

# The status of coal phase-outs in Europe

Coal Regions in Transition Virtual Week

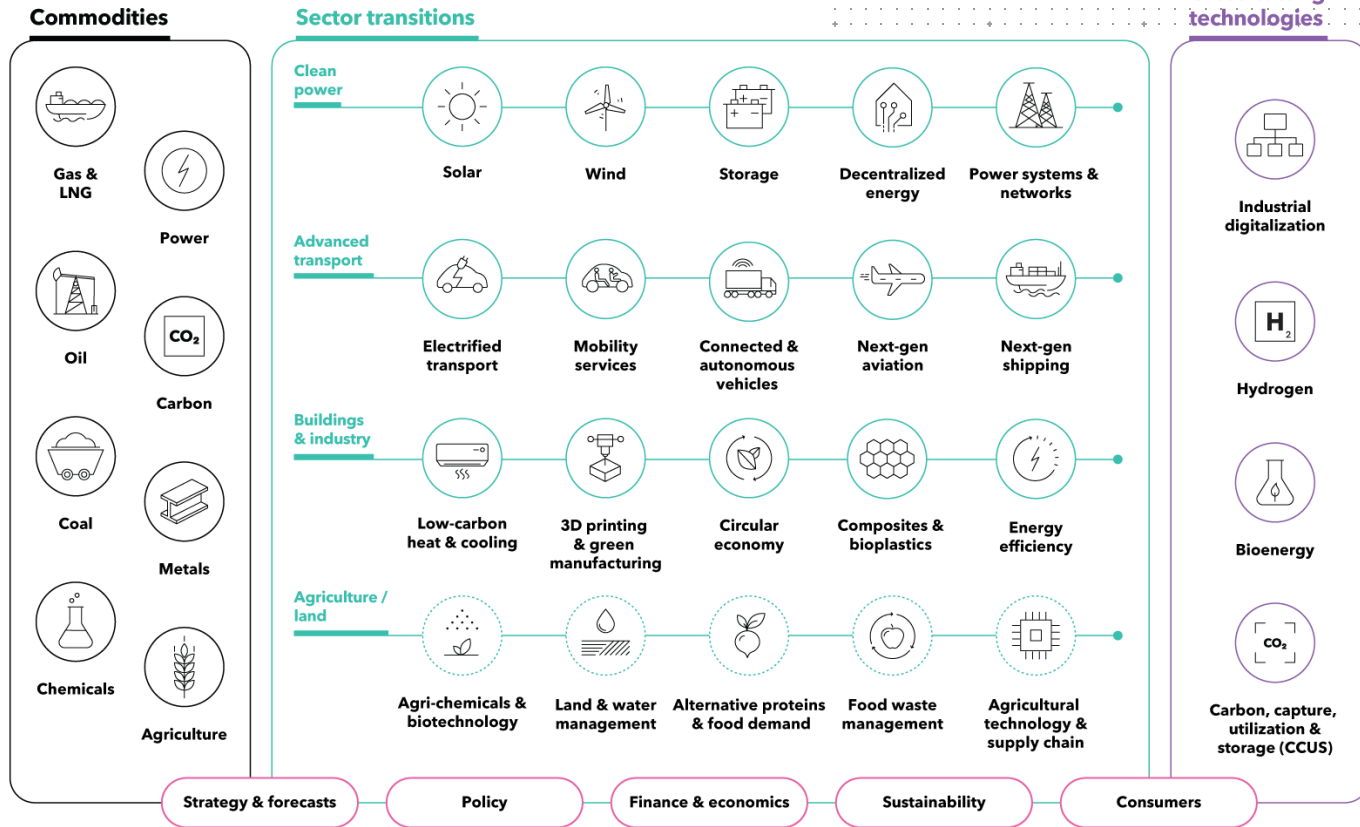
Felicia Aminoff

April 27, 2021



# BNEF coverage

Strategies for a cleaner, more competitive future



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# Status of European coal phase-outs

