

# Covid-19 and the Energy Transition

One Year Later

David Hostert

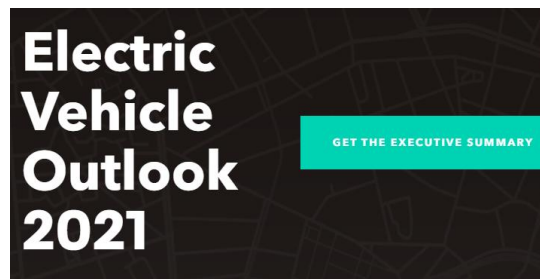
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BloombergNEF

**This is an abbreviated version of the slides presented. To learn more, please contact [dhostert@bloomberg.net](mailto:dhostert@bloomberg.net)**

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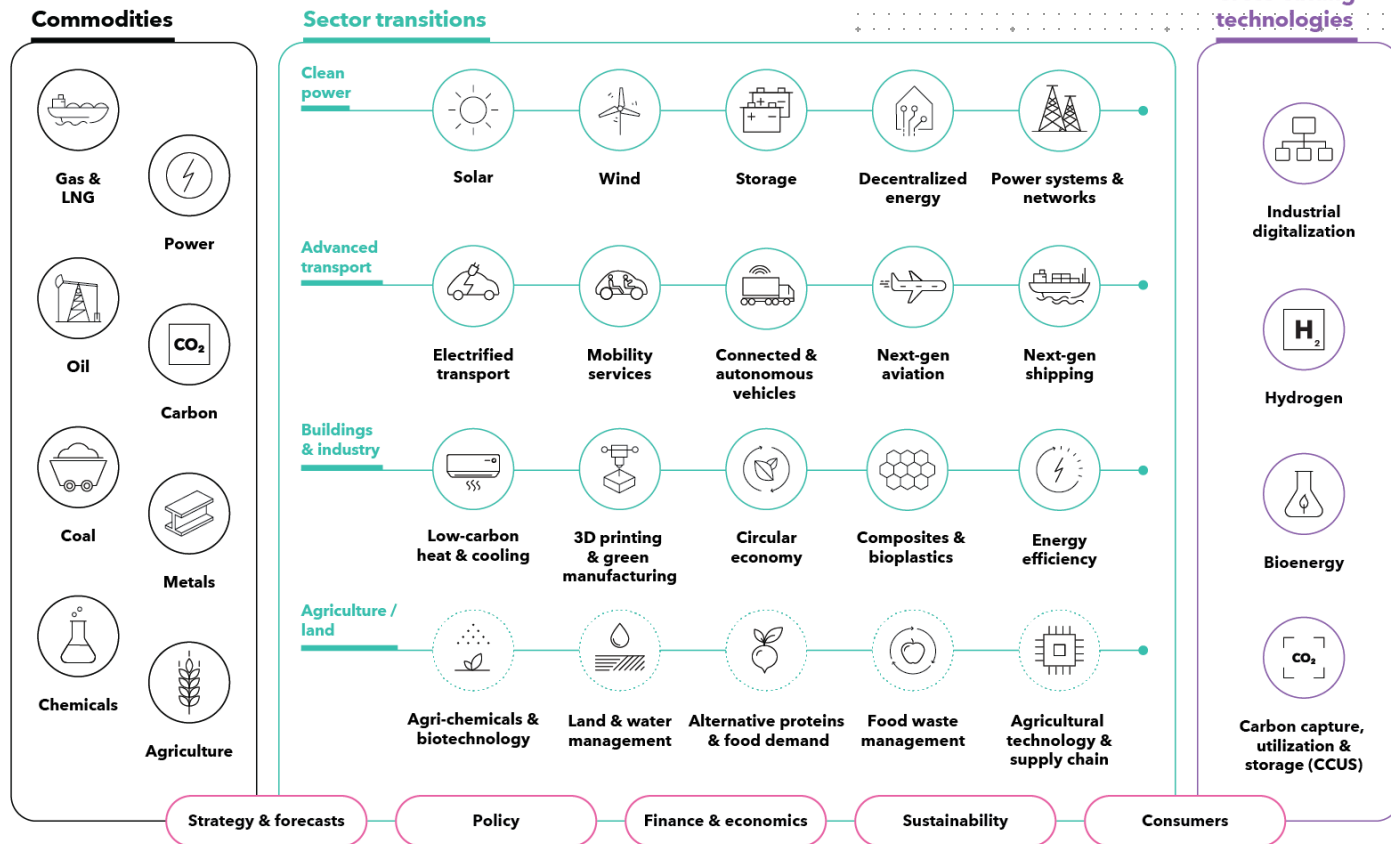
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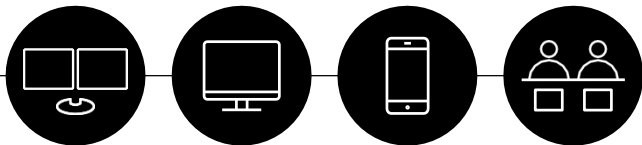
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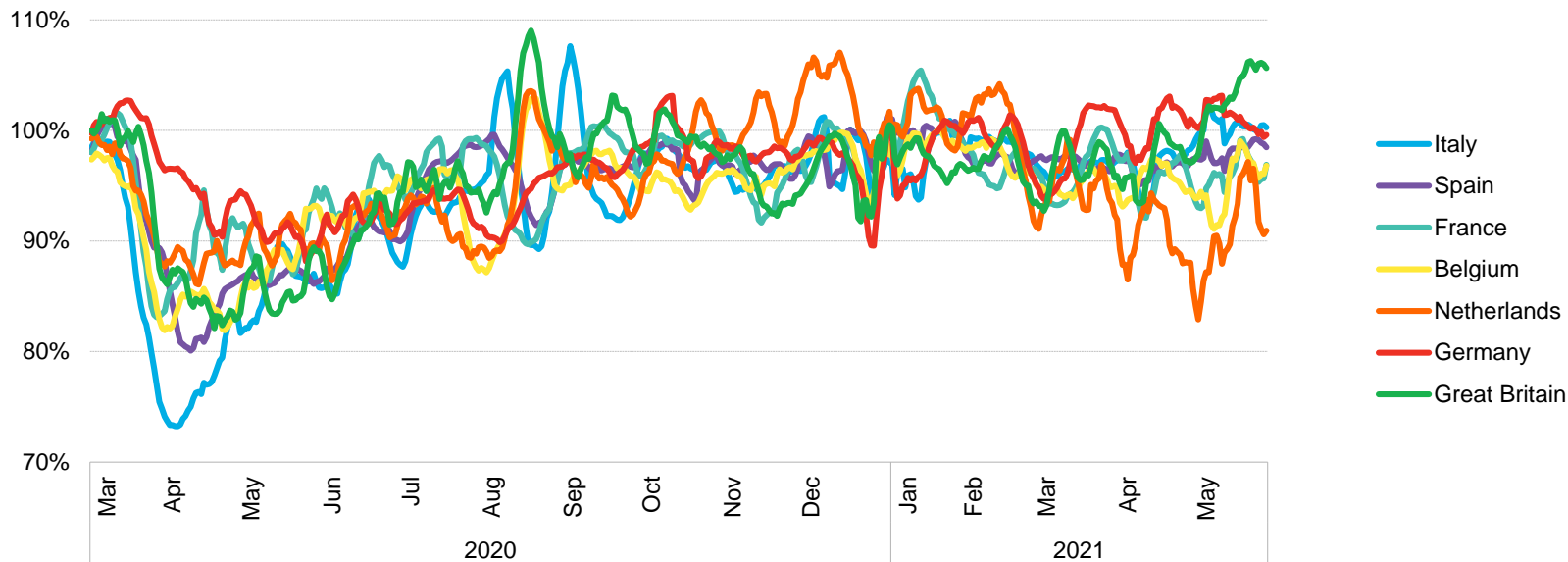


# Looking back at 2020

How did our predictions do?

