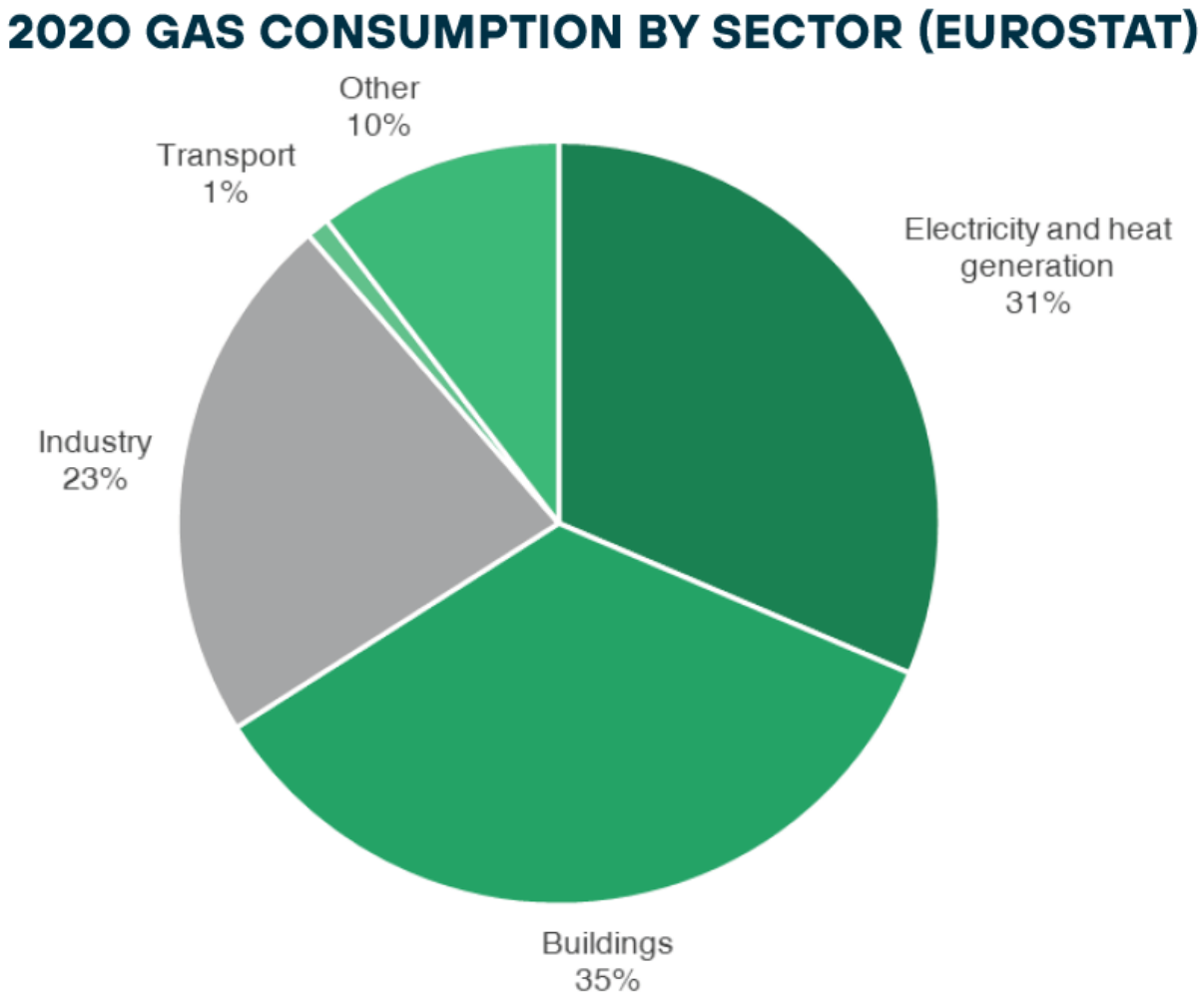
ROLE OF GAS IN THE EU ENERGY SYSTEM AND EU POLICY

EU Gas consumption in 2020

EU gas imports totalled **400 billion cubic meters (bcm) in 2020,** of which 152 bcm came from Russia (38%).

Most of this gas is supplied via pipeline, although Russia has expanded its liquified natural gas (LNG) export business over the last few years.

EU consumption of gas for energy use is dominated by buildings (35%) and electricity and heat generation (31%), with most of the remainder used for industry (23%).



