

## 2020 Energy Consumption Estimates



*Based on its monthly data for G20 countries, Enerdata analyses global energy market trends in 2020.*

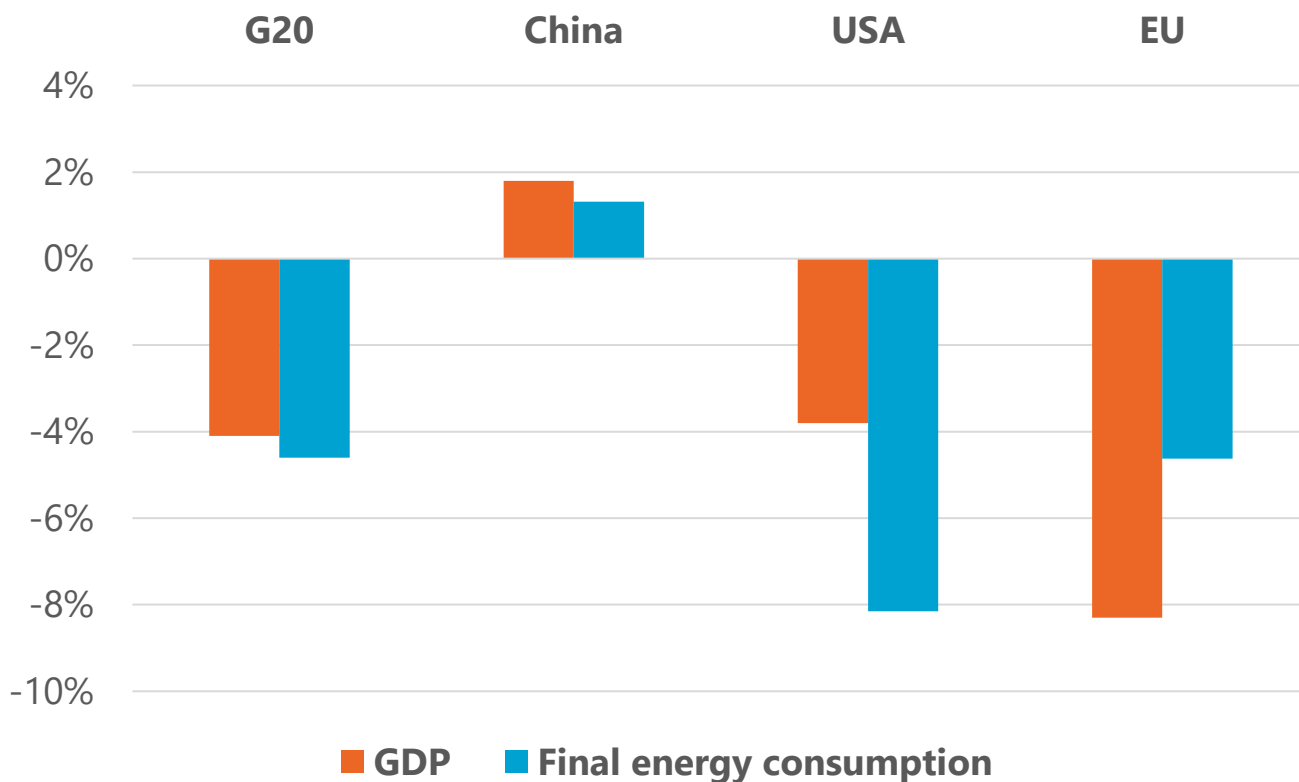


# 2020 estimates update – challenges and methodology

- The countries' energy **consumption** and **emissions** are strongly influenced by
  - the extent of the **economic recession**, which is estimated and whose projections have been revised several times in 2020.
  - and the way in which different countries have managed the process of **lockdown** and **restart**.
- **Enerdata has developed a detailed methodology** that uses economic activity forecast updates from major international organisations\* (estimates of September 2020) and monthly energy data\*\* (up until September 2020, i.e. up to over 9 months).
- **Consumption** and **emissions** estimates are made by country for all G20 countries:
  - At the level of the **major energy demand sectors**, to consider the different sensitivities of these sectors to recession and lockdown,
  - At the level of the **power sector**, to take into account changes in the power mix.
- CO<sub>2</sub> emission factors were calculated based on these estimates and not extrapolated from the past.
- The rest of the world has been covered in a more aggregated way, integrating international aviation and maritime transport.