An overview

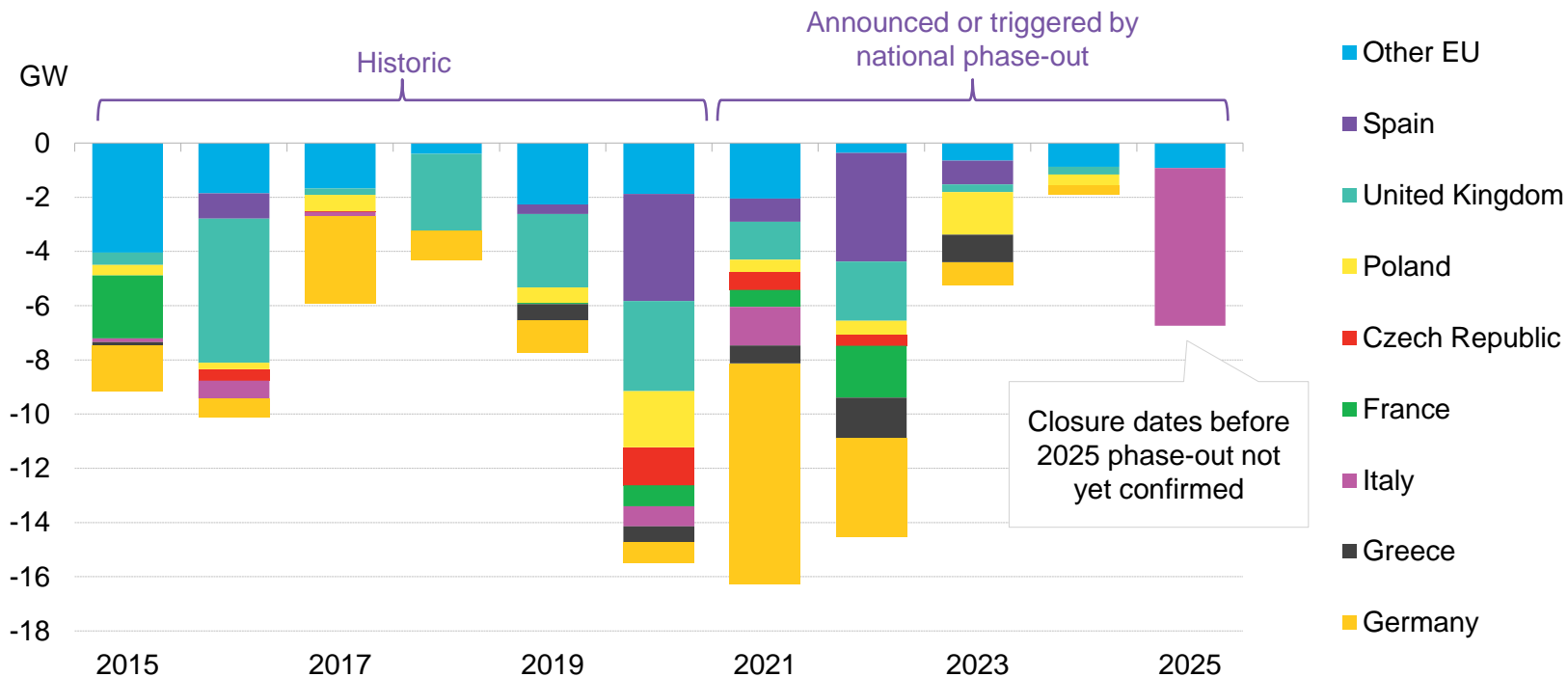
# Coal is on the way out, but many countries have yet to commit to a phase-out deadline

## European coal phase-outs

Deadline	Countries	
2020-2022	Sweden, France, Portugal, Austria	
2025	U.K., Italy, Ireland, Hungary	
2028-29	Greece, Finland	
2030	Netherlands, Denmark, Slovakia	
2038	Germany	
Under discussion	Spain, Czechia, Slovenia	
None	Poland, Romania, Bulgaria, Croatia	

Source: BloombergNEF

# 2021 coal closures in Europe could top 2020 record



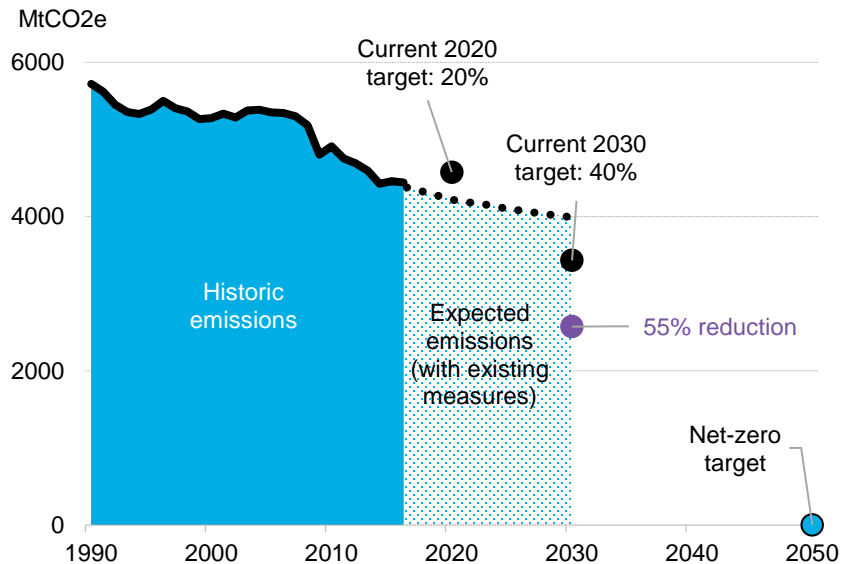
Source: BloombergNEF, Europe Beyond Coal

# Energy transition drivers

EU climate targets, carbon price and falling renewables costs

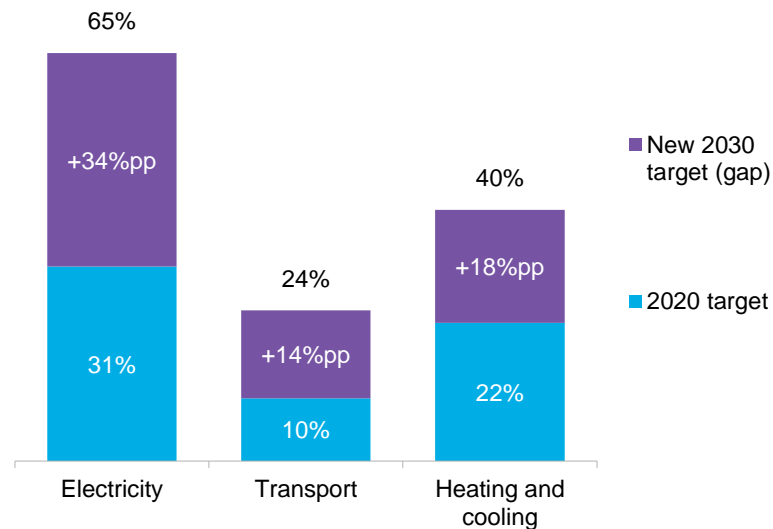
# New European 2030 climate target will drive a faster transition