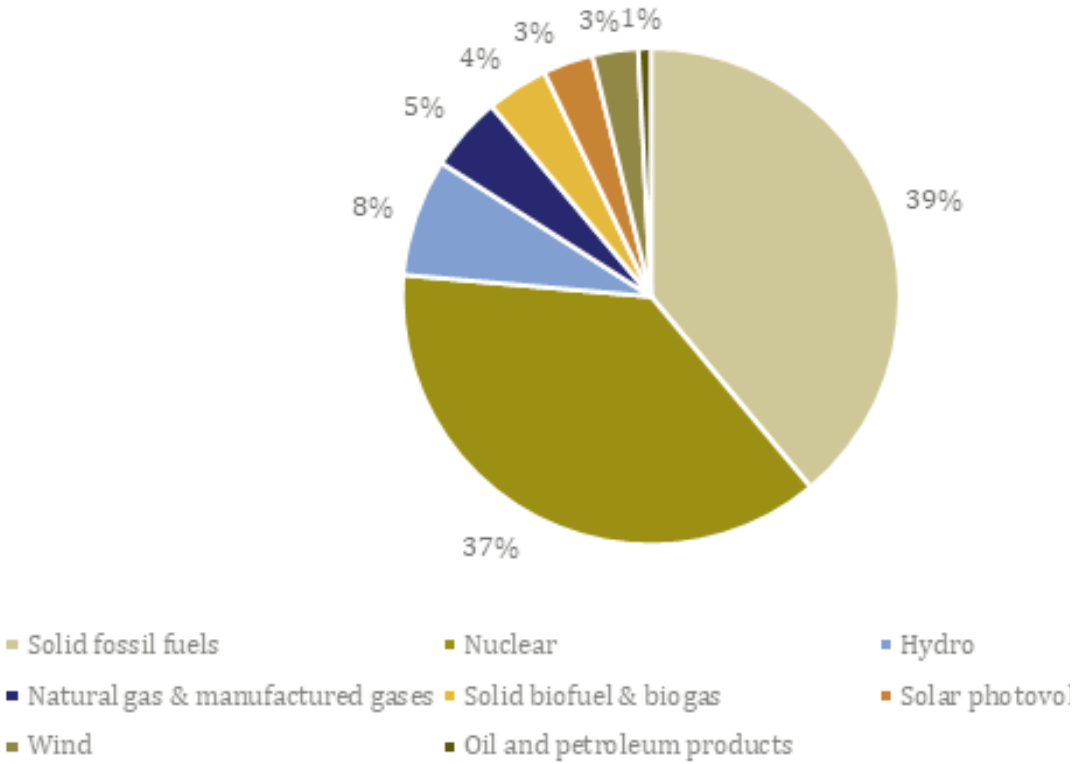
EU Gas consumption in 2020

- In 2020, just under **two-thirds of gas consumption was available for final end use**, the rest was required for transformation and energy sector input. The relative share of gas available for final use has declined from 71% in 2014 to 64% in 2020, pointing at an overall efficiency loss in the EU gas sector – possibly due to higher shares of LNG.

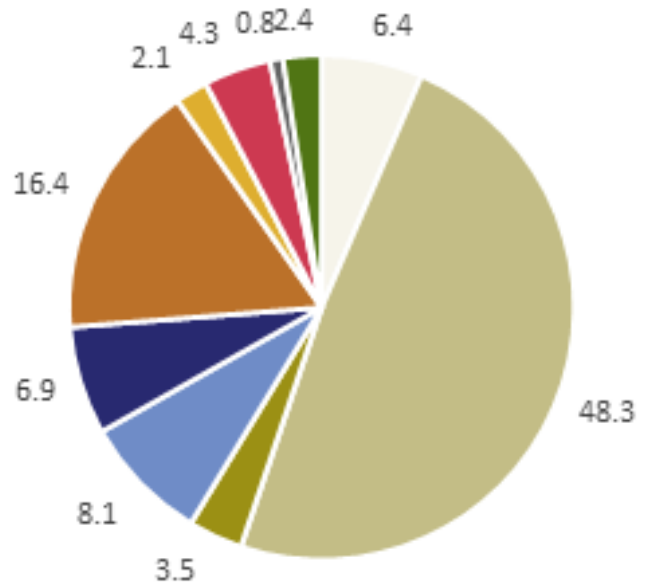
- EU final consumption of gas for energy use is dominated by households (41% - cooking, heating) and industry (38%), with most of the remainder used for power generation (18%).