# Big drop in final energy consumption

## Evolution of GDP and final energy consumption\*



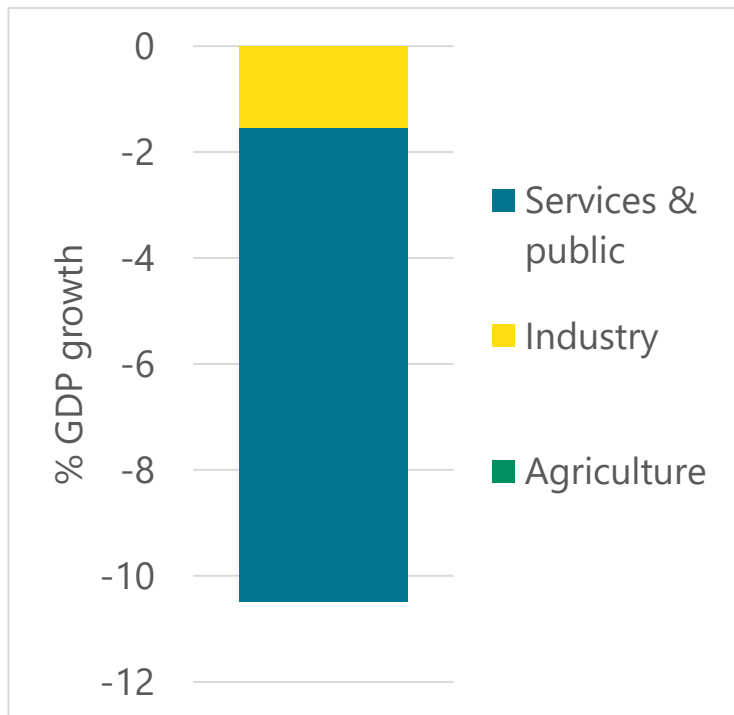
\*: Final energy consumption includes industry, transport, buildings and agriculture

G20 energy demand drop by 4.5%, mostly due to the economic recession + very specific situation of the transport sector:

- **China:** final consumption driven by a robust industry sector (including construction and real estate), lockdown during Chinese New Year (low activity)
- **USA:** GDP drop < final consumption drop because of the fall in transport
- **EU:** GDP drop > final consumption drop because of the importance of the services sector, incl. tourism (low energy-intensive sector)

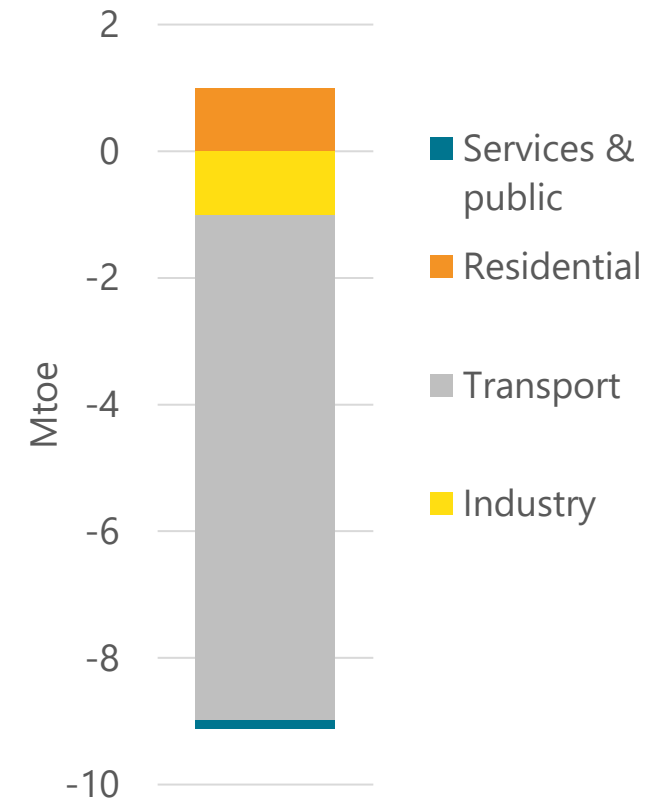
# Evolution of the economic structure and sectoral energy intensities - illustration for S1 2020 in the UK

## Contribution to recession by economic sector (% , Y-o-Y)



The services sector is accountable for most of the GDP drop (in blue on the graph on the left), and has a low energy-intensity, therefore the energy consumption reduction is smaller than that of the GDP.

