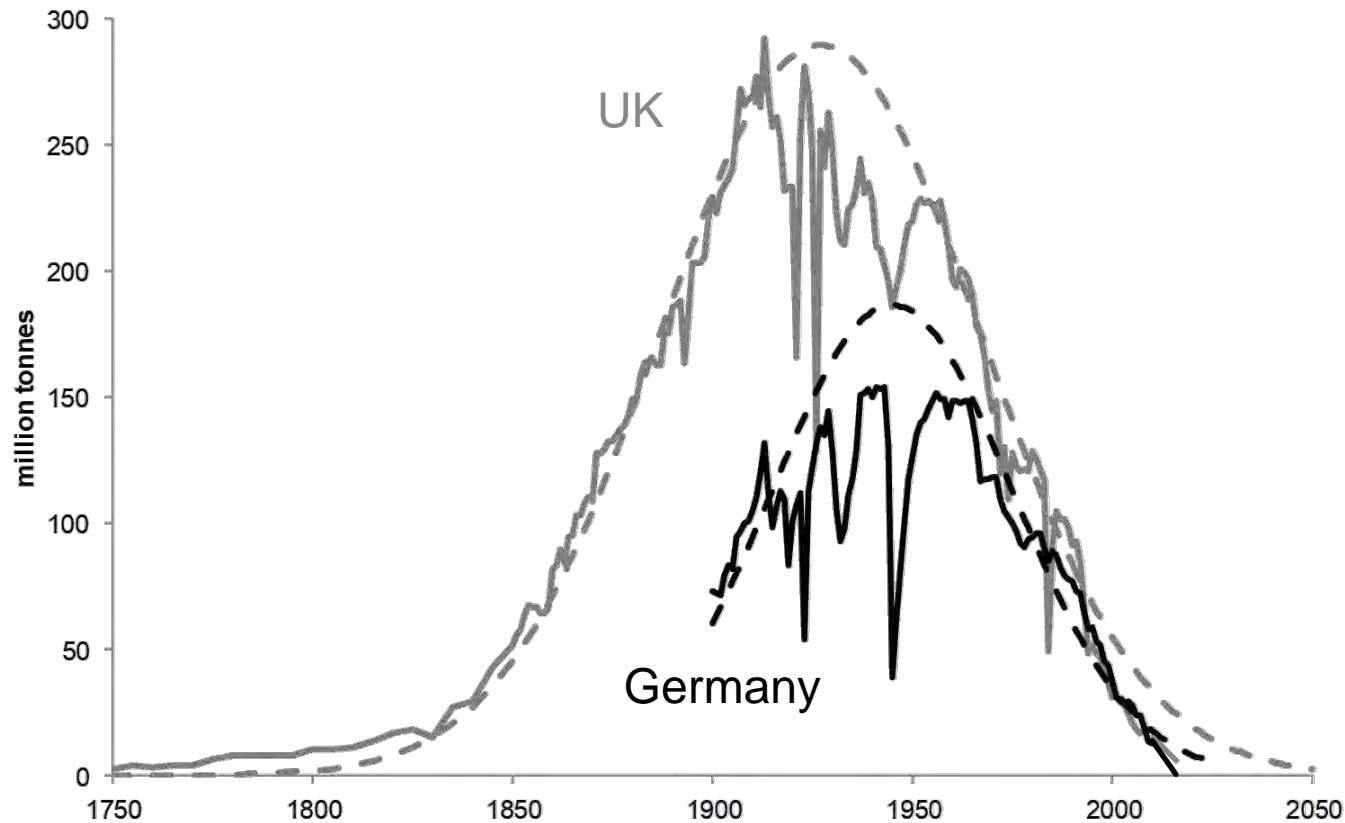
photo courtesy of LW „BOGDANKA” SA

Lubelski Węgiel „BOGDANKA” S.A. has set a world production record from a face at the company’s mine near Lublin in east Poland and is one of the world’s most productive deep mines.

67 million tonnes of hard coal were mined in 2019, but demand was 200 Mt.

# UK and German hard coal production to 2019

## logistic distributions?



Hard coal production from deep mines in Europe is not cost competitive with open cut coal production in Russia and the USA.

## ... and brown coal or lignite

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Nine EU Member States exploit lignite as a competitive fuel for power generation: Bulgaria, the Czech Republic, Germany, Greece, Hungary, Poland, Slovakia, Slovenia and Romania. Several countries in South East Europe and Turkey are also big lignite producers.