# Power demand mostly recovered after first waves

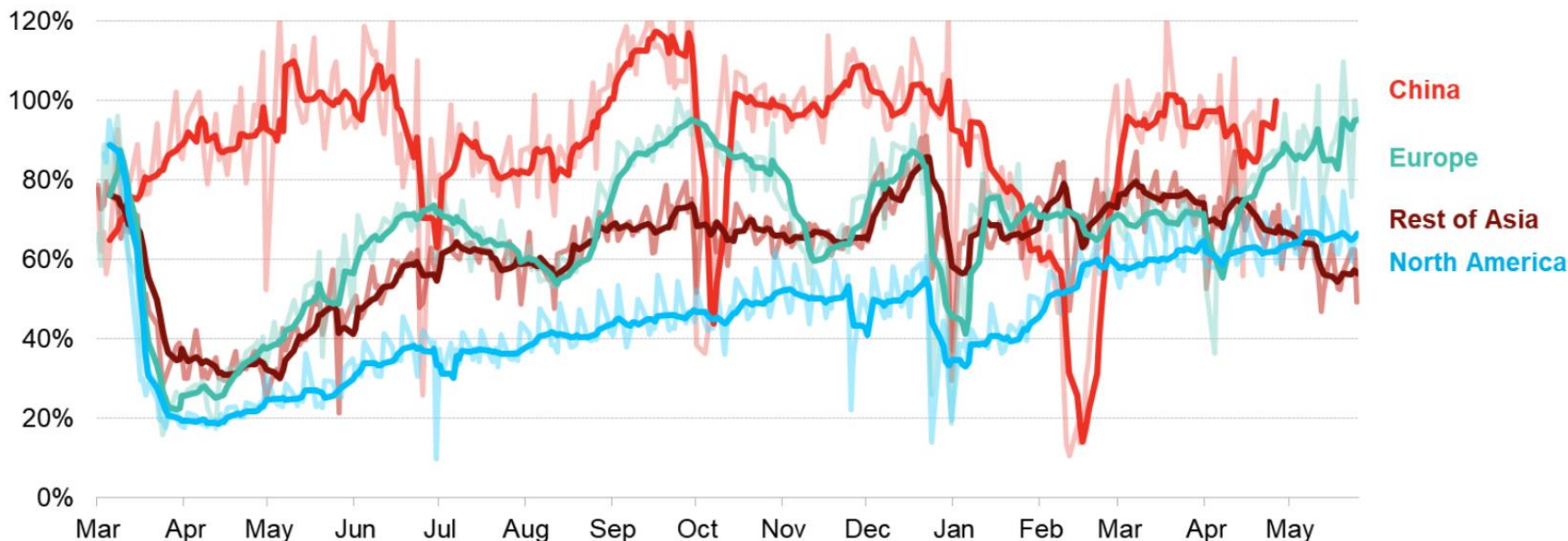
Actual load as a fraction of 'no-impact' scenario, 7-day rolling average



Source: BloombergNEF

# Road traffic congestion is back in Europe, lock-downs hit Asia

Peak congestion index

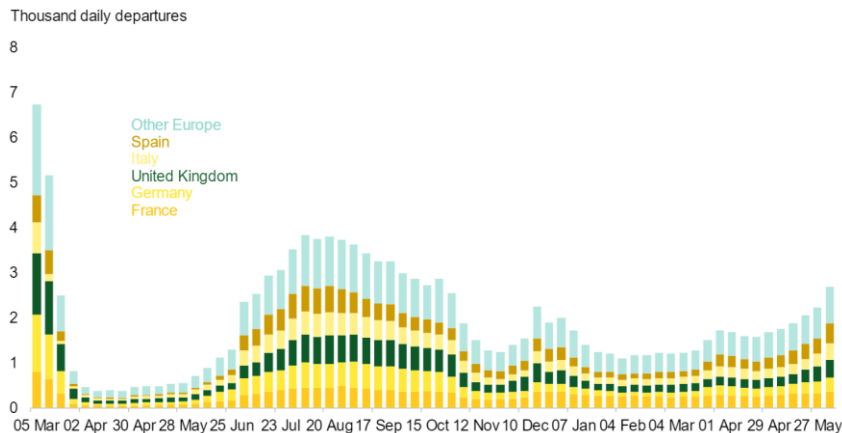


Source: BloombergNEF, TomTom Traffic Index. Note: 'Peak congestion index' is calculated by BloombergNEF. Index is arithmetic daily average of hourly weekday peak congestion data, compared to the 2019 average values for cities in each region tracked in this report. The index shows the extent to which congestion has recovered to 'pre-virus' levels, with 100% being equal to 2019 average peak congestion. Faded lines are daily values and darker lines are five-day moving average



# European flight departures rising slowly, to exceed 2020 peak in the next four weeks

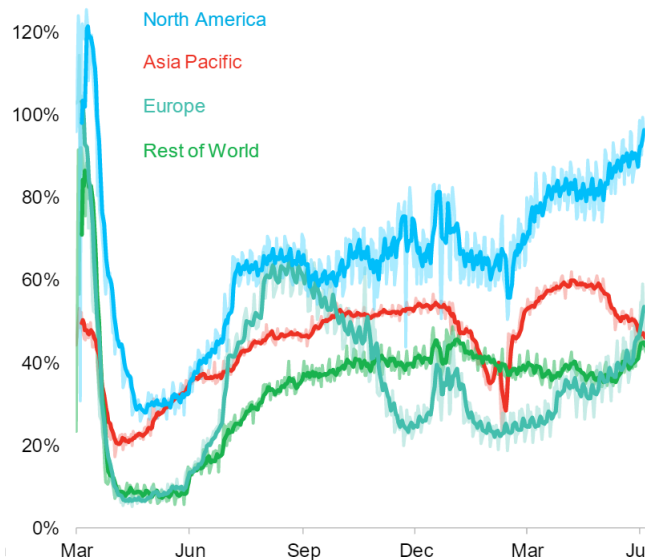
## European flight departures



Source: BloombergNEF, FlightStats Note: Based on 133 major global airports, including cargo flights

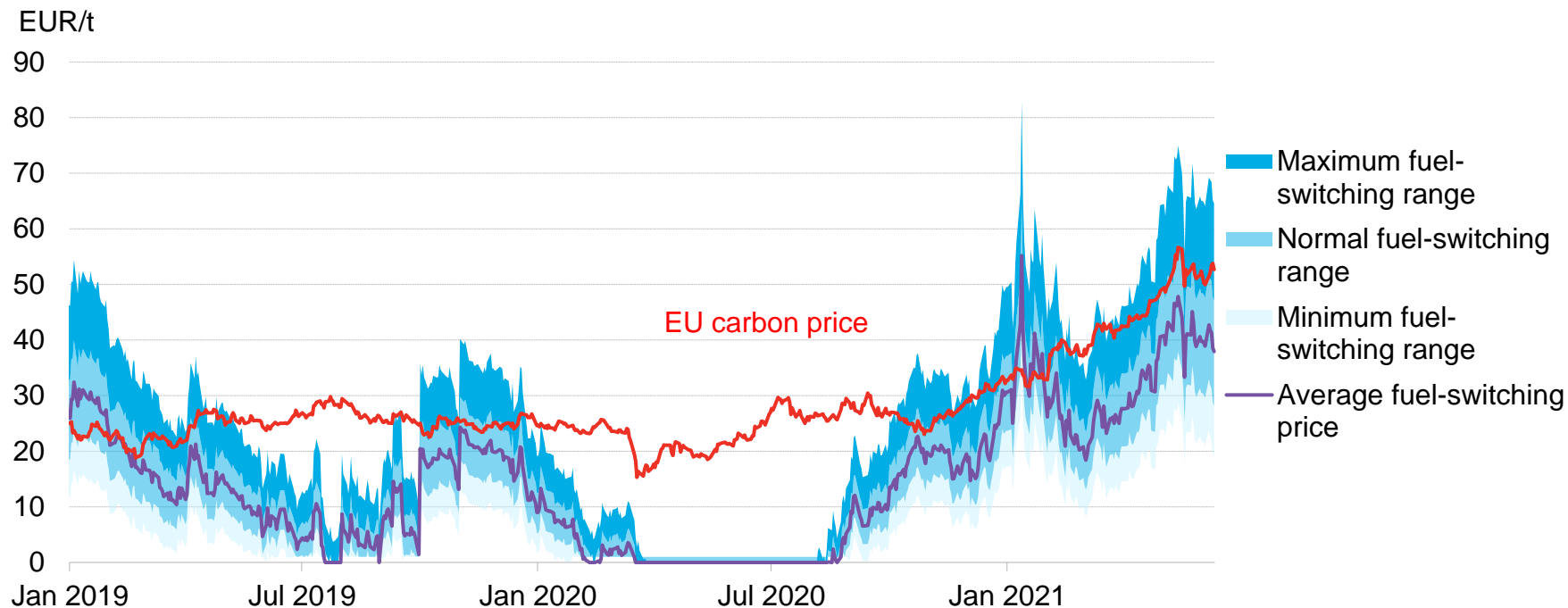
## Global departures (rebased)