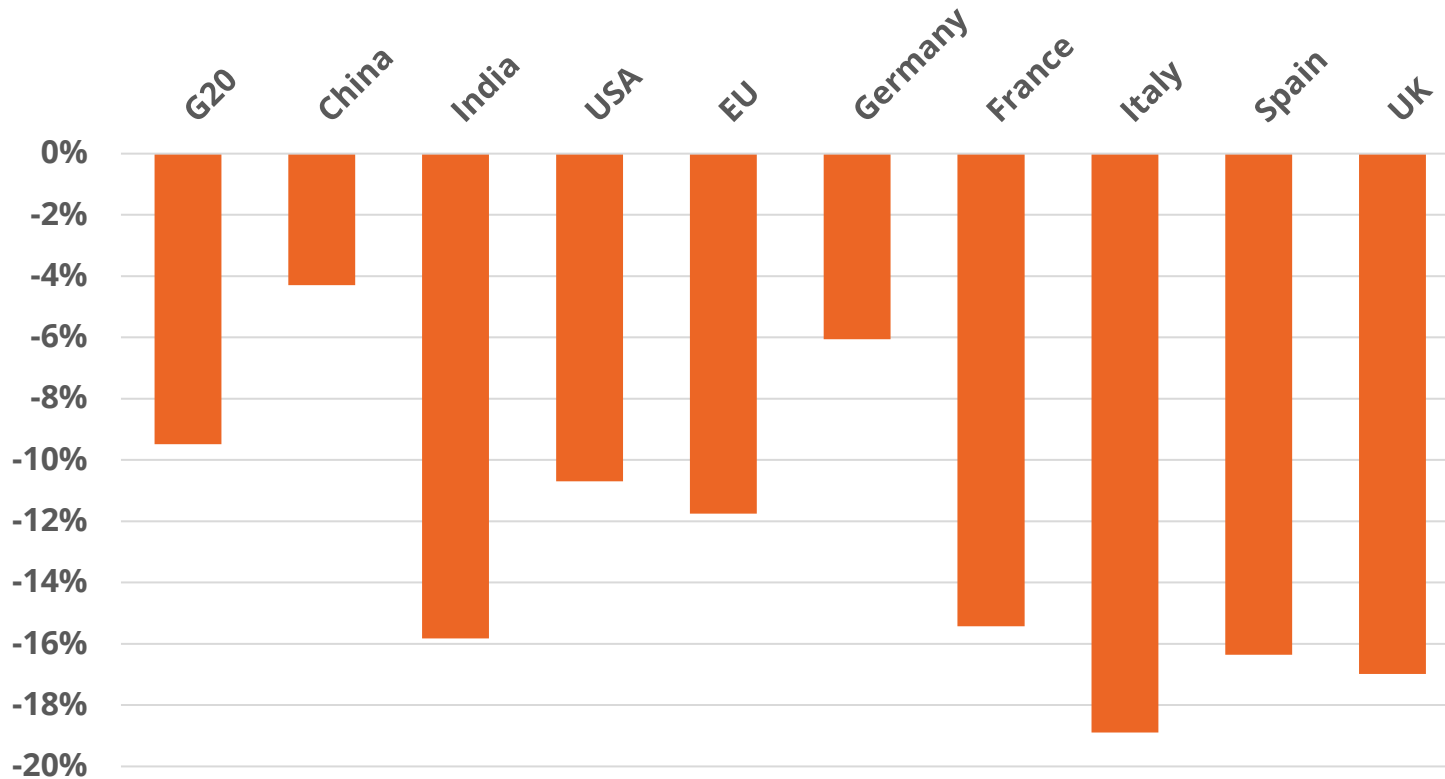
## Final energy consumption reduction by sector (Mtoe)



# Unprecedented fall of transport energy consumption (close to -10%)



## Final energy consumption of transport



\* Only domestic air transport is included here; international air transport is included in the global round-up.