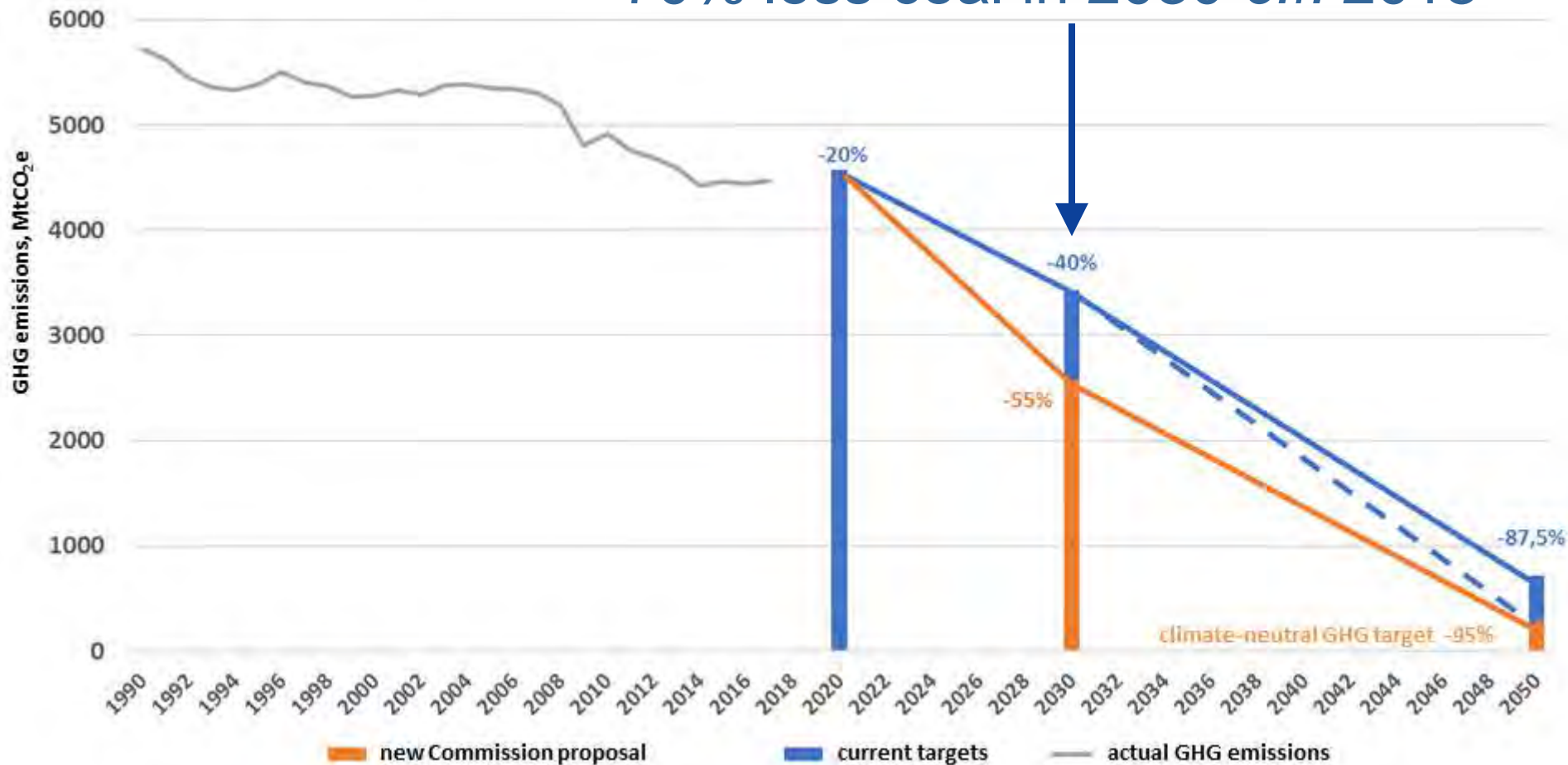
# EU political aim is to “decarbonise” society.

- *European Green Deal*, outlined to European Parliament in July 2019 and announced in more detail in December 2019, is not yet enacted, but now dominates the thinking, actions and proposals of the European Commission and is widely supported.
- Climate Emergency, so “climate neutrality by 2050” or earlier.
- *Ende Gelände!* Coal Exit! But not in the rest of the world (7 Gt/year).
- Growing number of phase outs in EU, including the biggest – DE.
- Industry responding positively:
  - BusinessEurope: fully committed to invest € billions in low-carbon technology development & deployment
  - EURACOAL: *“EU coal & lignite industry stands to achieve climate goals set out in the UNFCCC Paris Agreement”*
  - Eurofer (EU steel): promises steelmaking with hydrogen and electricity
  - Cembureau (EU cement): 80% subject to technological prerequisites
  - BDI (DE industry): 80% technically feasible & macroeconomically viable
  - VCI (DE chemicals): *Wir schaffen das*: DECHEMA / FutureCamp study

We might be able to live without coal, but not without carbon!

