

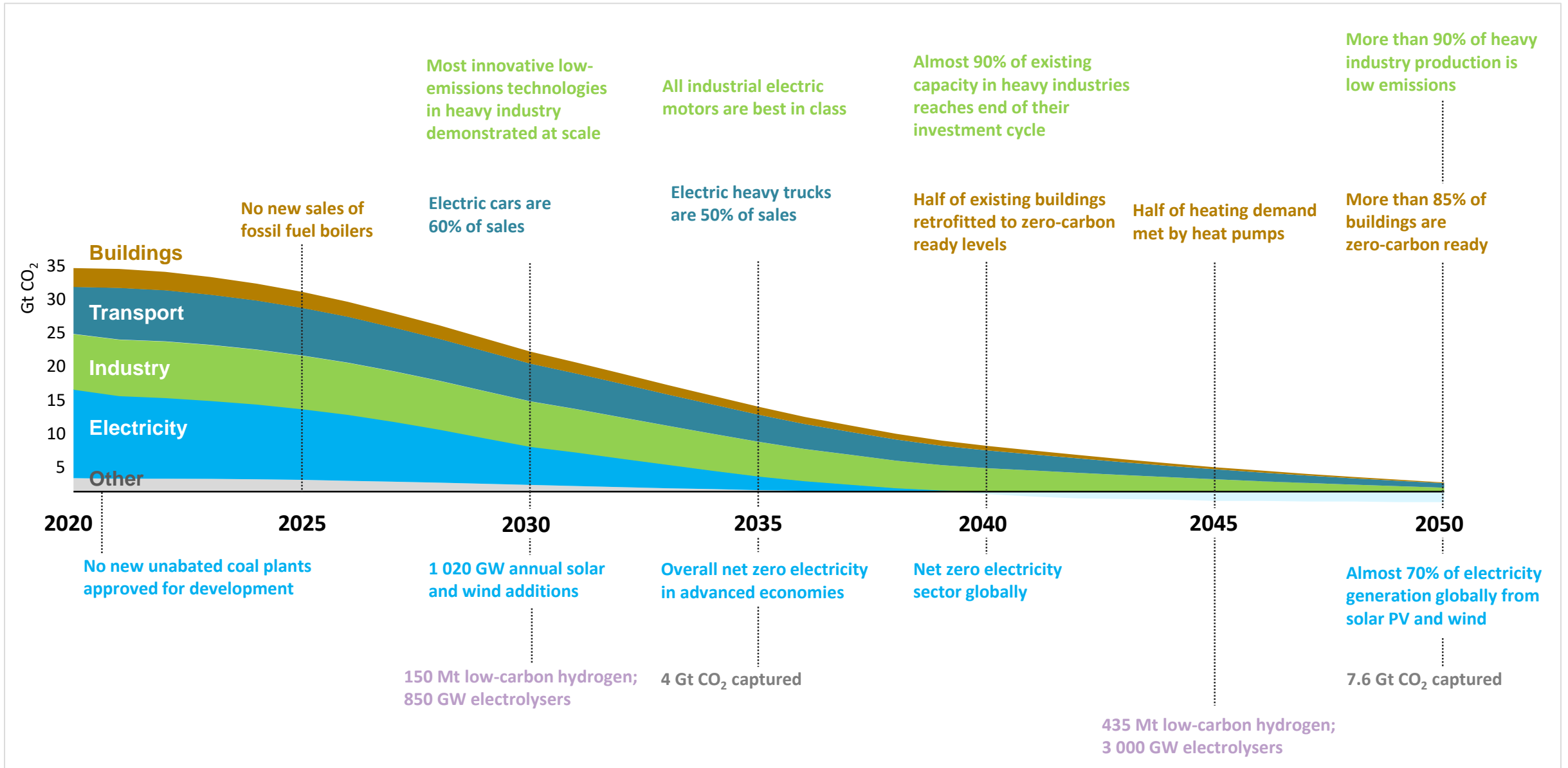


Electrification across the industry sector

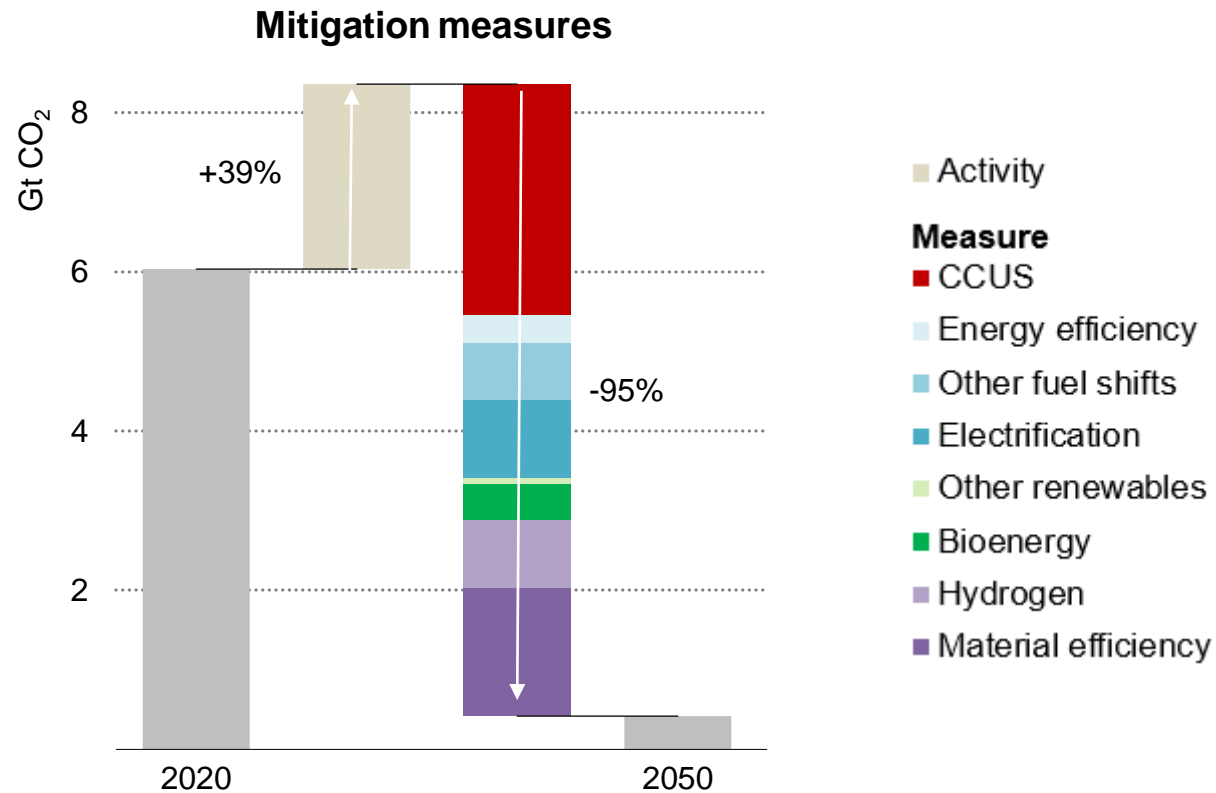
Hana Mandova

8th Annual EPRI-IEA Workshop, October 2021

Decarbonisation efforts have to be undertaken across all sectors