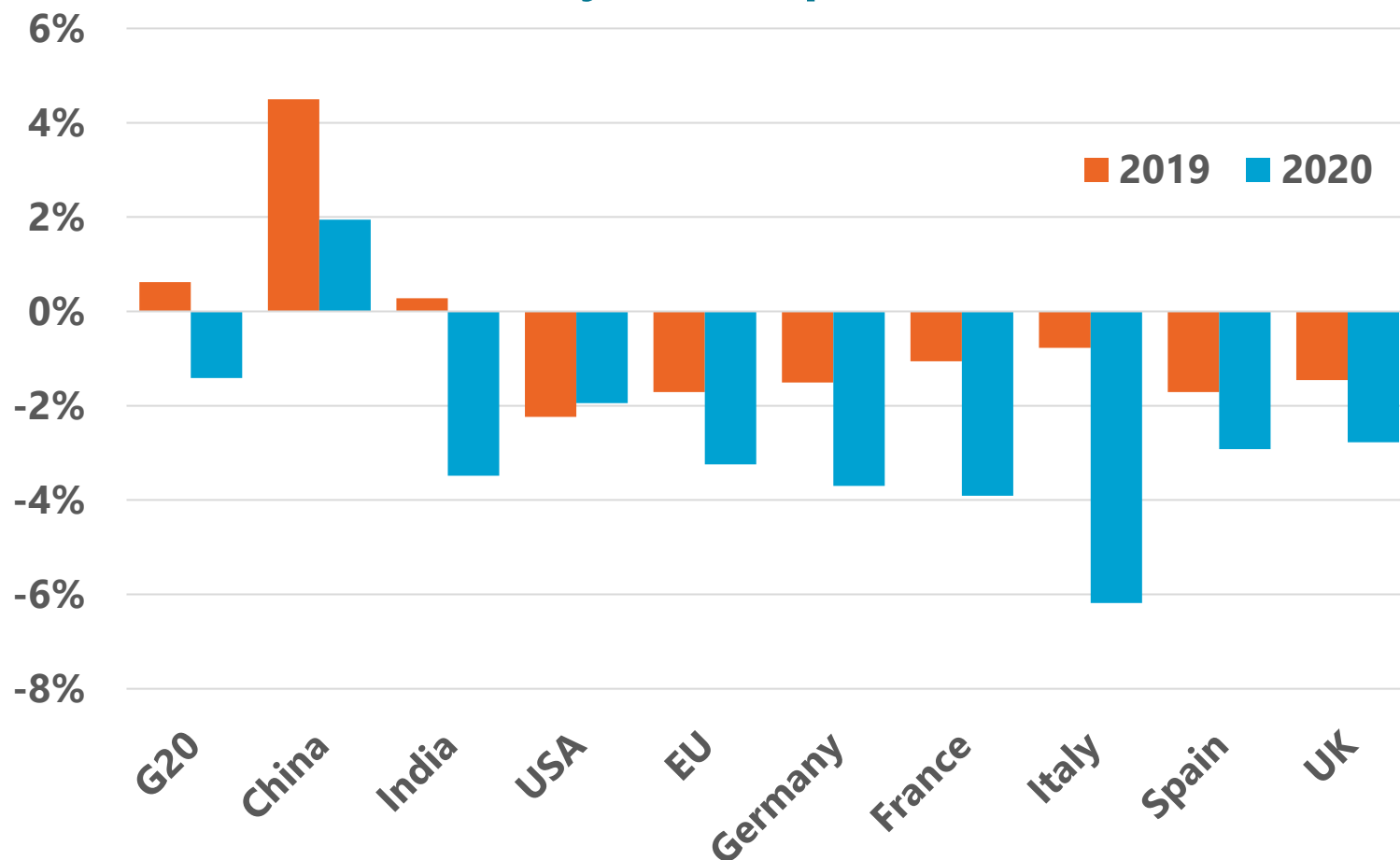
Source: Enerdata Estimates

- Transport of goods and people has experienced a sharp drop in 2020, and so did the energy consumption in the sector:
  - ✓ **Lockdown:** ground passenger transport and air transport\* (strong impact).
  - ✓ **Economic slowdown:** freight (lower impact) and business.
- Estimates are based on the lockdown duration and the speed of restart, using 6 to 8 months data on transport fuel consumption reductions.
- **EU**, except Germany: stringent lockdown measures.
- **USA:** road transport impact & internal flights.