## Annual emissions and 2020 and 2030 targets



Source: European Environment Agency, European Commission, BloombergNEF

## Renewables targets by sector

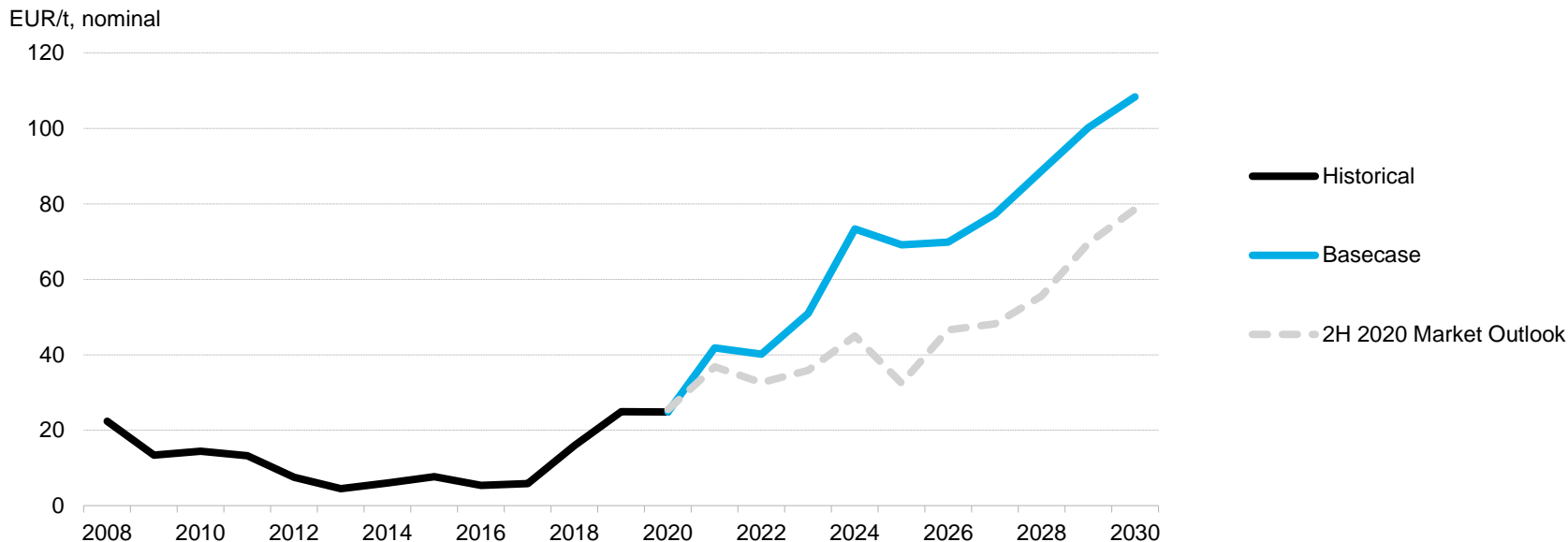


Source: European Commission, BloombergNEF. Note: Increased target shows upper bound from European Commission's Sept. 2020 impact assessment.



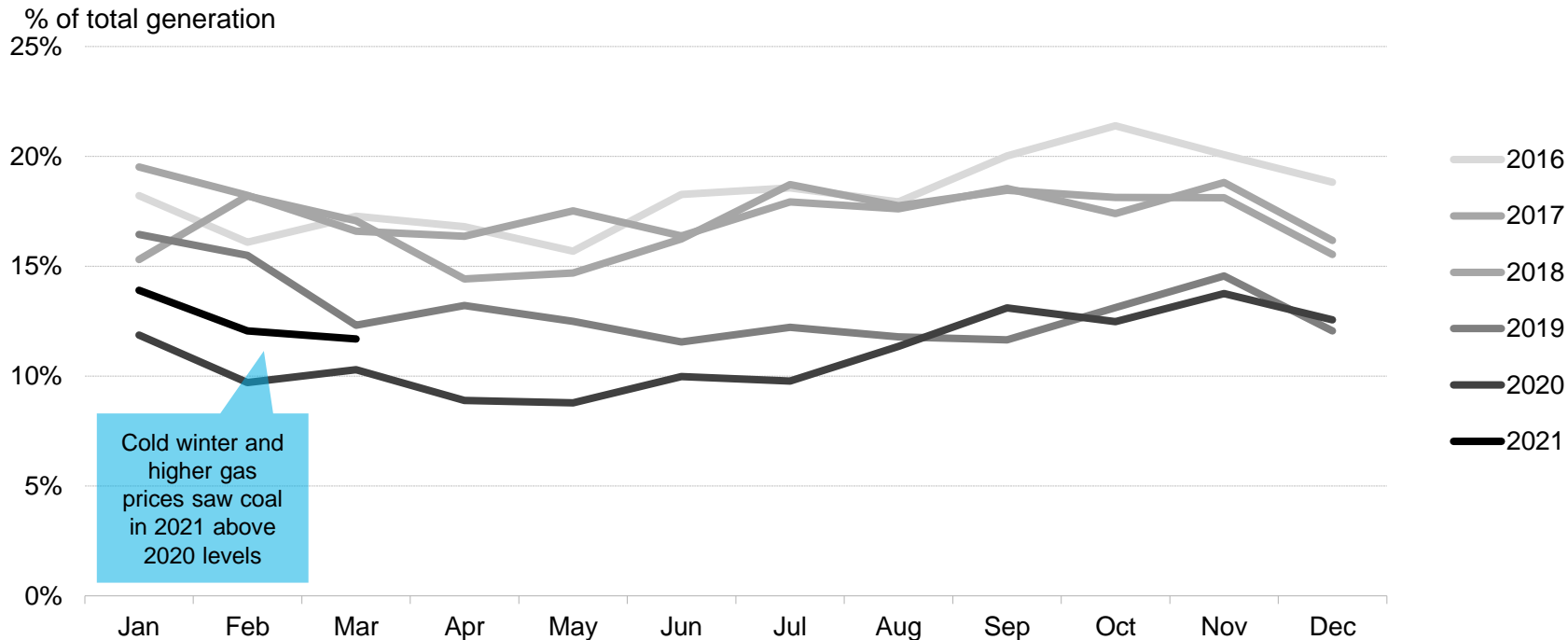
# EU carbon prices are expected to drive much of targeted decarbonization