140%



Source: BloombergNEF, FlightStats Note: Rebased to 100 = December 2019 average. Based on 133 major global airports, including cargo flights.

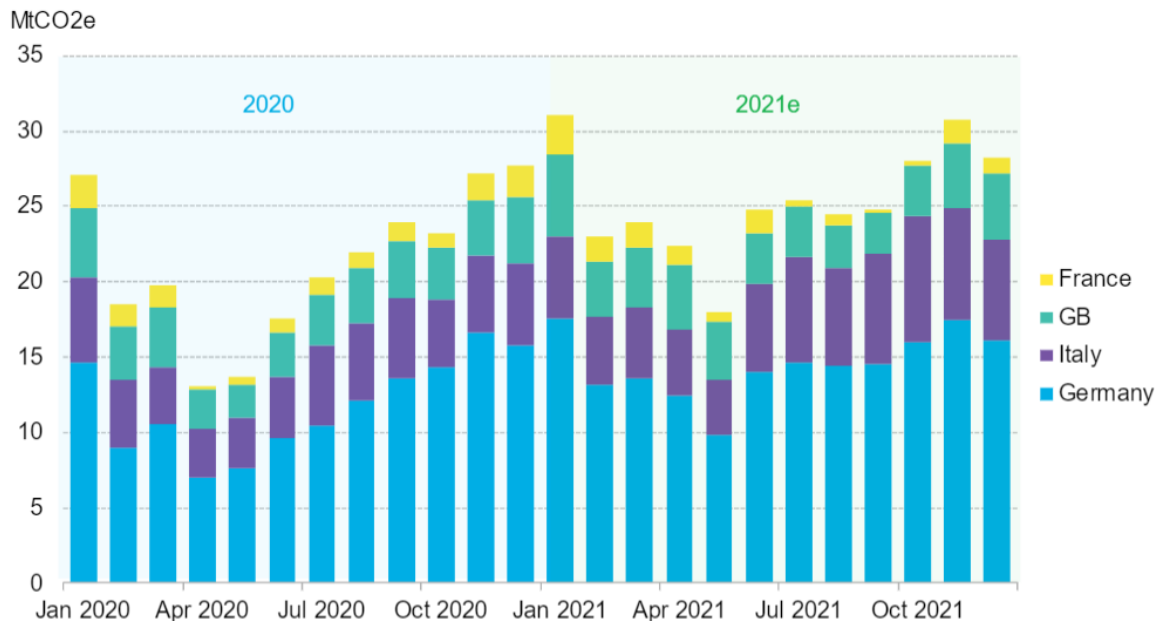
# Record coal-to-gas fuel switching as gas price fell and carbon soared



Source: BloombergNEF

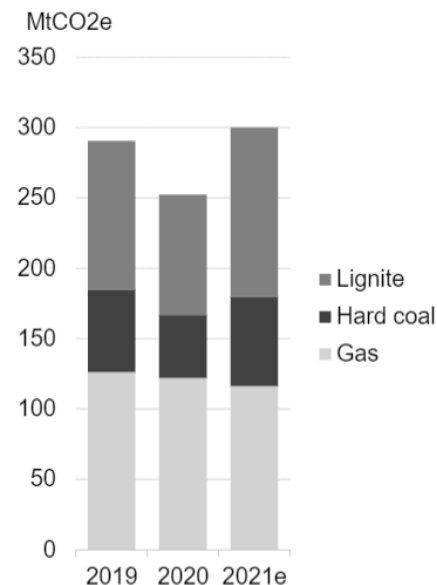
# Power emissions fell in 2020, but will rise again in 2021

## Power emissions in select markets



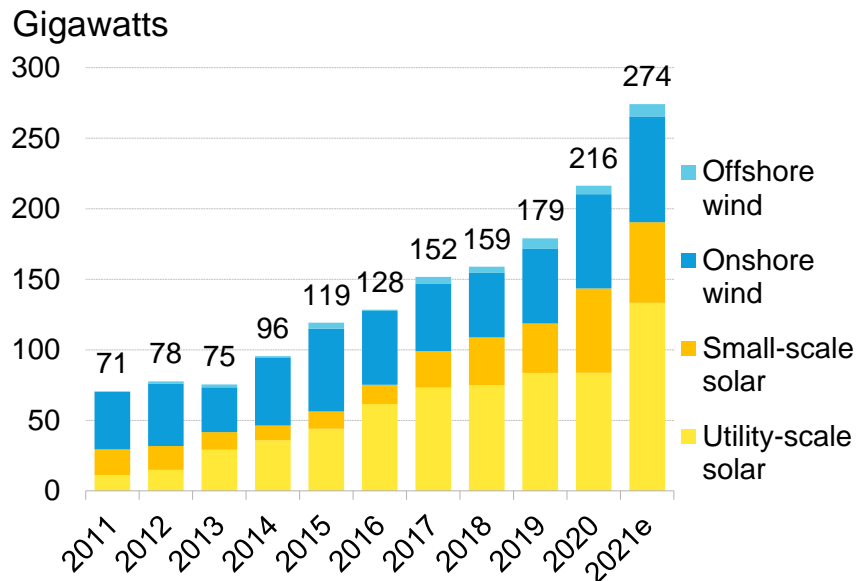
Source: BloombergNEF. Note: Based on BNEF short-term power modelling from May 24, 2021. Markets include France, Great Britain, Italy and Germany. GB refers to Great Britain.

## Annual summary



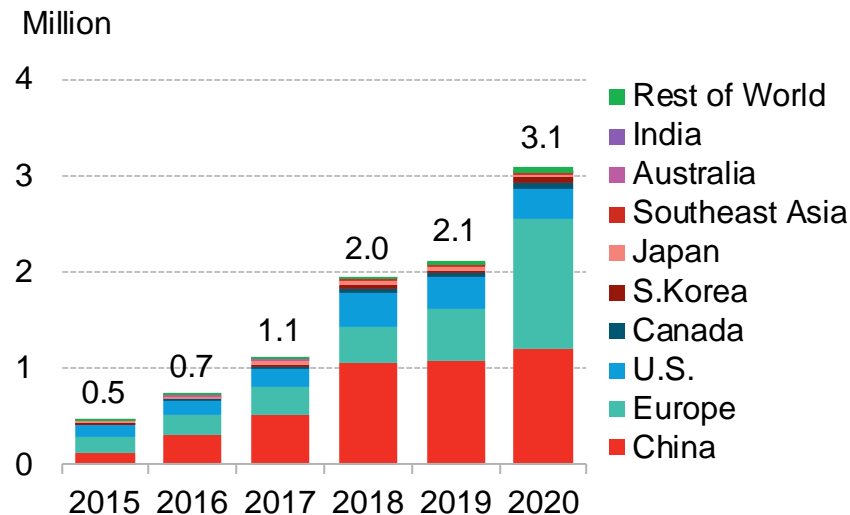
# Renewable energy broke new global record