# Limited decrease of electricity consumption in 2020

## Electricity consumption trends



Source: Enerdata Estimates

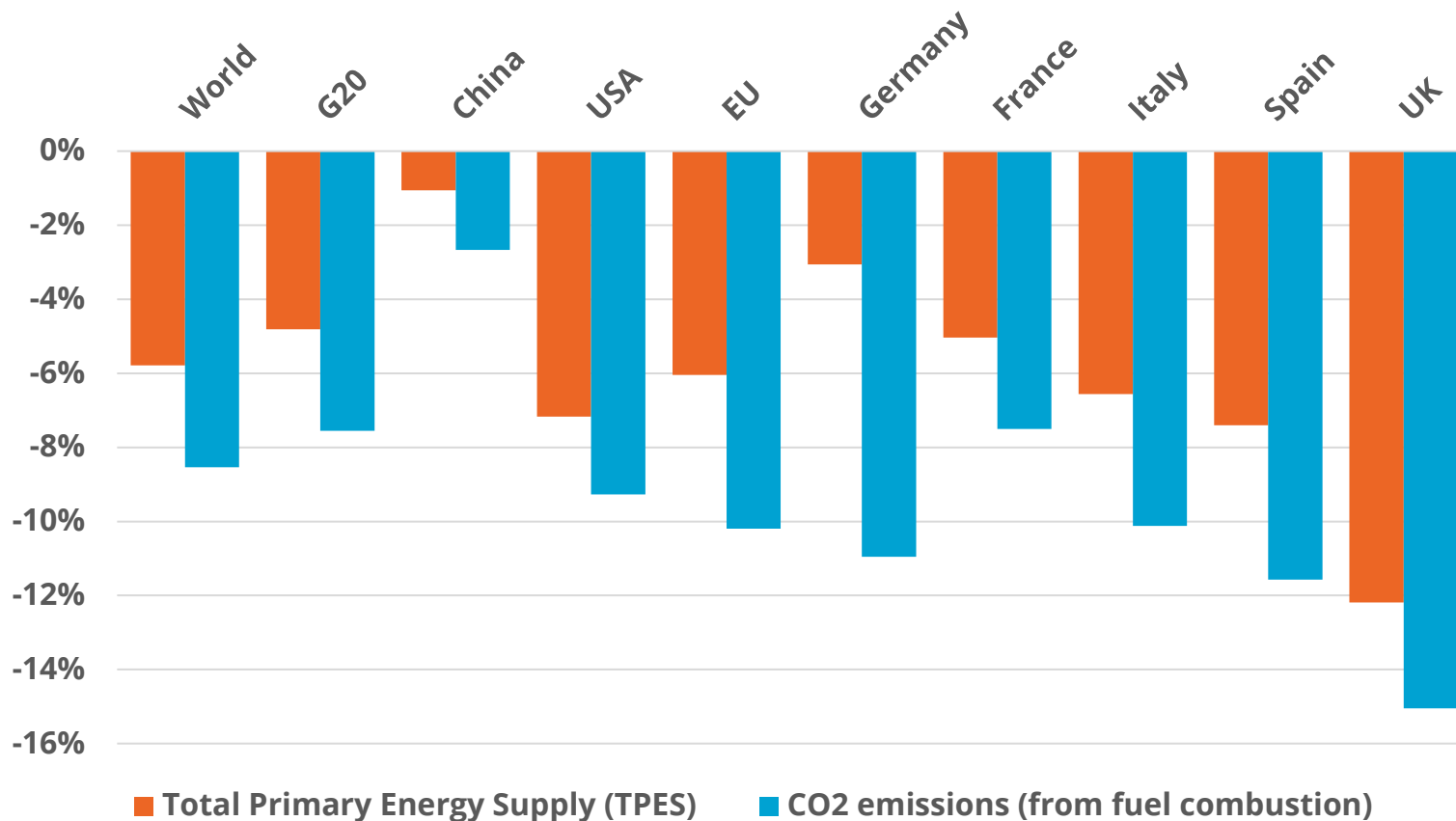
- While the energy consumption in the G20 is decreasing by around 5%, electricity demand should only decrease by around 1.5%.
- Electricity is an “**essential**” commodity
- The drop in power demand is due to:
  - ✓ industry, which is highly sensitive to economic activity,
  - ✓ tertiary sector, where the stringency of the containment plays a greater role.
  - ✓ residential sector records positive growth.
- During lockdown, electricity consumption fell by up to 15-20% depending on the country.

# Sharp forecasted drop in CO<sub>2</sub> emissions: -8.6 %

## Beyond the drop in energy consumption



Change in CO<sub>2</sub>-energy emissions and energy consumption - Forecasts 2019/20



- Energy-related CO<sub>2</sub> emissions vary as does the consumption of fossil fuels (coal, gas and oil).
- Emissions are falling everywhere faster than energy consumption:
  - ✓ **Less carbon-intensive electricity mix**, especially in the EU and the USA.
  - ✓ **Sharp drop in transport consumption** (high emission sector).