National variations of use of gas

Bulgaria's Electricity generation by source (2019), in % of t

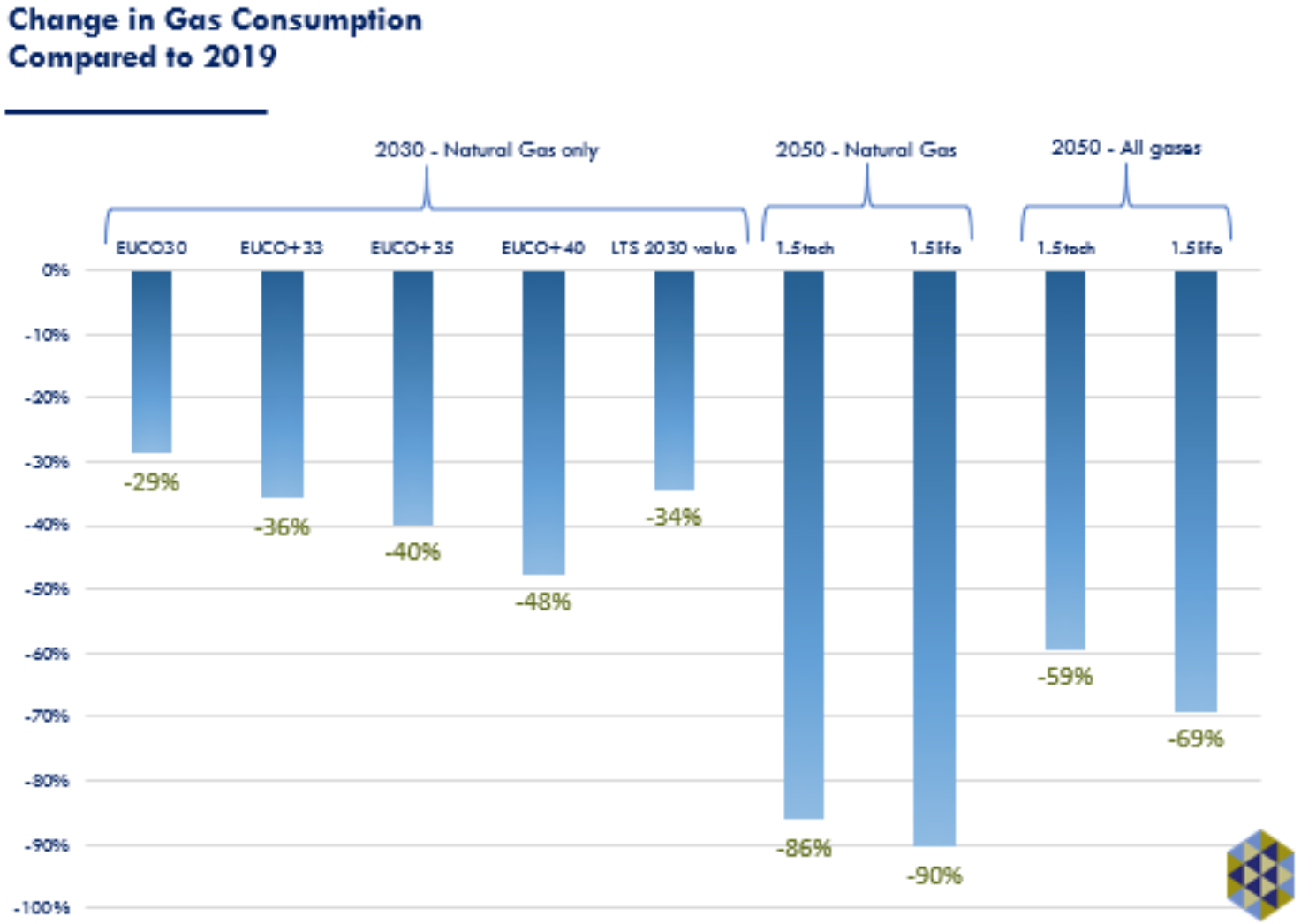


Italy's Electricity generation by source (2019), % of total



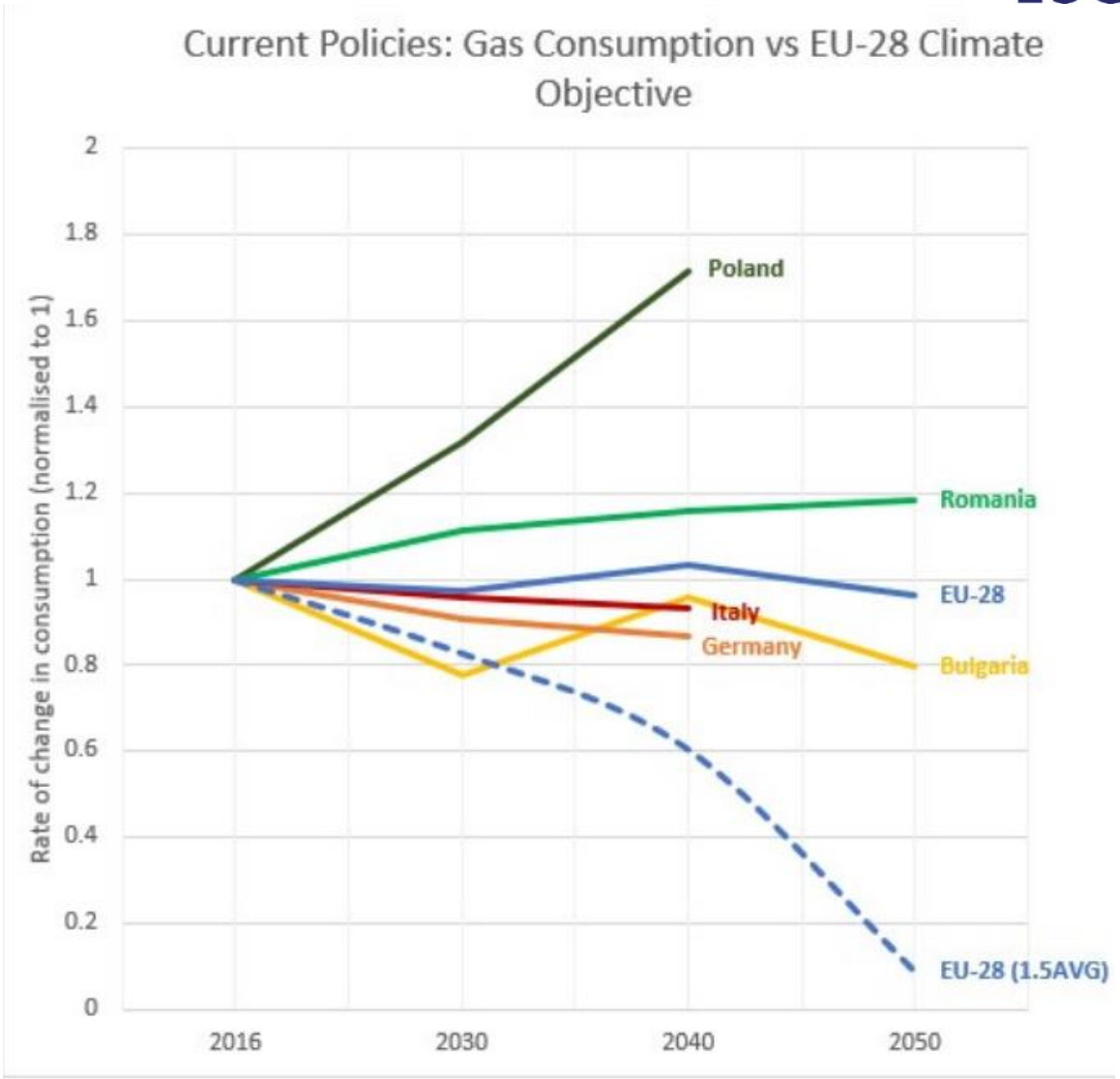
Where are we heading to?

- The EU Green Deal, climate neutrality and the FF55 discussion built a strong frame for a speedy and ambitious energy transition through the recovery efforts.
- Most projections see an almost complete elimination of natural gas by 2050.
- At EU level, gradual change away from “status quo”. **Priorities on directing public resources and political capital shifted after the pandemic and evolved again since the start of the war in Ukraine.**