## Medium- and long-term price projections



Source: BloombergNEF

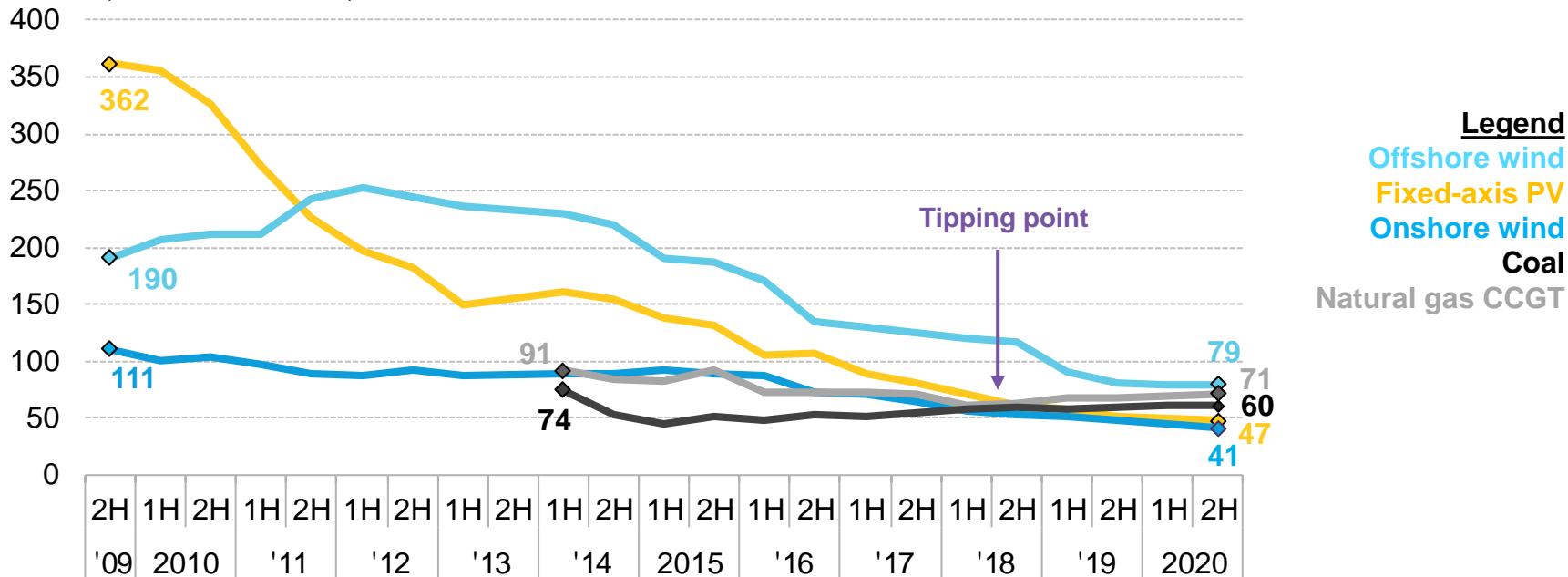
# Economics have already pressured coal and lignite since 2019