## Annual wind and solar installations



Source: BloombergNEF

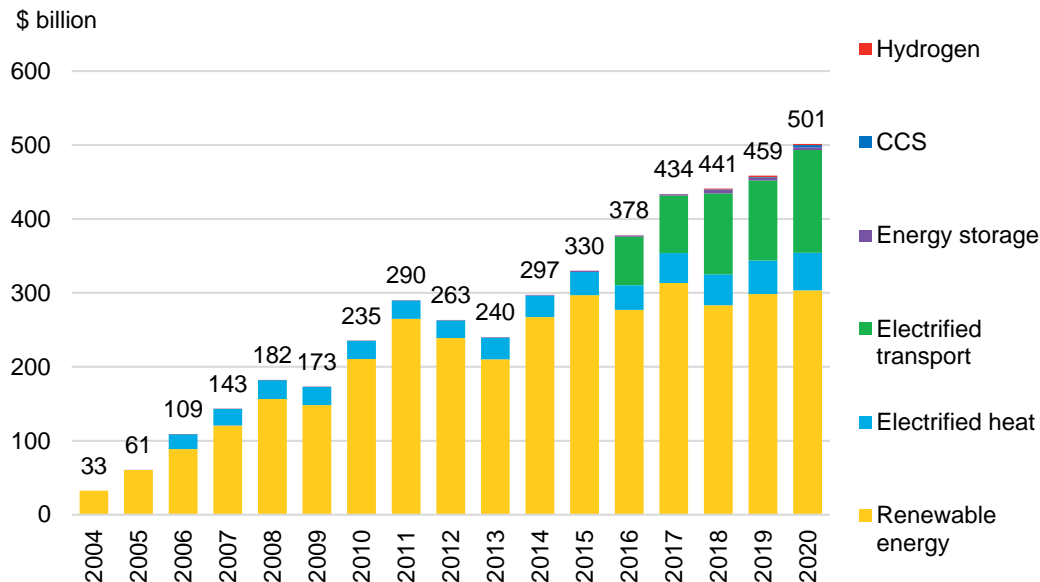
## EV share of new passenger vehicles sales



Source: BNEF, Marklines. Totals include BEVs and PHEVs. Includes highway-capable passenger vehicles. Excludes low-speed EVs, buses and other commercial vehicles. South Korean EV sales prior to 2016 are excluded. The excluded data does not have a material impact on the results.

# Energy transition investment hit \$500 billion in 2020, despite the pandemic

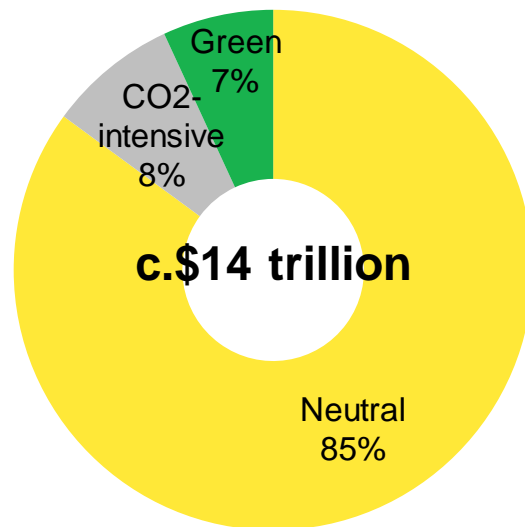
## Historical investment in energy transition



Source: BloombergNEF. Note: CCS = carbon capture & storage.

# 'Building back better' hasn't really happened globally...

Covid-19 stimulus approved as of March 16, 2021



Source: Governments, media reports, BloombergNEF. Note: 'Approved green stimulus' includes support to CO2-intensive sectors and companies with green conditions.

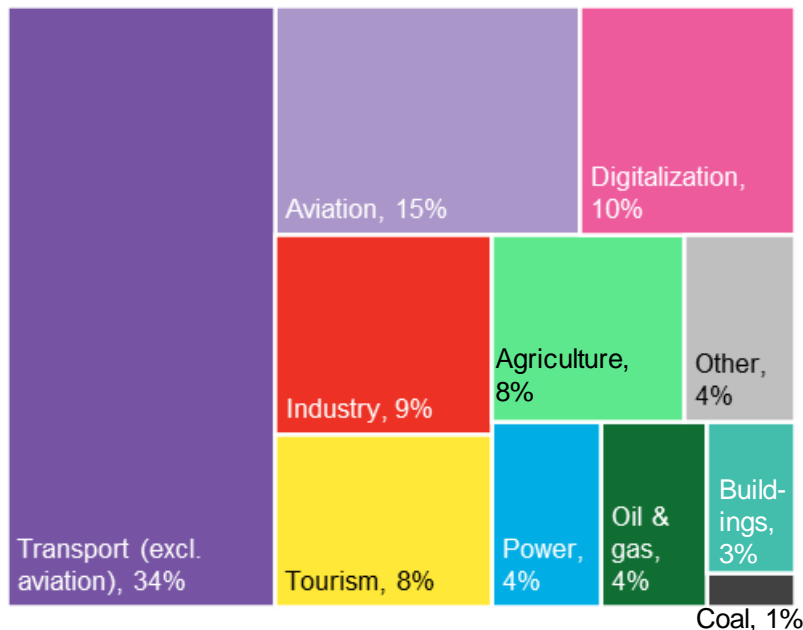
# \$949B in national & subnational green stimulus approved to date



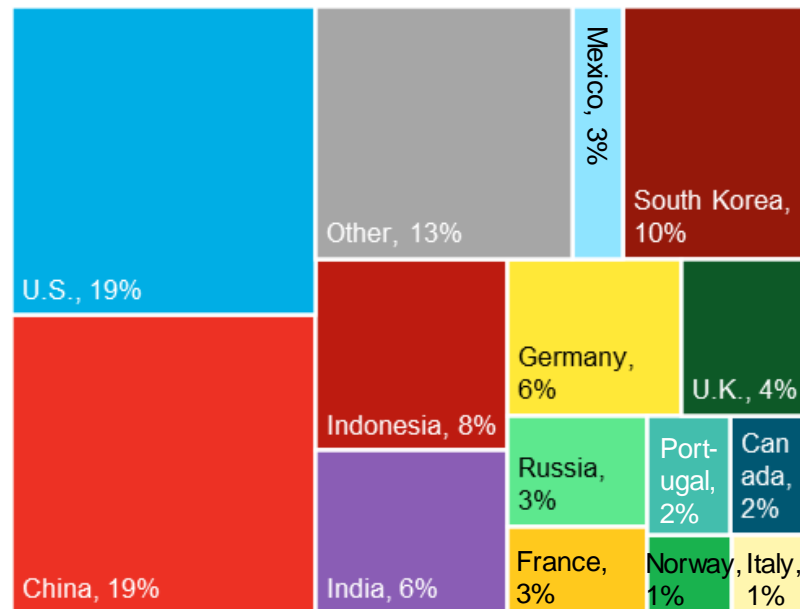
Source: BloombergNEF. Note: Figures only include green stimulus that has been officially approved. Country-level funding does not include stimulus from the EU package.

# \$1,148bn in stimulus for carbon-intensive companies and sectors without green conditions

By target sector



By country



Source: Government announcements, media reports, BloombergNEF. Note: Data covers economic stimulus at specific carbon-intensive sectors without publicly declared green conditions.



