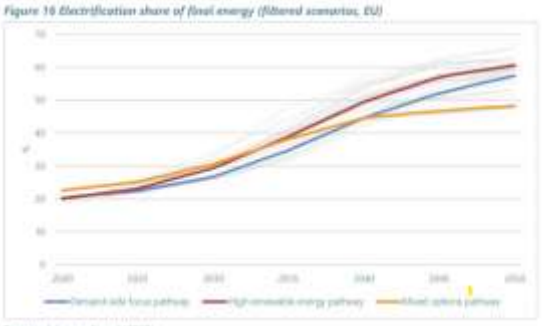
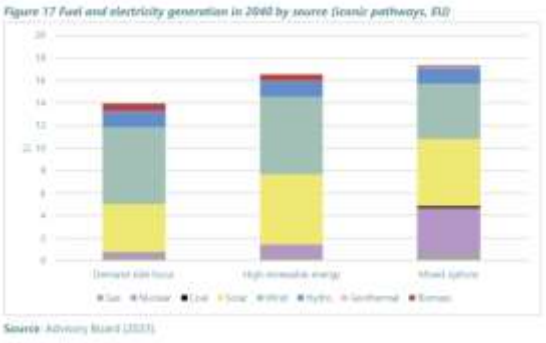
CurrENT welcomes the European Commission's intention to propose a Union-wide 2040 climate target in accordance with Article 4 of the EU Climate Law.

In its call for evidence, the European Commission is right to highlight that Russia's invasion of Ukraine has triggered "the strategic vulnerability that comes with dependence on the use of fossil fuels, which is the main driver of climate change." The European Commission also correctly links the stabilisation of the world's climate to our ability to end our reliance on fossil fuels, pointing out "the need to step up the transition to clean energy, energy efficiency and climate neutrality in the EU". However, the need for modernising and establishing new, innovative electricity grid infrastructure to support the transition to decarbonisation seems hugely unappreciated. The call for evidence does not mention grids at all.

On 15 June, the EU's advisory body on climate change - The European Scientific Advisory Board on Climate Change (ESABCC) – presented its science-based recommendation of achieving EU net emissions reductions of 90-95% before 2040, relative to 1990 levels[1]. Such a reduction would require a doubling to more than 50 % of electricity's share of final energy demand (see graphs). Renewable energy source, especially solar and wind (and excluding bioenergy) would be likely to meet more than 85% of electricity, according to ESABCC.





All pathways to meet Europe's agreed 2050 decarbonisation target, would imply a 2040 energy system largely dependent on a fully decarbonised electricity supply, predominantly based on variable wind power and intermittent solar power. For such an energy system to materialise, Europe must start planning and deploying innovative grid enhancing technologies and advanced power cable technology.
These pathways and the Union's growing ambitions (Green Deal, Fit For 55, REPowerEU, Net-Zero Industry Act) underscore the need for a realistic consultation framework that

[1] EU climate Advisory Board recommends ambitious 2040 climate target and urgent transitions for the European Union (europa.eu)

puts our future electricity transmission and distribution system at the centre of the analysis. CurrENT recommends the development of reference grids for 2040, as well as for 2030 and 2050. The main reference grid should be the 2050 grid required for a decarbonized Europe and all intermediate reference grids must comply with the pathway and carbon budgets needed to reach the goals agreed by the European Climate Law (Regulation (EU) 2021/1119).

For 2040, the Ten Year Network Development Plan must reflect what is needed to reach European economy-wide decarbonization in 2050. For the electricity sector, that would require full decarbonization well before 2040. In addition, the infrastructure must be able to support the decarbonization through electrification of the heating, transport, and industrial sectors. No European grid model depicting the supporting grid infrastructure needed to reach our climate and energy targets currently exist, including the ten-year network Development Plan (TYNDP). CurrENT suggest that such a grid plan with decarbonisation reference grids, that are compatible with the carbon budgets, is developed for the European Commission, by an independent agency in an open and transparent process, for example the Joint Research Centre.