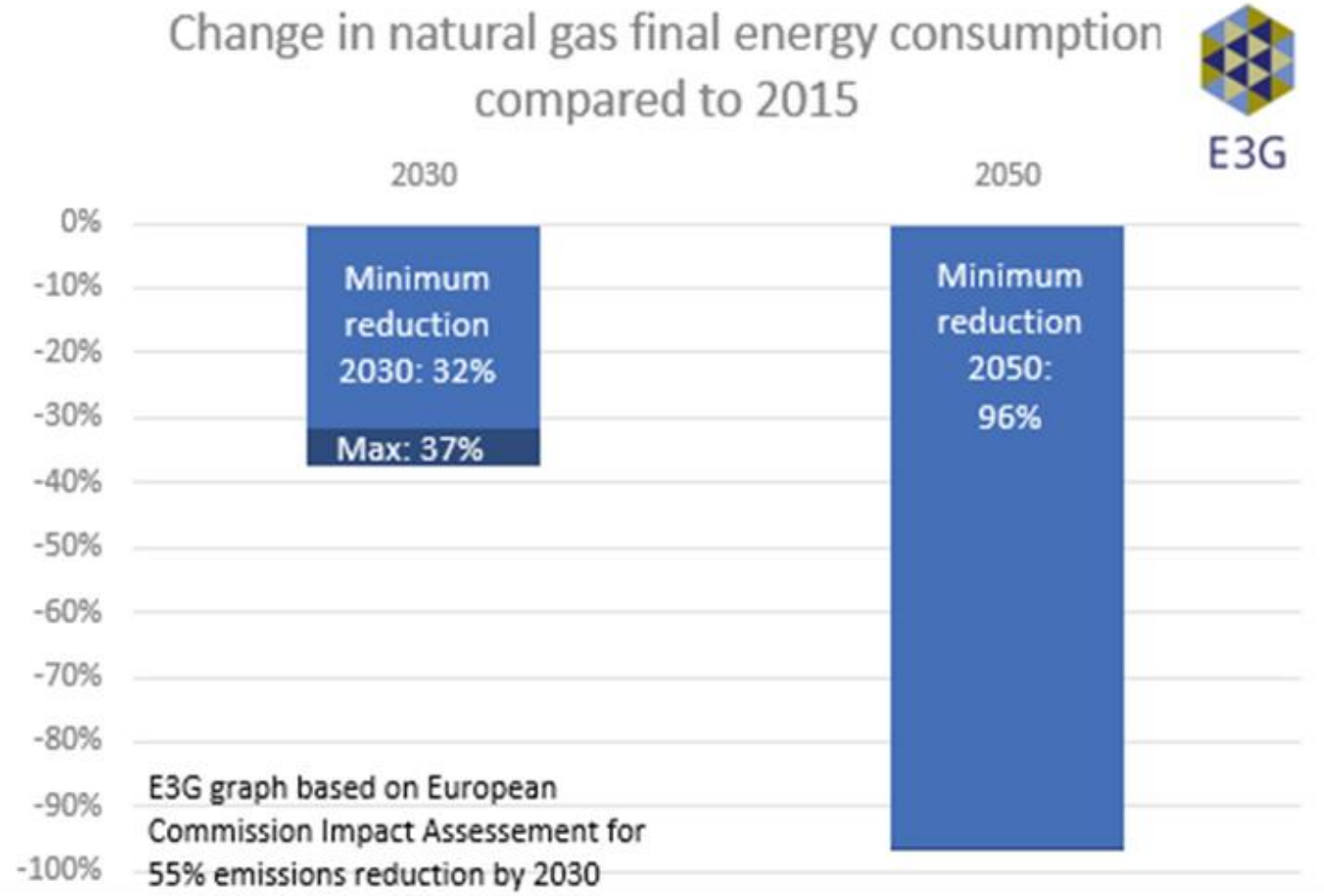
Comparison of numbers, LTS vs. FF55

- The EU NECPs and LTS of 2018-2019 were planning a very clear coal to gas switch, at odds with the Paris aligned projections.
- The current situation should trigger a revision of these policies, along with the expected revision of NECPs.
- Most of the countries in this graph are heavy Russian gas consumers.
- Exact impact of RU situation on this countries' energy strategy yet to be assessed.