# EU climate targets for 2030 and 2050

70% less coal in 2030 c.f. 2015



GHG emission reduction over the 10 years from now to 2030 is much greater than (c.2×) reduction over the 30 years 1990-2020.

# European Green Deal – proposals by June 2021

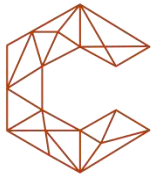
- **EU Emissions Trading System** – to cover maritime and potentially road transport, buildings and all fossil fuel use, and an **upward revision of the 2.2% annual Linear Reduction Factor**,
- Effort Sharing Regulation – member state targets will be **revised in line with changes to the EU ETS**,
- Land Use, Land Use Change and Forestry (LULUCF) Regulation – setting minimum requirements,
- Energy Efficiency Directive,
- Renewable Energy Directive,
- CO<sub>2</sub> Emissions Performance Standards for Cars and Vans Regulation, and
- guidance on energy poverty indicators, building on the work of the EU Energy Poverty Observatory.

At the same time, the Zero Pollution Ambition for air, water and soil could mean revisions to the IED and WFD.

# A just energy transition with support for new technologies

EURACOAL

European Association  
for Coal and Lignite  
ASSL



IEA  
CLEAN COAL CENTRE



CERTH  
CENTRE FOR  
RESEARCH & TECHNOLOGY  
HELLAS

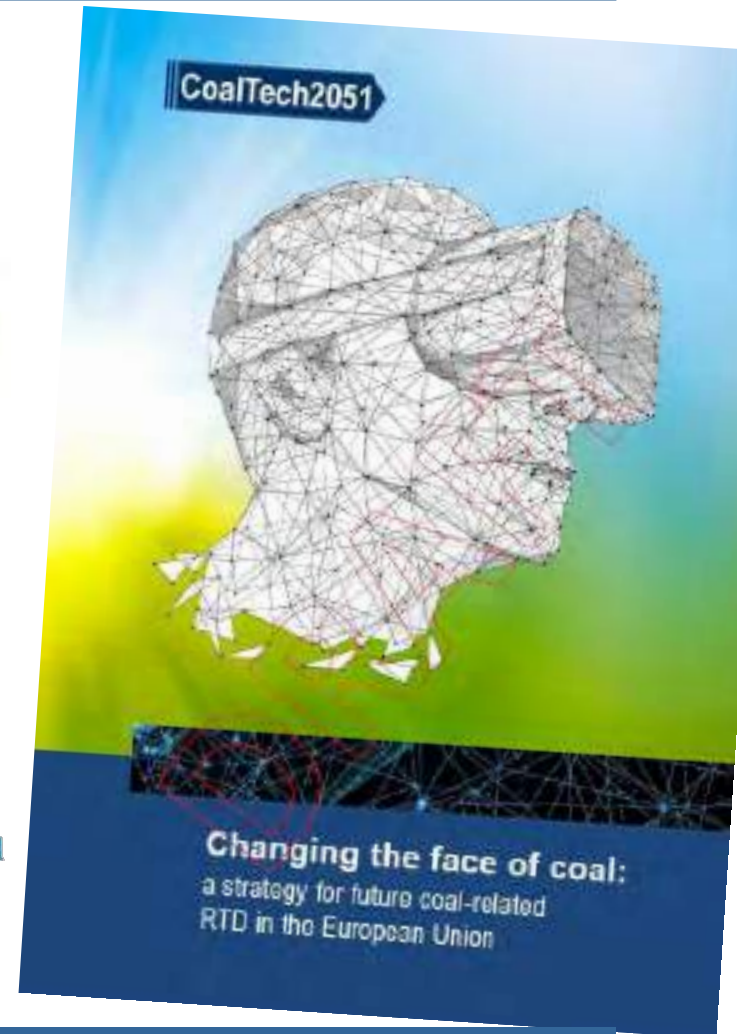
GIG Research Institute 95 years

A two-pronged strategic research agenda for coal R&D:

- coal-related research in support of EU policy objectives;
- coal-related research with an international outlook



Research Fund  
for Coal & Steel



The CoalTech2051 project has received funding from the Research Fund for Coal and Steel under grant agreement No. 794369.