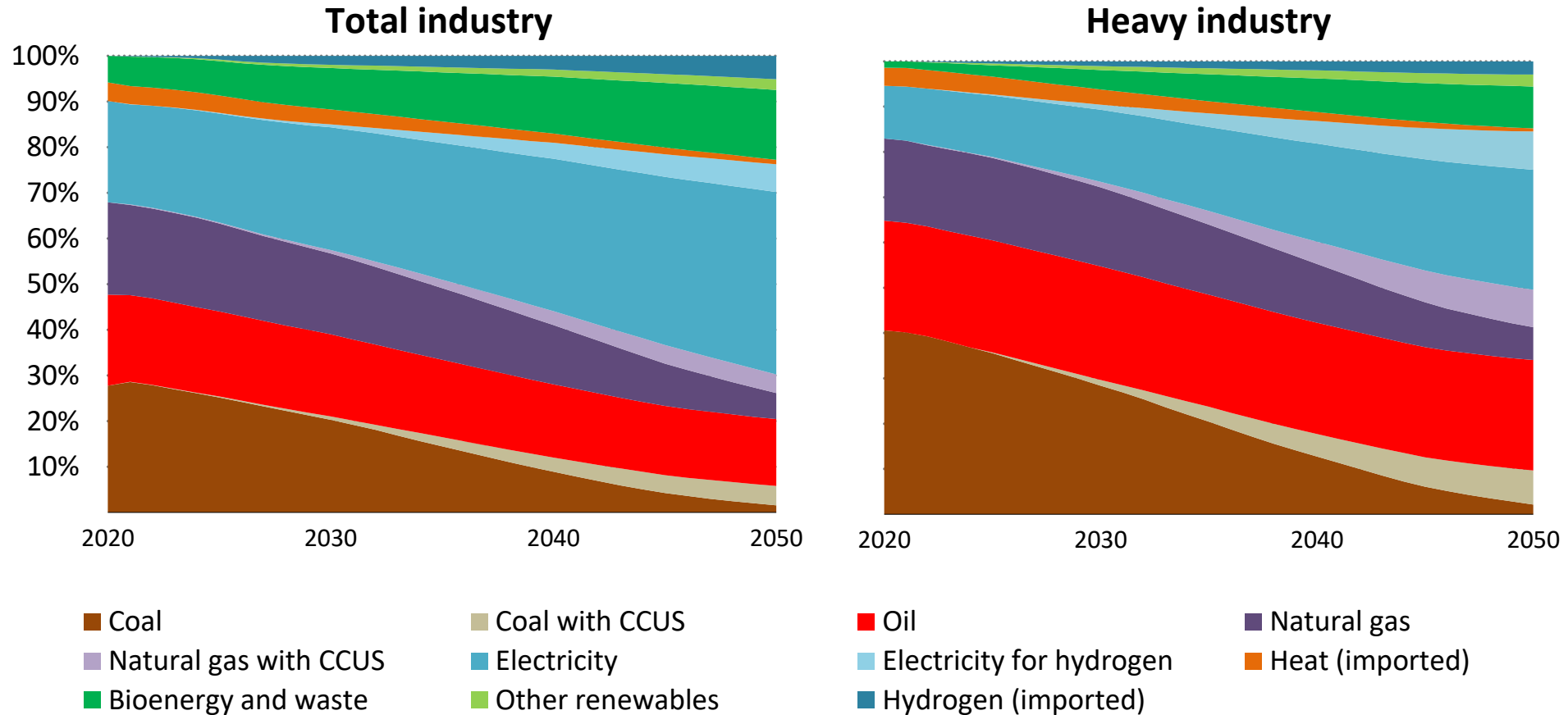
Global CO₂ emissions reductions in heavy industry by mitigation measure, NZE scenario



An array of measures reduces emissions in heavy industry, with