Source: BloombergNEF, ENTSO-E

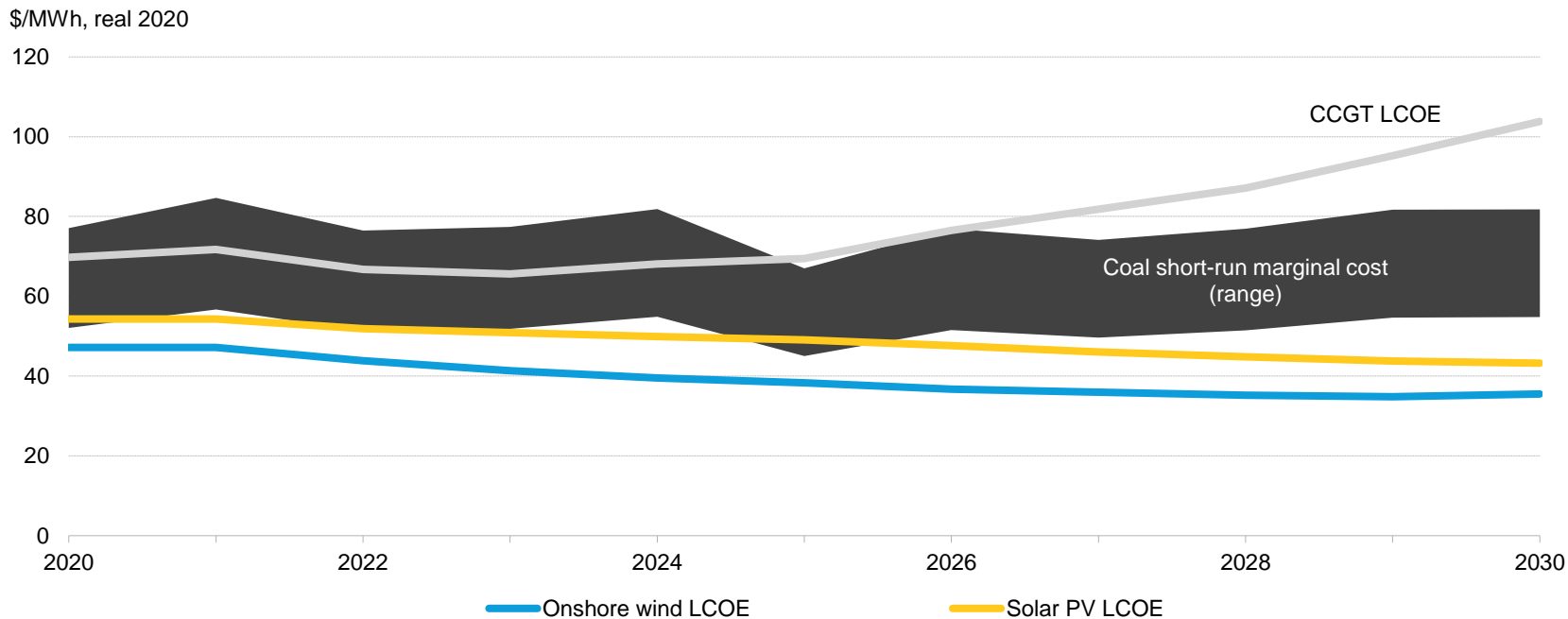
# BNEF global benchmark LCOEs for onshore wind and PV are now at or below \$50/MWh

LCOE (\$/MWh, real 2019)



Source: BloombergNEF. Note: Excludes subsidies or tax-credits. CCGT: combined-cycle gas turbine power plant. Global benchmarks are country-weighted averages.

# New renewables are cheaper than running existing coal plants, but gas pricier

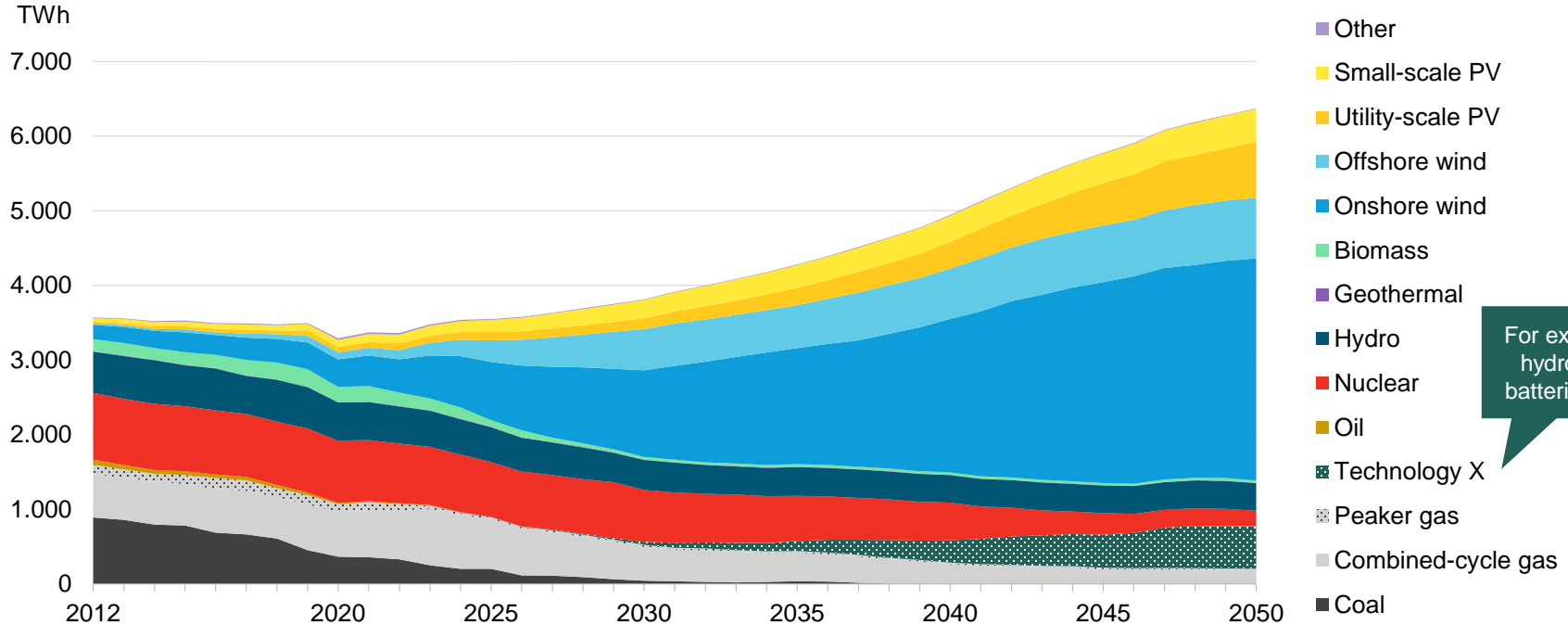


Source: BloombergNEF Note: Costs for Germany modeled in our European Energy Transition outlook using the BNEF 2020 carbon price outlook, with a price of 45 euros in 2030.