# Coal-related research in support of EU policy

- Improving health and safety

ISSA mining section VISION ZERO

- Minimising the environmental impacts of coal mines in transition

methane control, managing mining waste, coal ash in construction, land reclamation and for rare earths, mine drainage, post-mining opportunities and challenges, avoiding subsidence damage



An immersive experience of work in a coal mine via virtual reality using WorksiteVR™



Fish farming at Handlová coal mine in Slovakia



CFOAM® material systems replace conventional building and insulation materials and X-MAT prototype first-generation X-TILE™

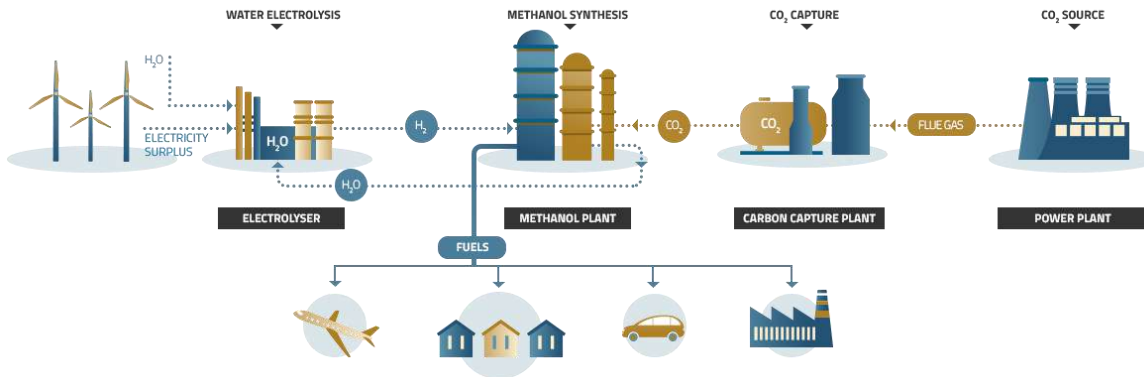
- Supporting the just transition of the coal sector and regions

CCS, energy storage, H<sub>2</sub> production, geothermal energy, non-energy uses of coal/lignite in support of a circular economy, co-firing coal with biomass and conversion of power plants to biomass



# Coal-related research with international outlook

## ■ Coal gasification and the circular economy



Oxygen plant at the Vresová IGCC power plant in the Czech Republic



CO<sub>2</sub> capture plant at the 2 600 MW Brindisi Sud coal-fired power plant operated by ENEL in Italy

## ■ CCS: an opportunity for global deployment

Key to reducing global CO<sub>2</sub> emissions from coal, natural gas and industry.

## ■ Power plant flexibility

“Deep modernisation” of existing coal power plants with state-of-the-art HELE technologies

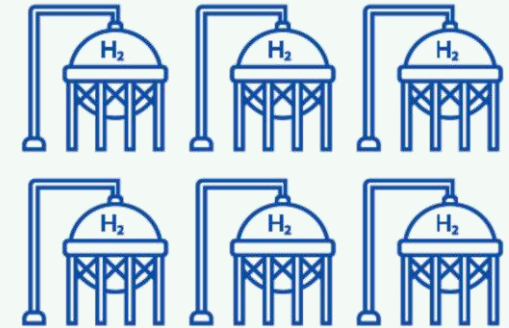
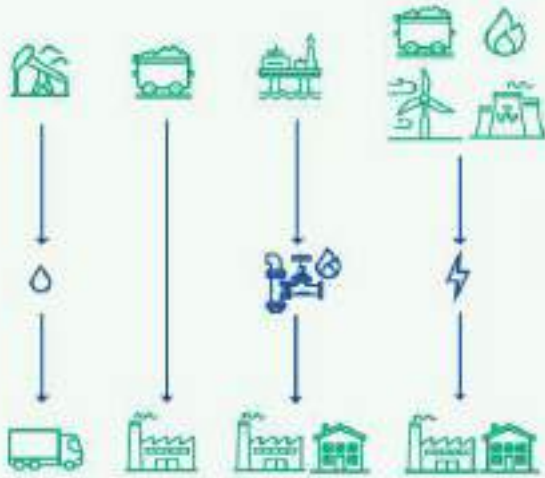
Osaki CoolGen integrated coal gasification fuel cell combined cycle (IGFC) with CO<sub>2</sub> capture demonstration project in Japan



## ■ Clean coal technologies for lower emissions

Coal gasification with fuel cells in Japan boosts efficiency with near-zero emissions.

# EU strategy: step-by-step to hydrogen eco-system



Today – 2024

2025 – 2030

2030 –

## European Clean Hydrogen Alliance

Kick-starting the EU Hydrogen Industry to achieve the EU climate goals



EURACOAL has applied to join the European Clean Hydrogen Alliance.

# Maritsa+ solar PV farm

	Mula Photovoltaic Power Plant, 2020	Maritsa Iztok Complex, 2017	Maritsa+ PV, 2030
capacity, MW	494	3 558	13 200
electricity output, TWh/year	0.75	19.6	20
load factor	17%	63%	17%
capital cost, €bn	0.45	-	<10
€kW	910	-	<760
area, ha	1 088	24 000	29 000

Just Transition Mechanism (and Fund) could be worth €100 billion over next 7 years ... plus the €750 billion recovery plan for Europe.

# Global energy mix, 2017