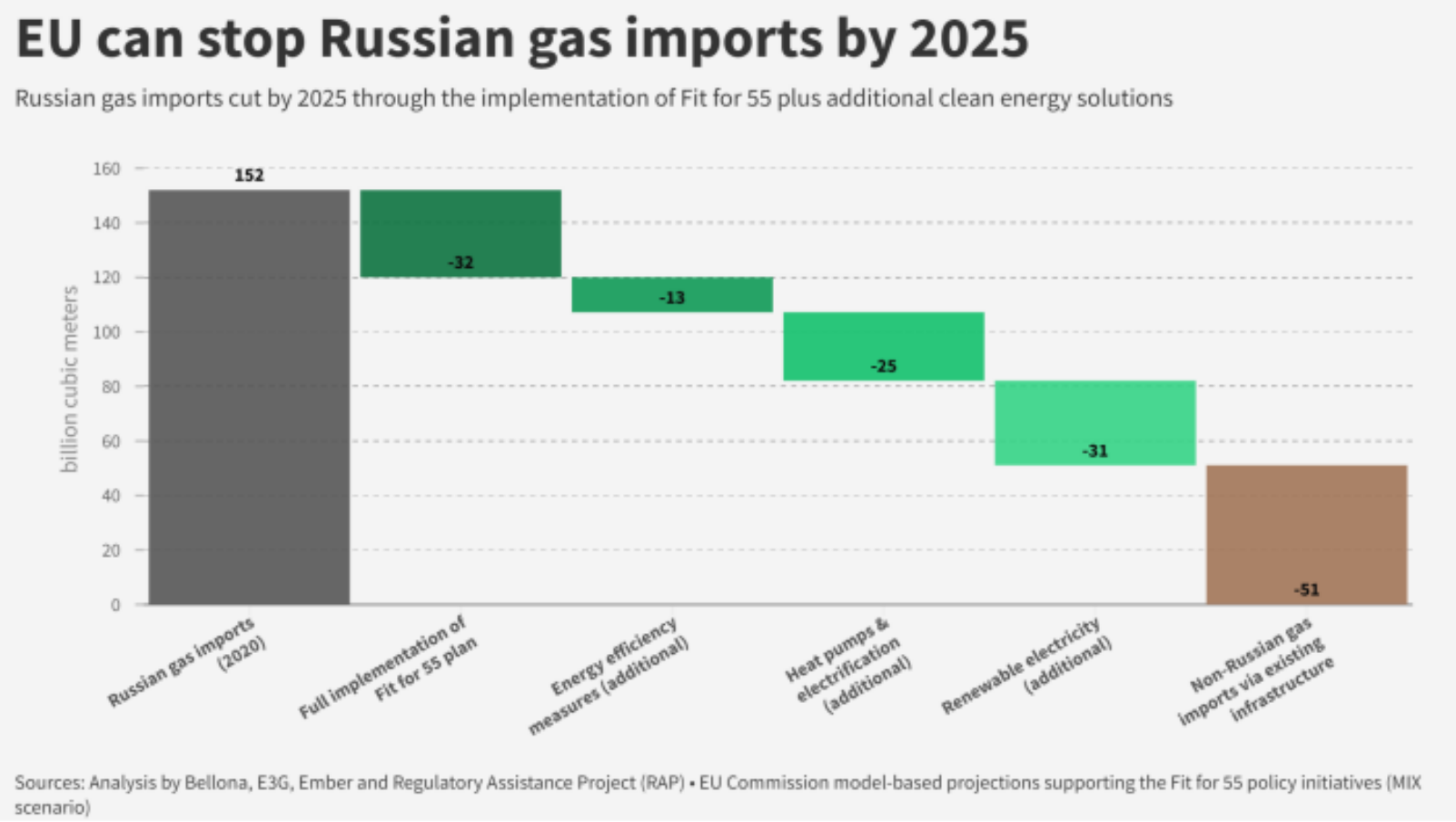


Comparison of numbers, LTS vs. FF55

- EU modelling of the Climate Law (2020) points out to a clear pathway of gas consumption decline.
- This reduction underlying the Climate Law calculations **is not always reflected in the Fit for 55 proposals** (July 2021) or the gas package proposal (December 2021)
- The REPowerEU acknowledges new savings of 40 bcm by the end of 2022 (30% of the current gas consumption) but focused on RU gas phase-out, not general gas phase-out.



The EU can stop Russian gas imports by 2025



Additional measures:

- **EE**: 2/3 in households, 1/3 in industry. Industry numbers based on other research.
- **HPs & electrification:** 2/3 HH, 1/3 industry. Accounts for additional electricity use + subtracts savings from EE.
- **RE:** solar exceeding FF5 expectations, wind lagging behind (permitting).
- We do not include
  - **H2 or biogas – assumption that at this stage direct use of electricity has higher gas displacement potential** & that biogas may come into conflict with food production.
  - Geothermal – some potential but this time horizon is challenging.
  - “turn down the thermostat”- as we think this may only work for a short period rather than out to 2025.