innovative technologies like CCUS and hydrogen playing a critical role

Industry energy demand shifts towards low carbon fuels

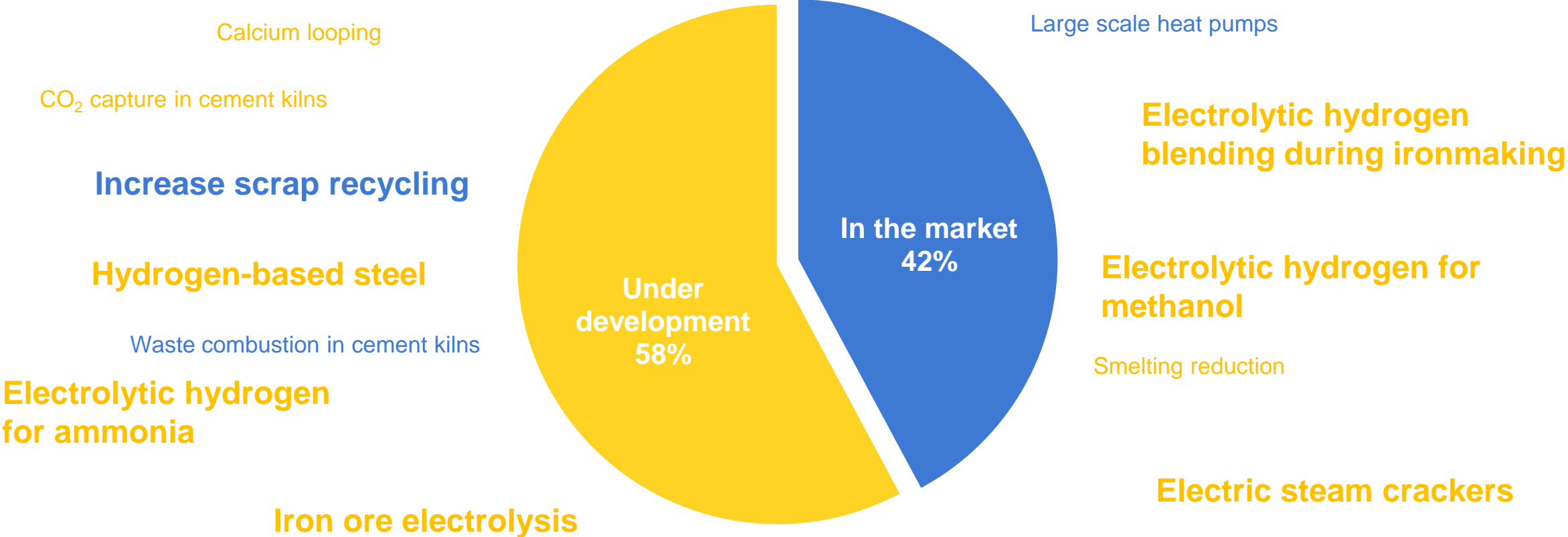
Global final energy demand in industry, NZE scenario