# Have the measures worked?

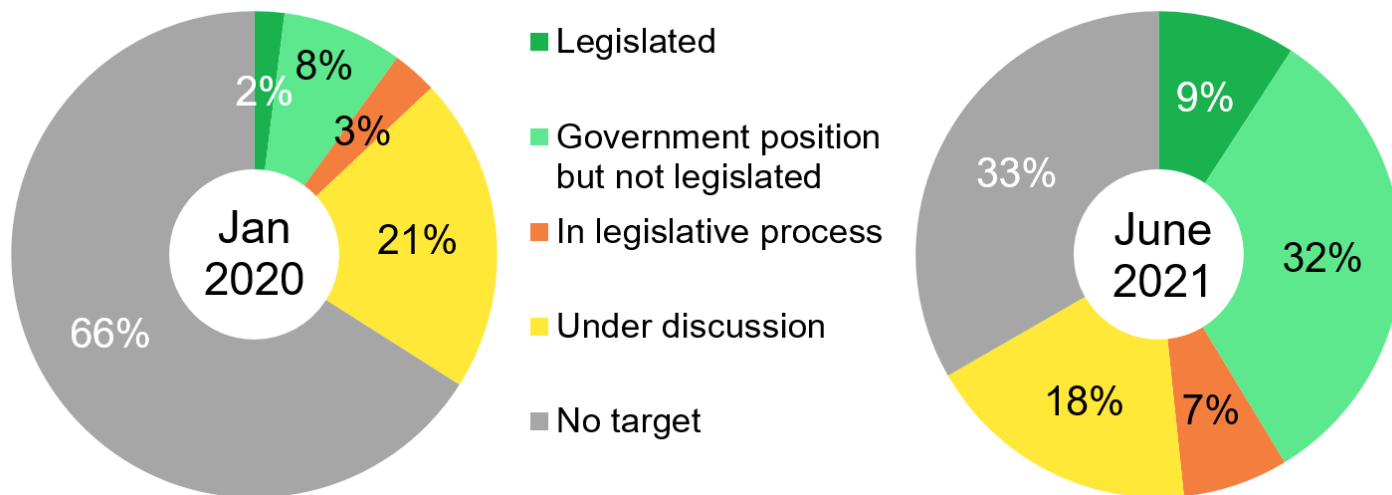
## The Global and European Energy Transition

# Key messages

## 1. **Policy:** Ambitions are rising

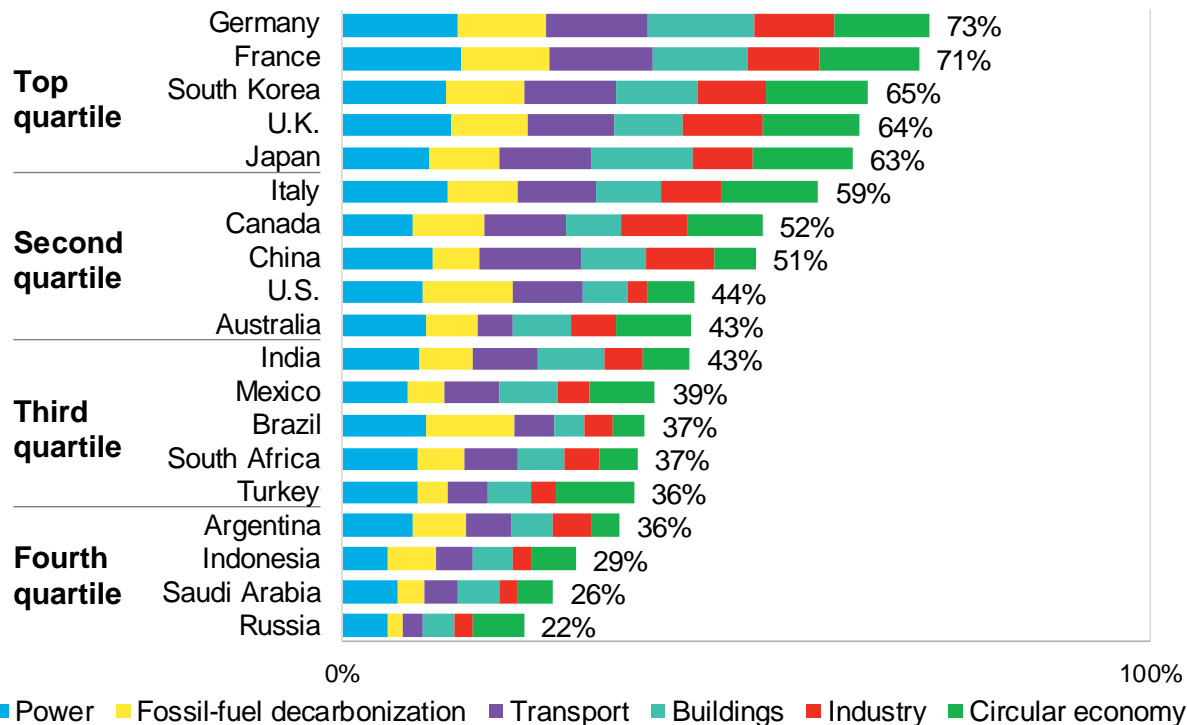
# Almost two-thirds of all global emissions are now covered by a form of net-zero target

## Global emissions covered by a net-zero target



Source: WRI CAIT, governments, BloombergNEF. Note: Includes 2016 greenhouse-gas emissions including land-use change and forestry.

# G20 Policy Scoreboard



Source: BloombergNEF. Note: Fossil-fuel decarbonization = green gas, biofuels & CCUS. Policy scores as of February 2021.

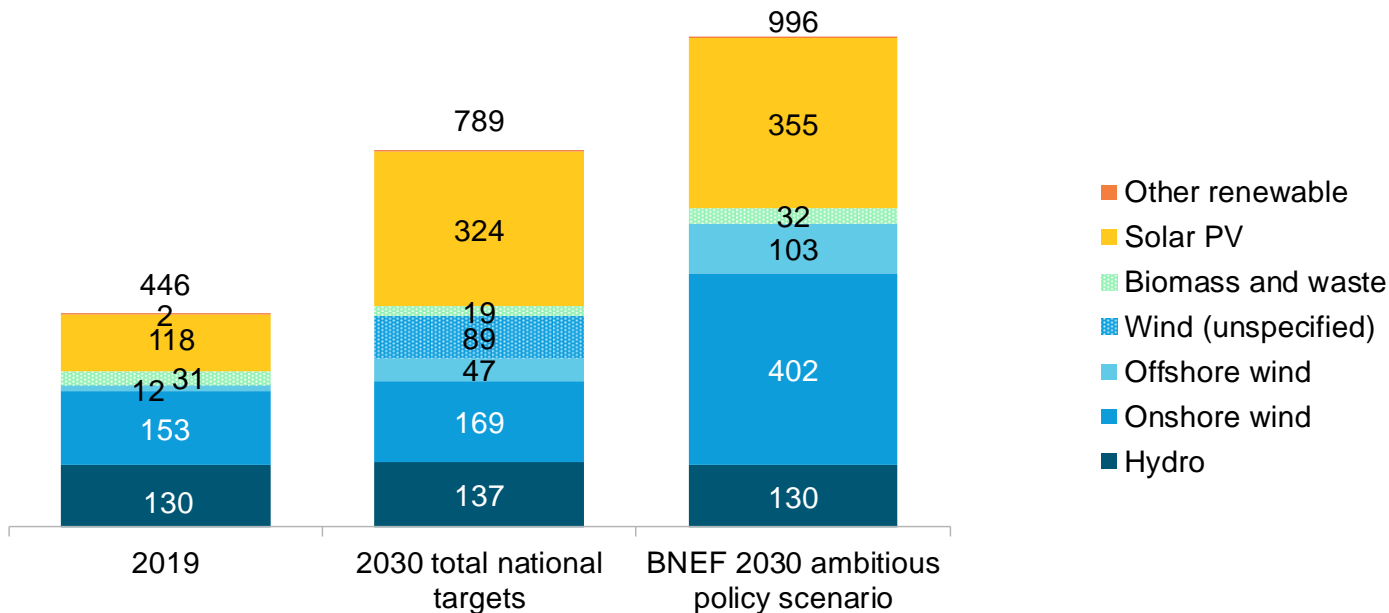
# Key messages

1. **Policy:** Ambitions are rising
2. **Renewables:** Fundamentals remain strong