# European Energy Transition Outlook

Generation mix modelled under ambitious  
climate policy

# BNEF ambitious policy scenario shows no coal generation after 2038



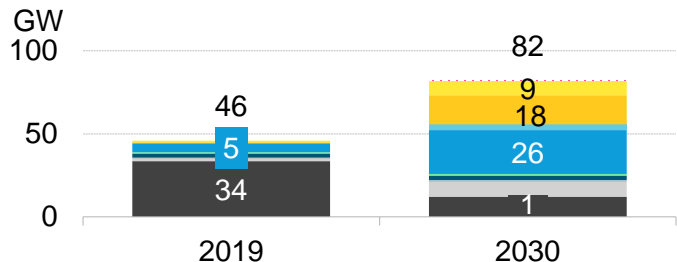
Source: BloombergNEF

# 2030 scenarios for coal regions

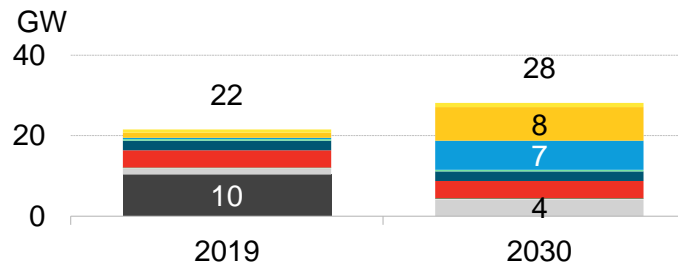
Poland, Czechia, Bulgaria and Romania

# 35GW of coal closes across four countries under rising carbon prices

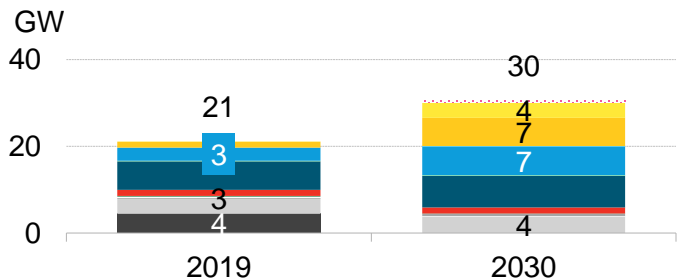
## Poland



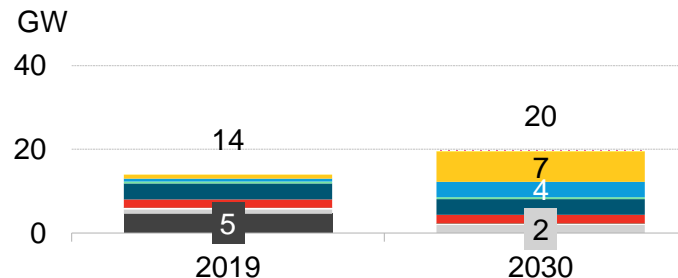
## Czechia



## Romania



## Bulgaria



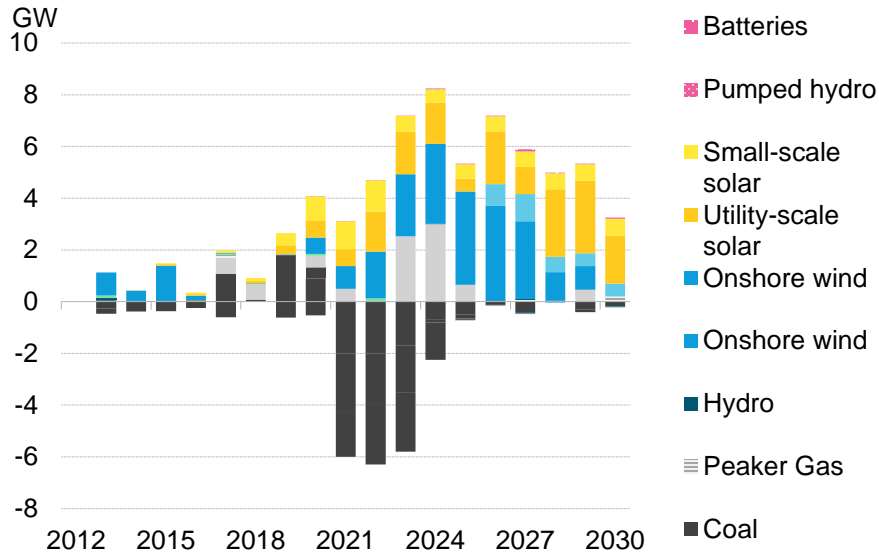
- Utility-scale batteries
- Small-scale PV
- Utility-scale PV
- Offshore wind
- Onshore wind
- Biomass
- Hydro
- Nuclear
- Oil
- Peaker gas
- Gas
- Coal

Source: BloombergNEF



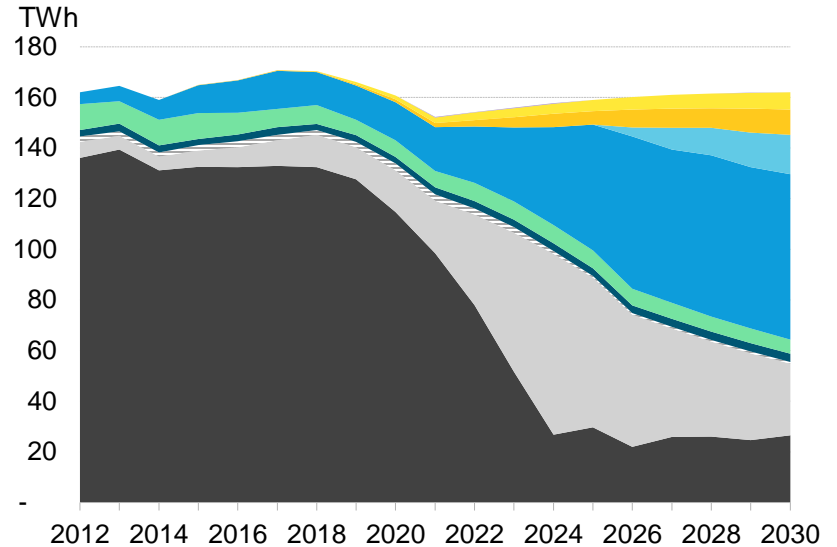
# Two thirds of Polish coal plants close by 2030