Fossil fuel use in industry is halved by 2050 in the Net Zero Emissions (NZE) Scenario whilst the demand for electricity more than doubles

Decarbonisation of industry requires innovation

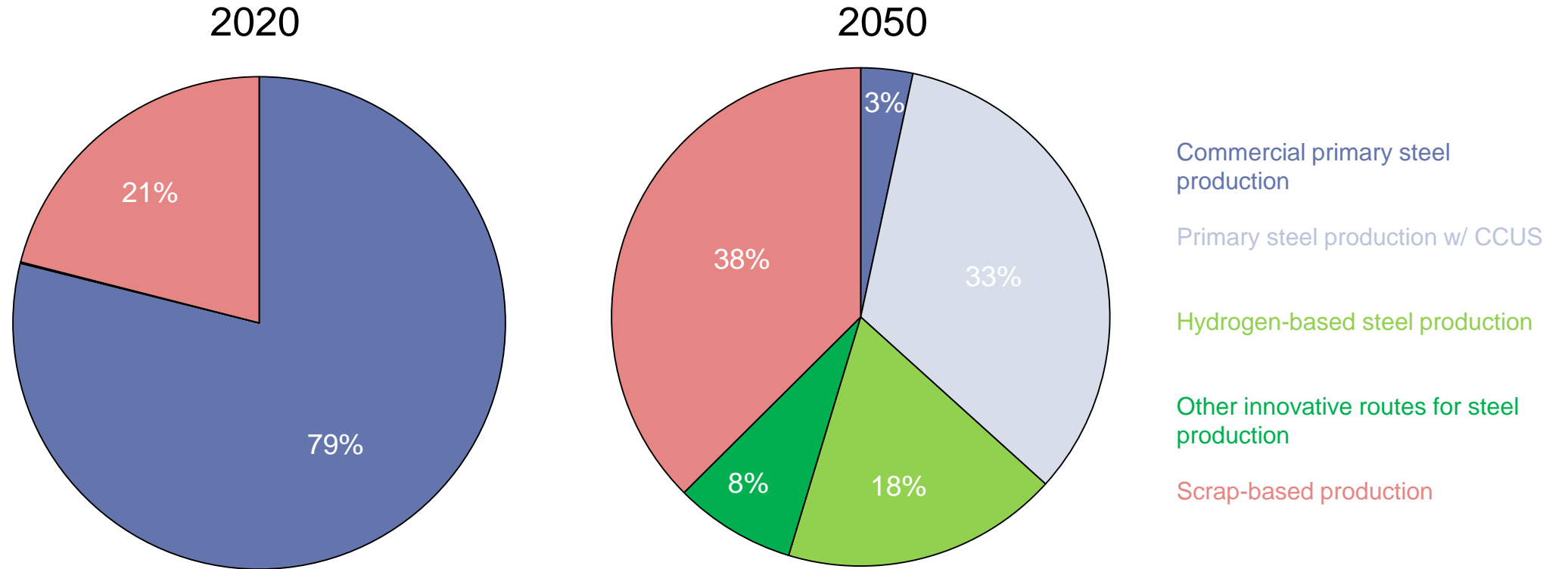
CO₂ savings by technology maturity in heavy industry in 2050, NZE scenario



Electricity-based technologies are crucial for heavy industry decarbonisation. Further RD&D is required so that they reach the market in the next decade.