# Final energy and climate plans not enough for new 55% emissions reduction goal

## Renewable generation capacity in EU27, 2019 vs. 2030

GW

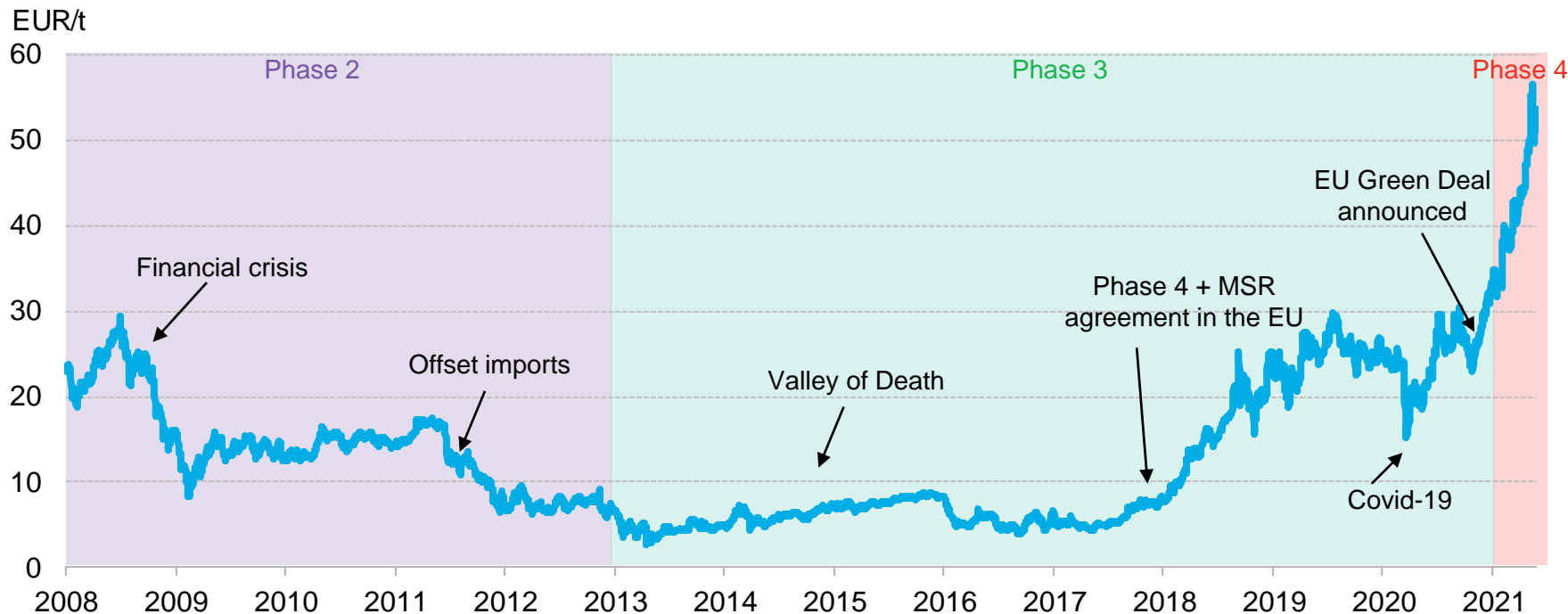


Source: BloombergNEF, Member state National Energy and Climate Plans

# Key messages

1. **Policy:** Ambitions are rising
2. **Renewables:** Fundamentals remain strong
3. **Fossil Fuels:** The narrative has changed

# Carbon markets: short-term looseness is trumped by long-term tightness

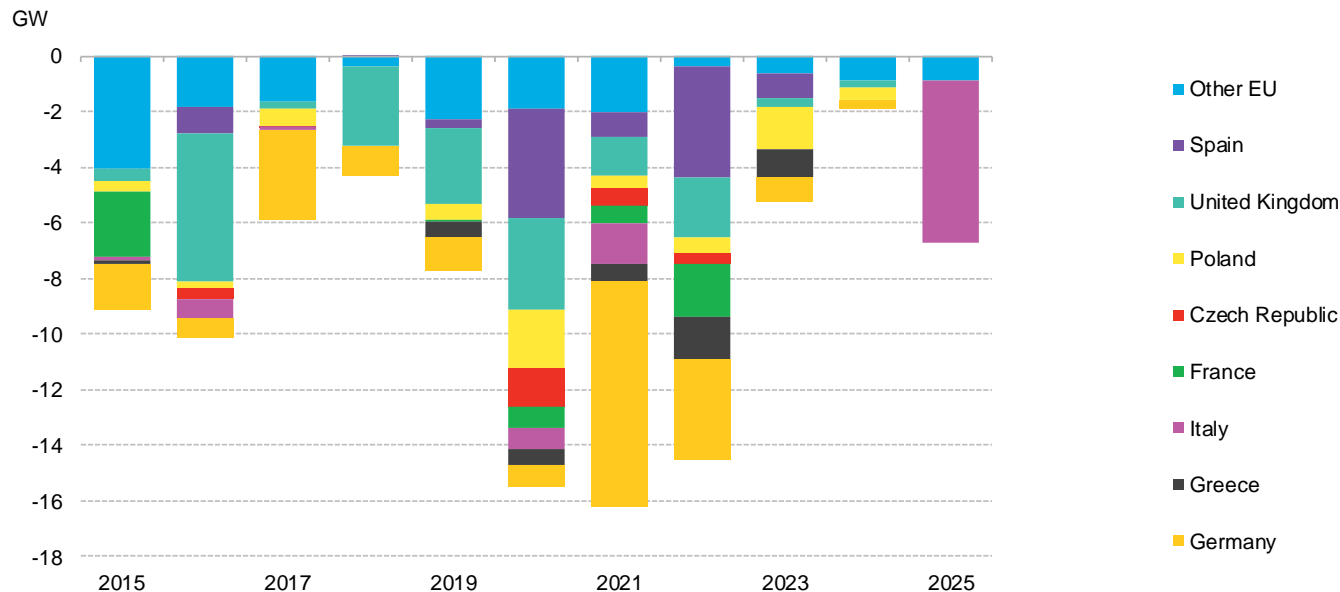


Source: ICE, BloombergNEF



# Coal: closures race ahead of policy

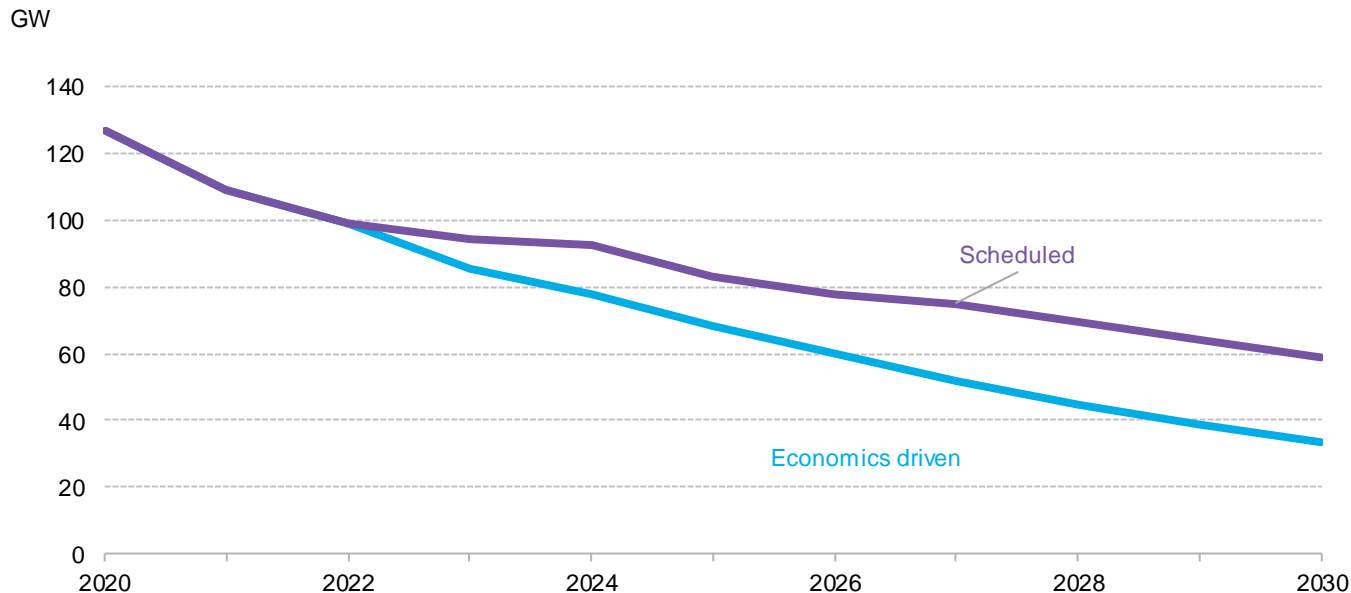
## Historic and announced coal closures per country in the EU and the U.K.