## Annual additions and retirements



Source: BloombergNEF

## Generation mix

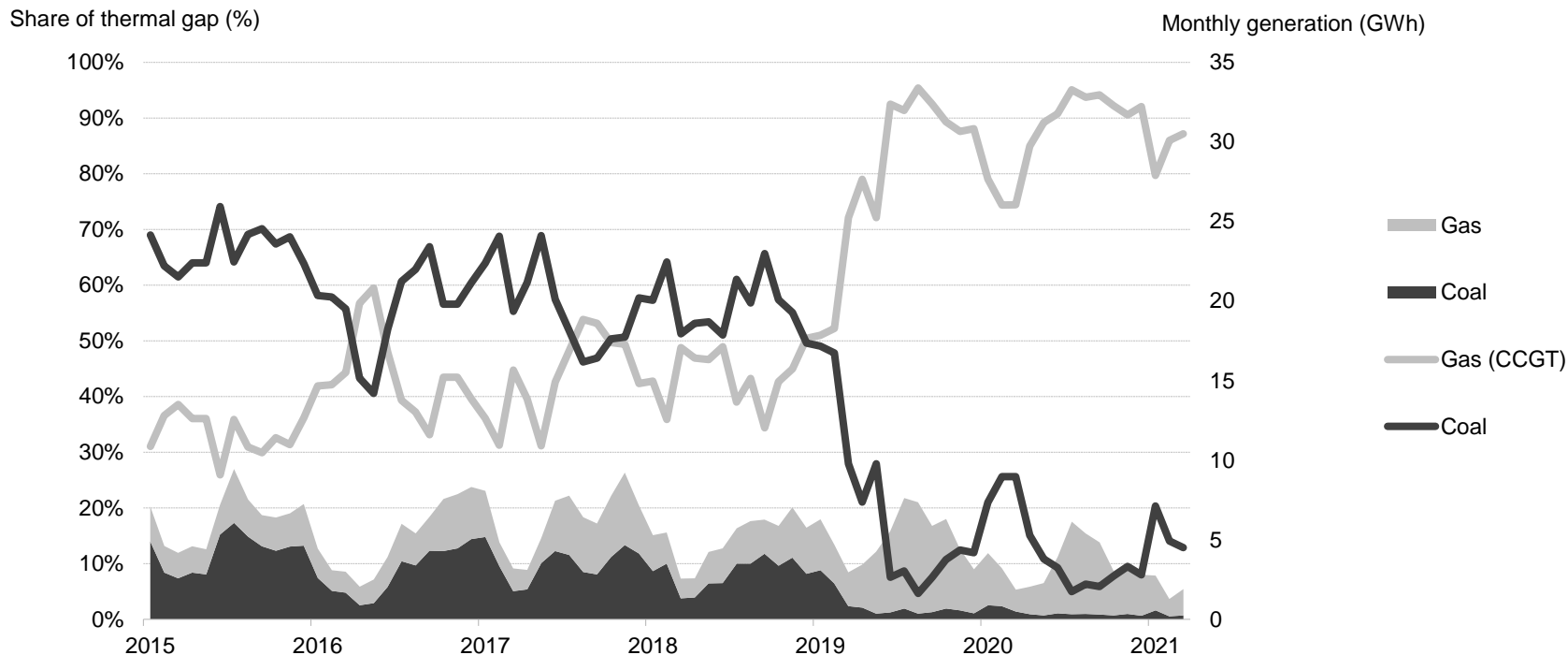


Source: BloombergNEF

# Spain's coal phase-out

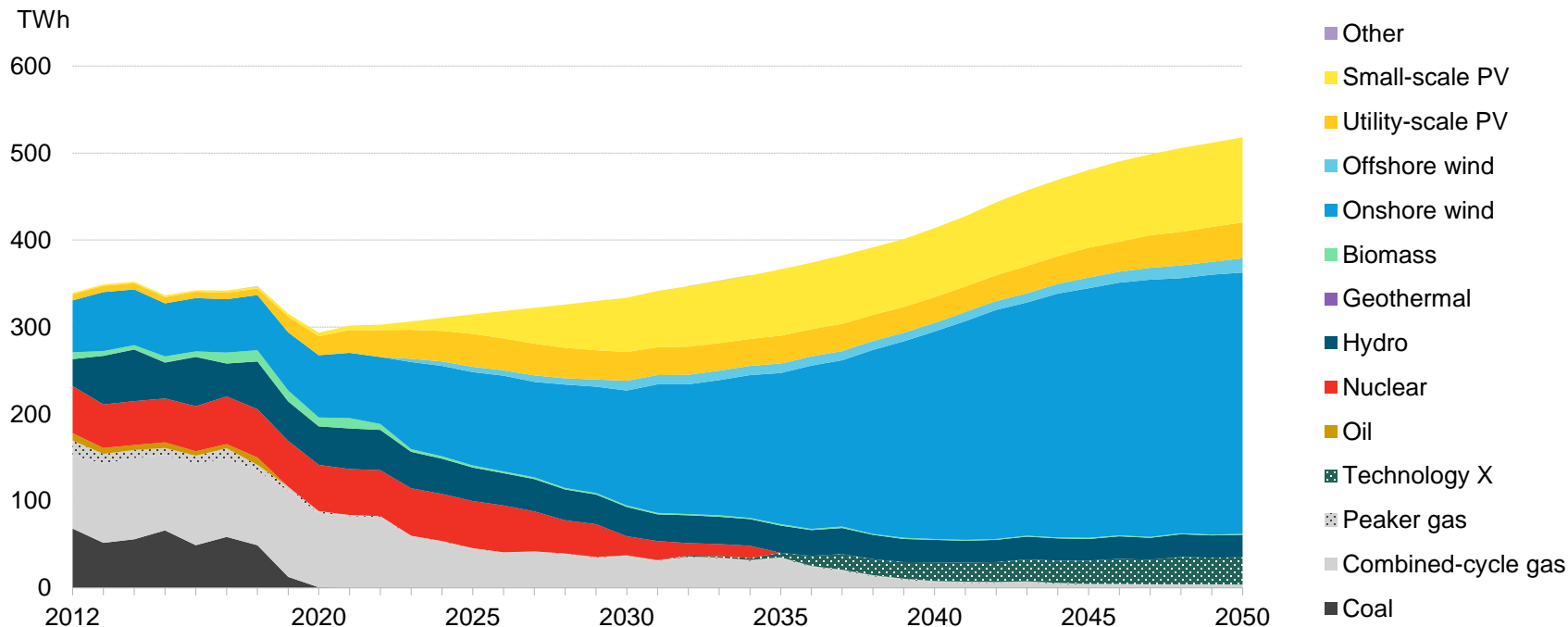
Coal-to-gas fuel switching and growing role of renewables

# Coal generation plummeted in 2019, triggering coal phase-out plans



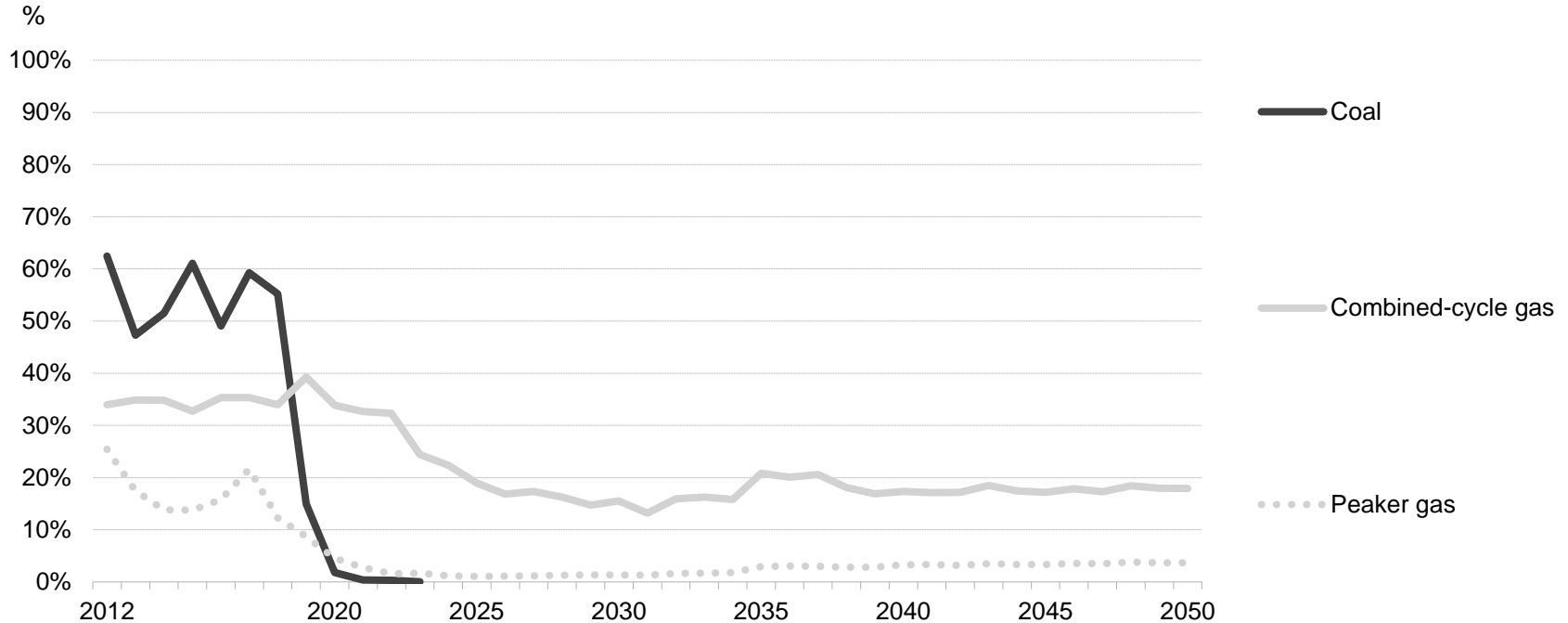
Source: BloombergNEF.

# The role of gas declines in the long term as renewables generation grows



Source: BloombergNEF. Note: Generation includes both Spain and Portugal, as Iberia's power market is integrated

# Gas is needed as backup for renewables, but capacity factors stay low



Source: BloombergNEF

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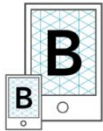
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