Innovative technology deployment in iron and steel sector

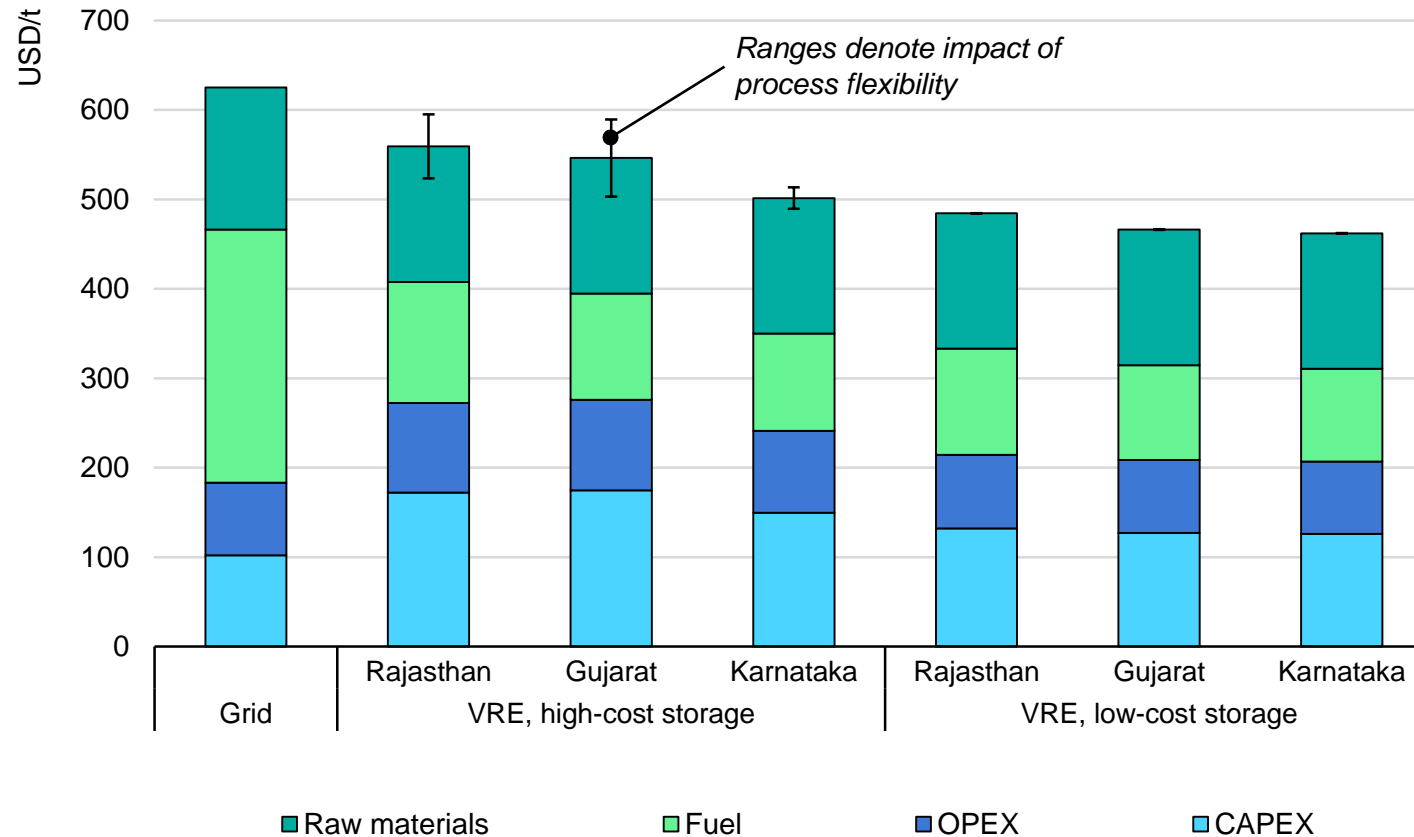
Share of innovative technology deployment in steel production, NZE scenario



Most of the close to near-zero technologies for iron and steelmaking are dependant on electricity.

Variable renewable electricity (VRE) can reduce costs

Simplified levelised cost of hydrogen-based direct reduced iron steel production in India



Process flexibility and low-cost hydrogen storage are necessary to make VRE feasible in industry.

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