Source: BloombergNEF, Europe Beyond Coal

# Economic coal plant closures are accelerating

## European scheduled coal closures versus economics-driven



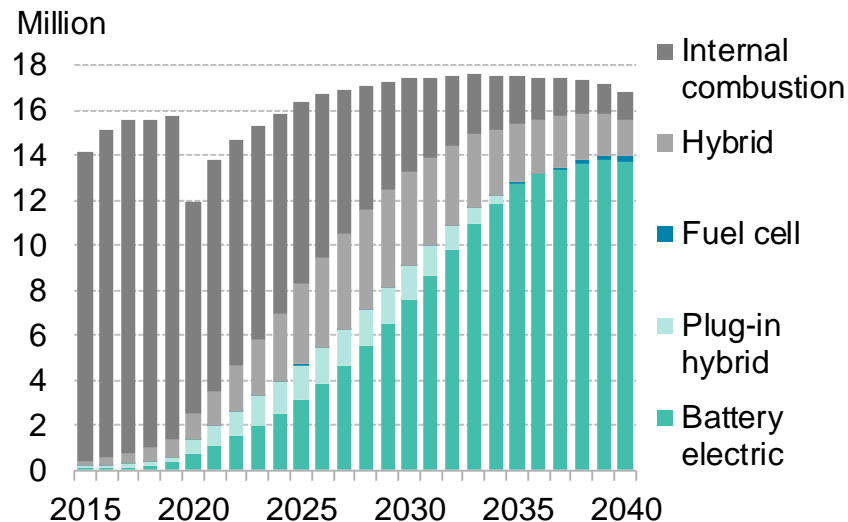
Source: BloombergNEF

# Key messages

1. **Policy:** Ambitions are rising
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4. **Transport: Expect rapid acceleration**

# Electric Vehicle Outlook: expect rapid acceleration this decade

## Europe passenger vehicle sales by drivetrain



EV share of European sales in 2040

80%

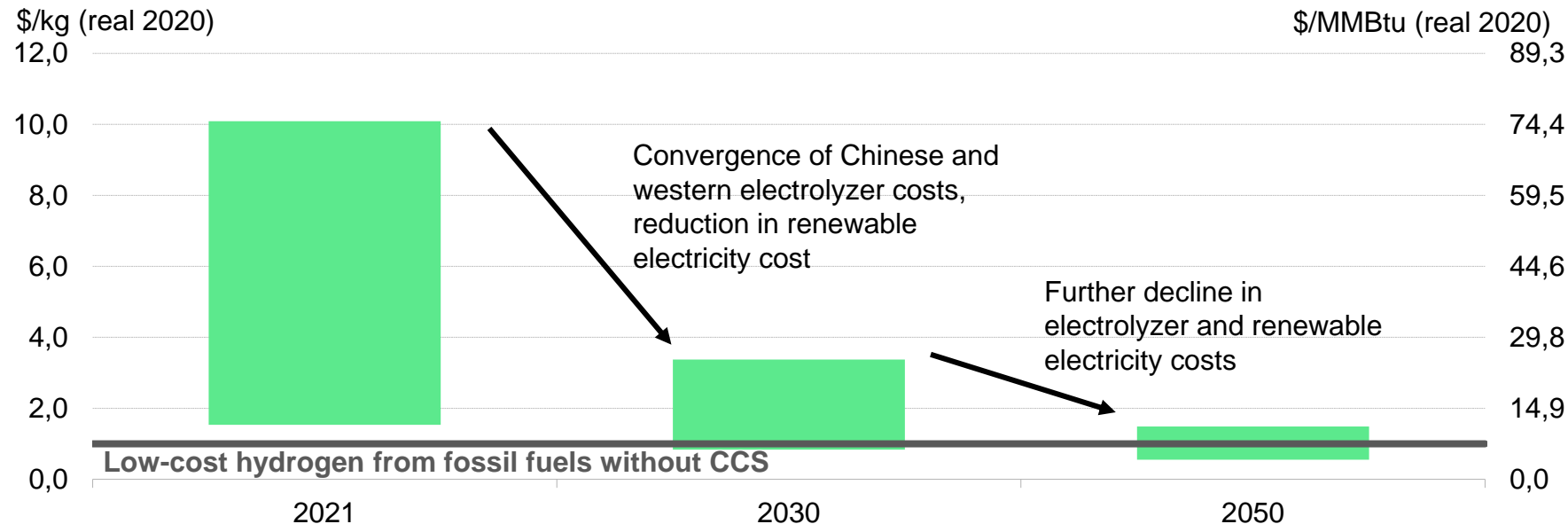
Source: BNEF. Note: Electric contains battery electric and plug-in hybrid electric vehicles.

# Key messages

1. **Policy:** Ambitions are rising
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4. **Transport:** Expect rapid acceleration
5. **Industry:** Hydrogen pathway could be unlocked

# Renewable hydrogen is currently expensive, but costs are coming down

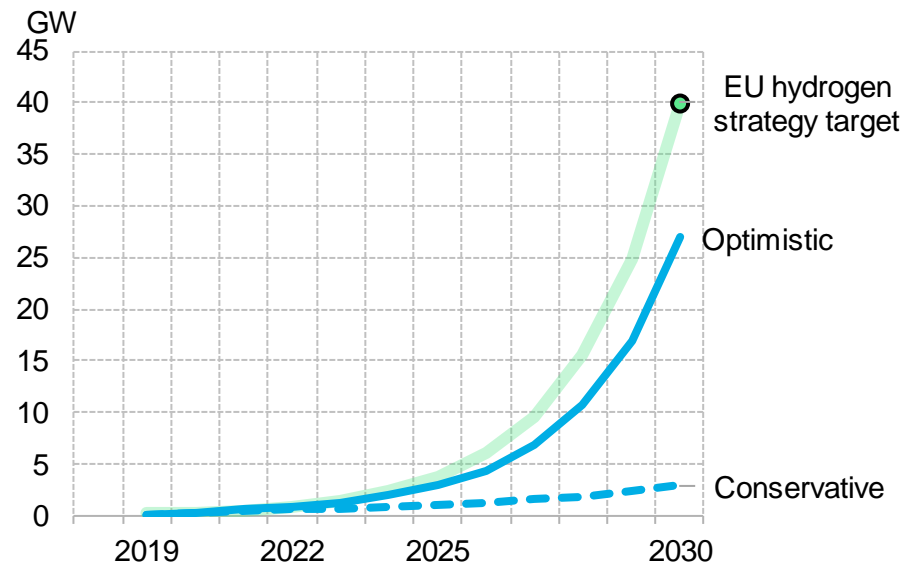
## Forecast global range of levelized cost of hydrogen production from large projects



Source: BloombergNEF. Assumes Chinese alkaline electrolyzer costs published in *Hydrogen: The Economics of Production From Renewables* ([web](#) | [terminal](#)), except PEM and western alkaline in 2021, which are assumed to cost \$1,200/kW and \$1,000/kW respectively, \$200/kW lower than in 2019 (see [Appendix](#)). Electricity costs derived from BNEF's 2H 2020 LCOE Update ([web](#) | [terminal](#)), mid scenario.