# 2020 New Estimates: World



Economic growth: -4.5%

Source: OECD Sept 2020



-5.9%

Energy  
consumption\*



-8.6%

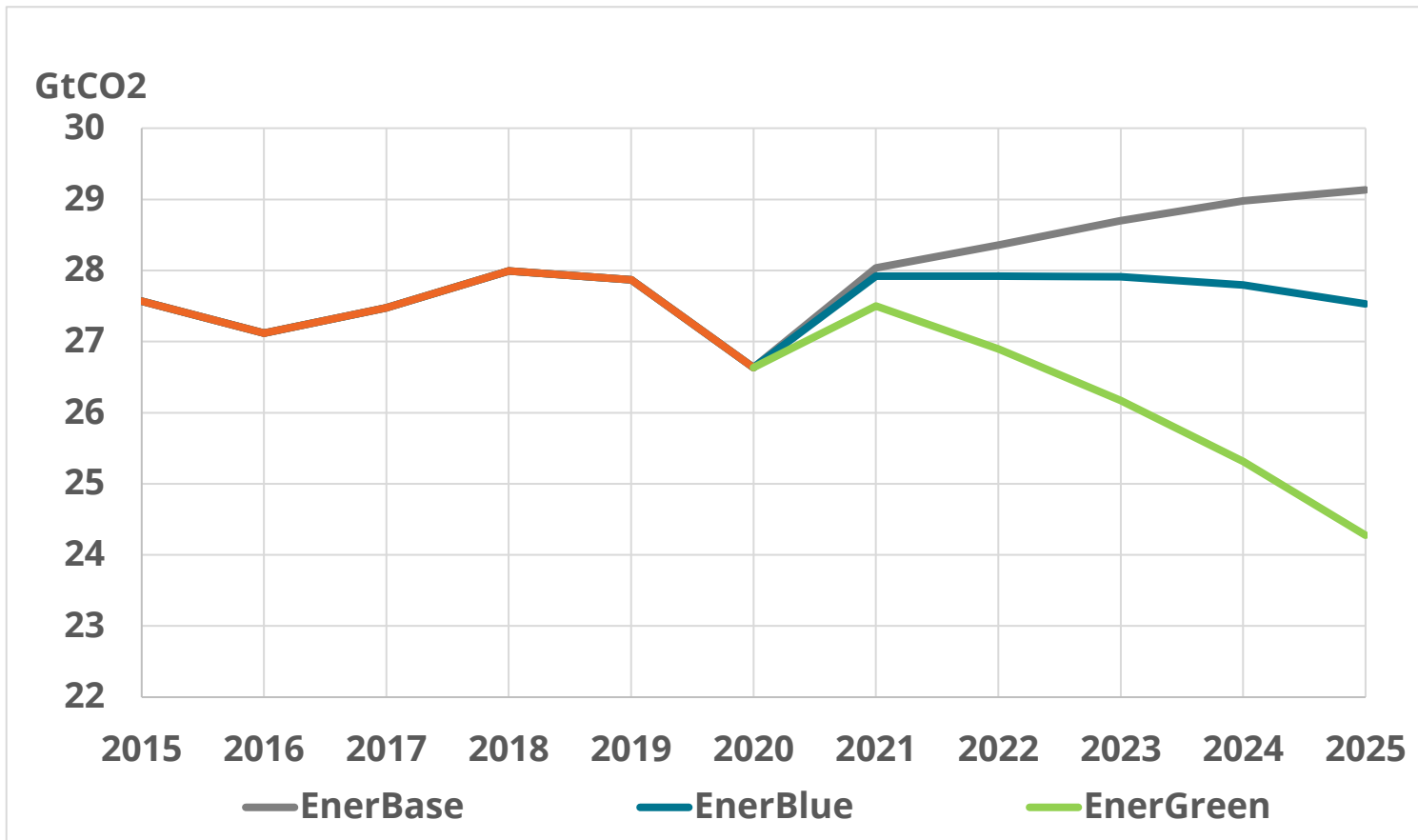
CO<sub>2</sub>  
emissions\*

- Energy consumption is falling 30% faster than the GDP
- CO<sub>2</sub> emissions are decreasing 50% faster than energy consumption, due to the higher impact of the economic crisis on sectors with a relatively high carbon factor (thermal power generation, transport)



# The color of recovery packages will strongly influence chances achieving Paris Agreement

## CO<sub>2</sub> energy combustion emissions in the G20



- All scenarios include a rebound of CO<sub>2</sub> emissions in 2021
- Green packages may have impacts as early as 2025

- **EnerBase:** business as usual
- **EnerBlue:** current climate policies implemented
- **EnerGreen:** in line with Paris Agreement

Source: Enerdata Estimates

# Enerdata

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**Thank you for your attention!**

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