The EU can stop Russian gas imports by 2025

CLEAN ENERGY AND ENERGY EFFICIENCY CAN REPLACE TWO-THIRDS OF RUSSIAN GAS IMPORTS BY 2025.

Russian gas imports can be cut by 66% by delivering the EU's Fit for 55 package and accelerating the deployment of renewable electricity, energy efficiency and electrification. This is equivalent to a total reduction of 101 billion cubic meters (bcm). An urgent uplift in policy is now required to achieve the necessary level of implementation.

NEW GAS IMPORT INFRASTRUCTURE IS NOT REQUIRED.

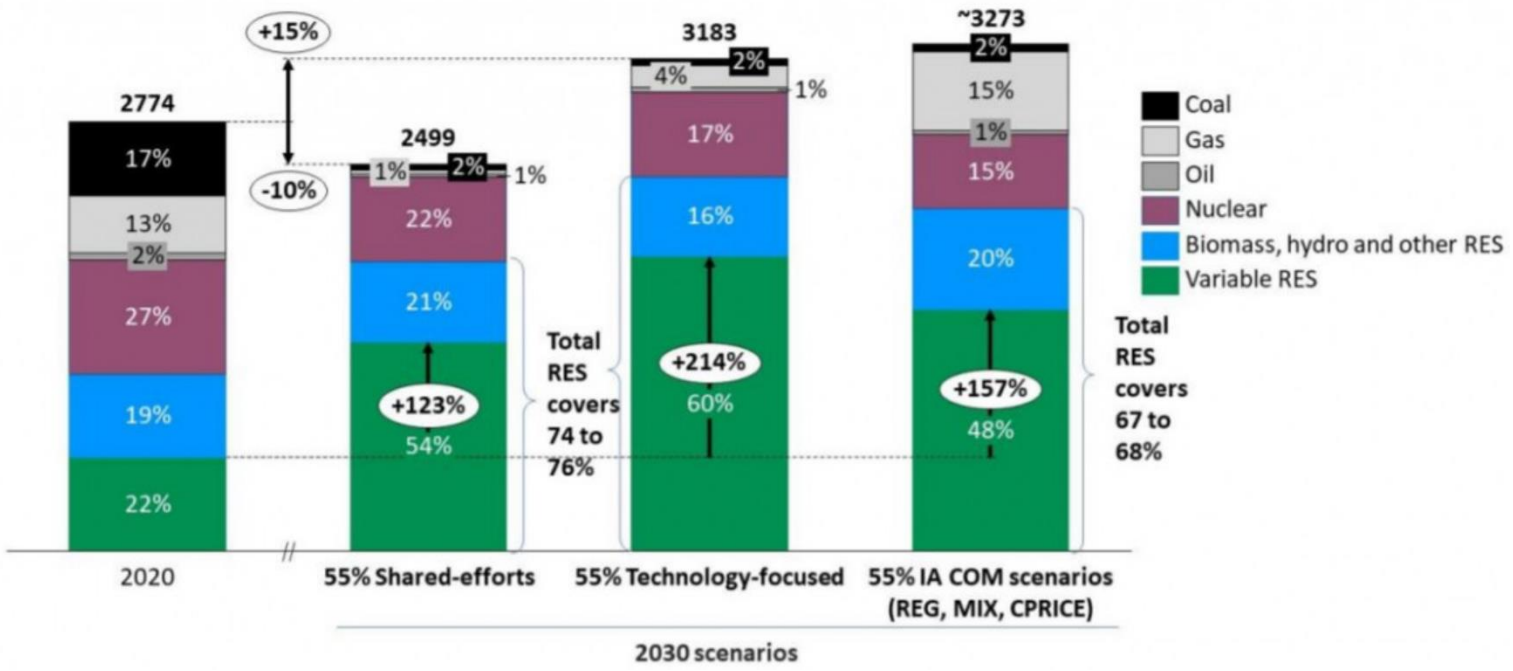
Security of supply and reduction of Russian gas dependence does not require the construction of new EU gas import infrastructure such as LNG terminals. Alternatively sourcing 51 bcm of gas imports via existing assets is sufficient.

COAL POWER DOES NOT NEED TO BE EXTENDED.

The above measures would enable the EU to achieve the necessary decrease in fossil gas demand without slowing the decline of coal-fired electricity generation.