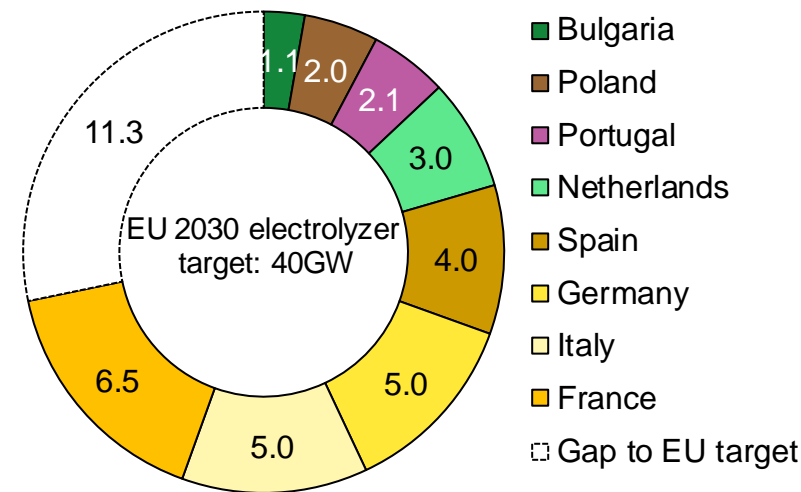
# The cost of renewable hydrogen is set to plummet even faster with EU targets

## Cumulative global electrolyzer installations by scenario



Source: BloombergNEF.

## EU and member state electrolyzer deployment targets for 2030



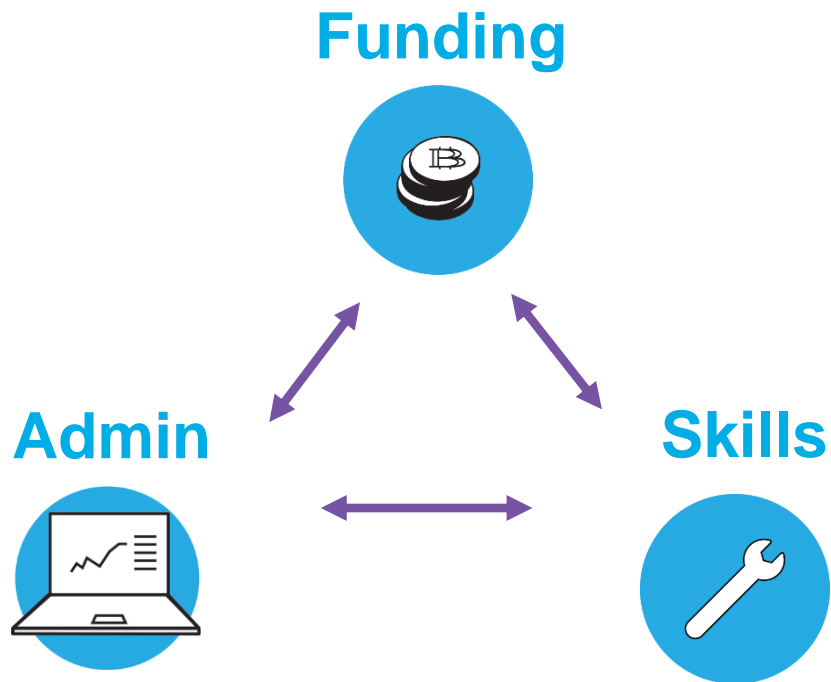
Source: BloombergNEF, European Commission, national hydrogen strategies.

# Key messages

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4. **Transport:** Expect rapid acceleration
5. **Industry:** Hydrogen pathway could be unlocked
6. **Buildings:** Beware of pitfalls



# Decarbonizing buildings is hard

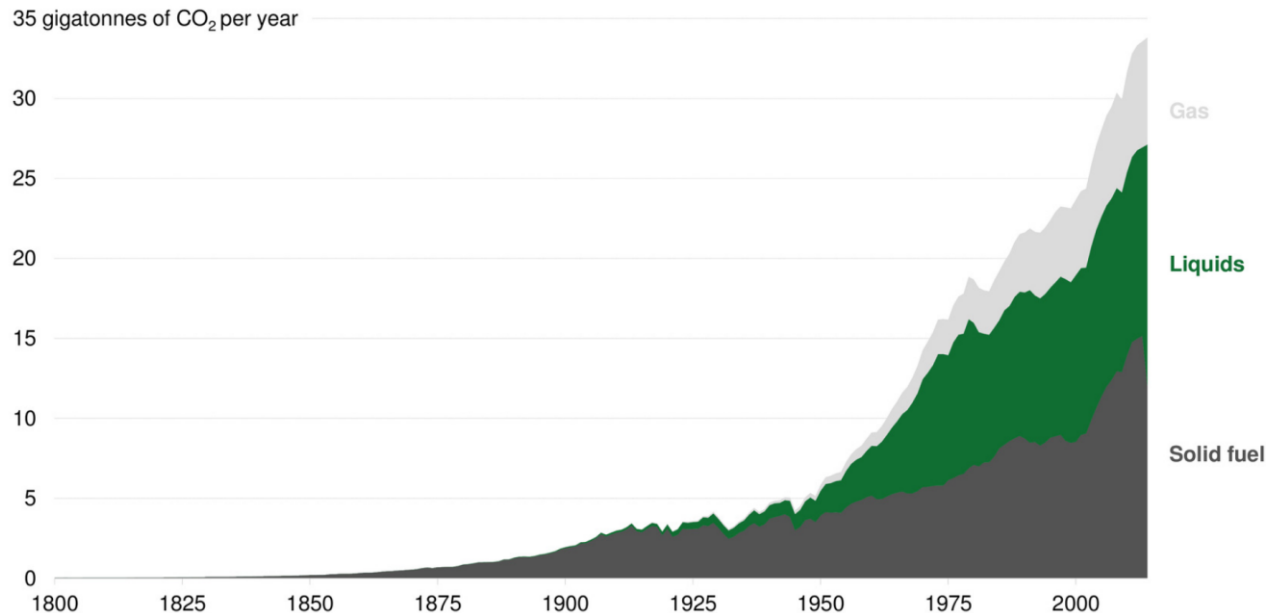


# Key messages

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4. **Transport:** Expect rapid acceleration
5. **Industry:** Hydrogen pathway could be unlocked
6. **Buildings:** Beware of pitfalls
7. **We need to move much faster**

# This is a problem of our generation

## Global CO<sub>2</sub> emissions from fossil fuels



~Half of all  
emissions have  
occurred since  
1990

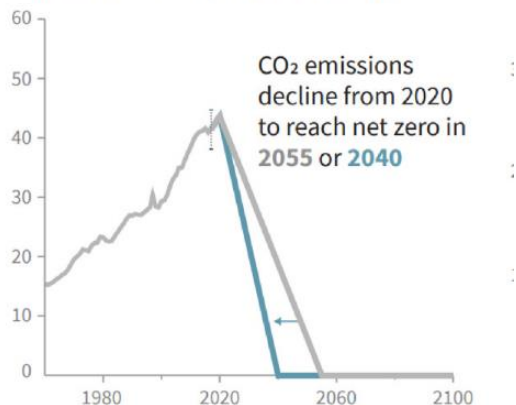
Source: Carbon Dioxide Information Analysis Center

# And it will need to be solved in a generation

Intergovernmental Panel on Climate Change report, October 2018

## Emissions trajectory required to limit global warming to 1.5°C

Billion tonnes CO<sub>2</sub> per year (GtCO<sub>2</sub>/yr)



The world must reach net-zero emissions by ~2050 to avoid the worst impacts of climate change

Source: Intergovernmental Panel on Climate Change

# Thank you!

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## G20 Zero-Carbon Policy Scoreboard

Issue 2021

## Electric Vehicle Outlook 2021

GET THE EXECUTIVE SUMMARY

## Energy Transition Investment Trends

Tracking global investment in the low-carbon energy transition

2021

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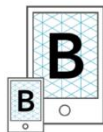
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