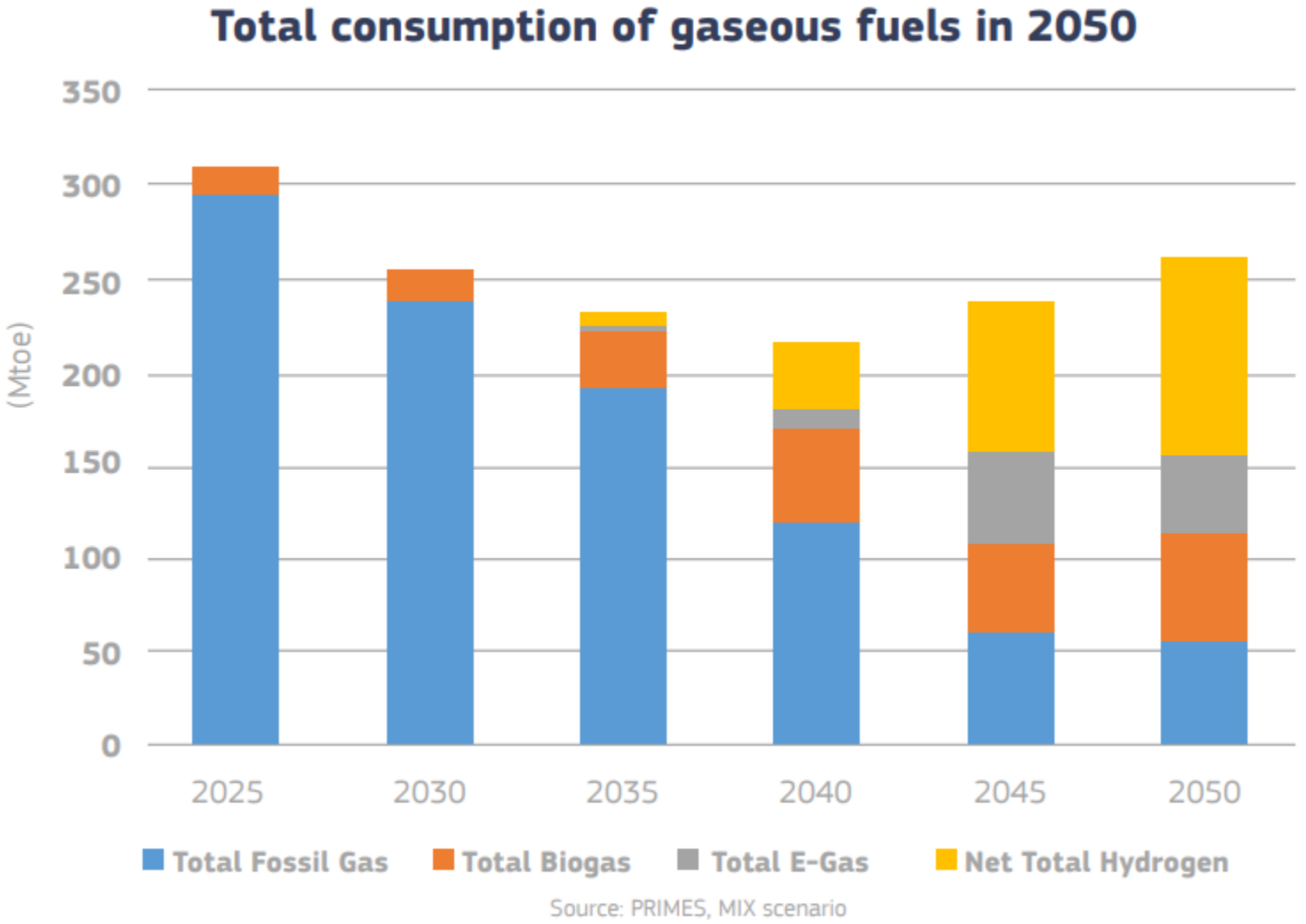
Coal power does not need to be extended

- The analysis takes the speed of the FF55 analysis as baseline out to 2025.
- While the FF55 numbers themselves group all fossil fuels together, Ecologic analysis suggested the FF55 numbers implicitly entail a near full phase out of coal by 2030 (2% of generation).



Gas package proposal: replacement options

- The Commission foresees a 1 to 1 replacement of fossil gas by renewable and low-carbon gases.
- Most of the current studies show that hydrogen will be a scarce resource and should benefit from targeted deployment.
- These projections now need to factor in the new price of gas and gas-based fuels (blue h2).



About E3G

E3G is an independent climate change think tank accelerating the transition to a climate safe world.

E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2018, for the third year running, E3G was ranked the fifth most globally influential environmental think tank.

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