

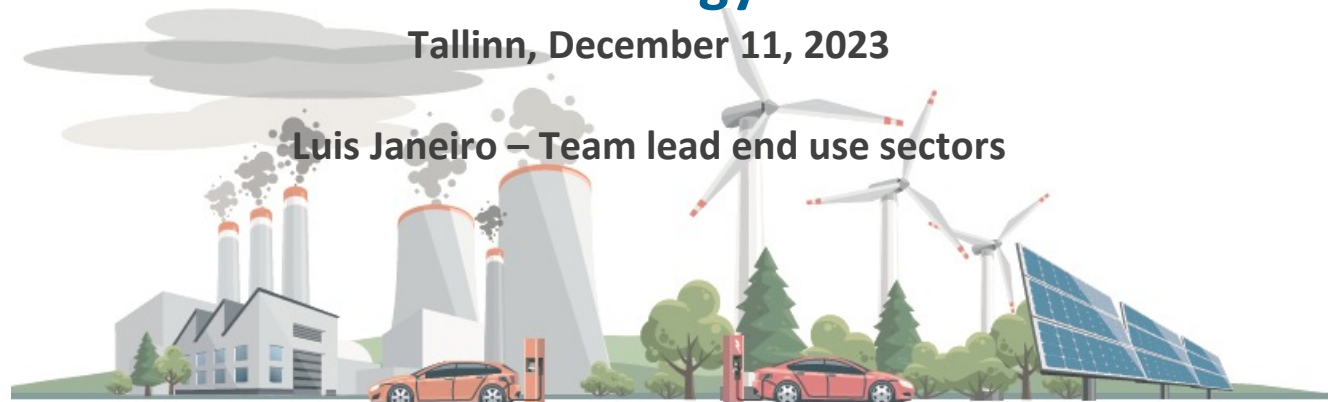
The global outlook for renewable energy

The challenge of managing intermittency

Nordic-Baltic Energy Conference

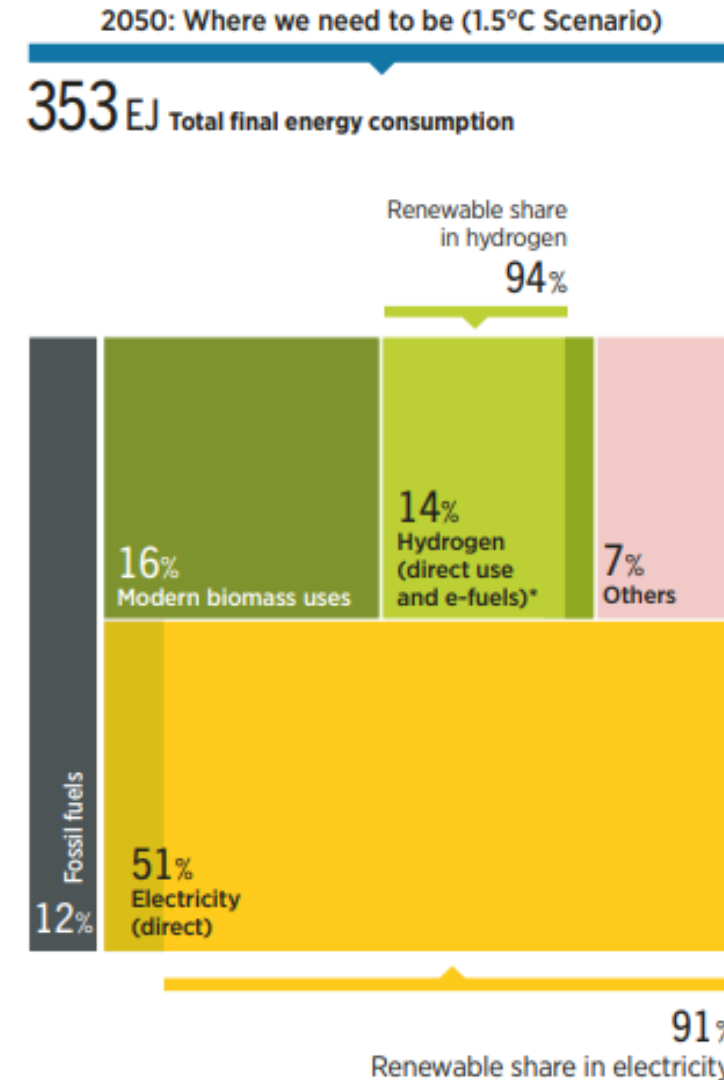
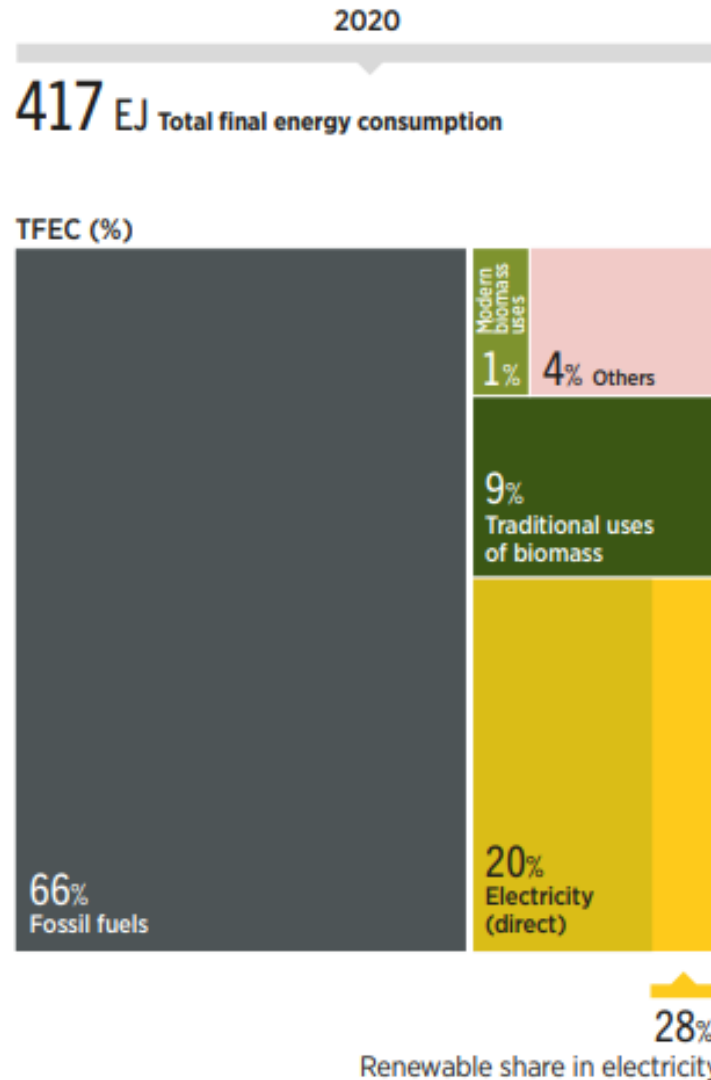
Tallinn, December 11, 2023

Luis Janeiro – Team lead end use sectors



The decarbonization of the global energy system requires decisive electrification of end use applications

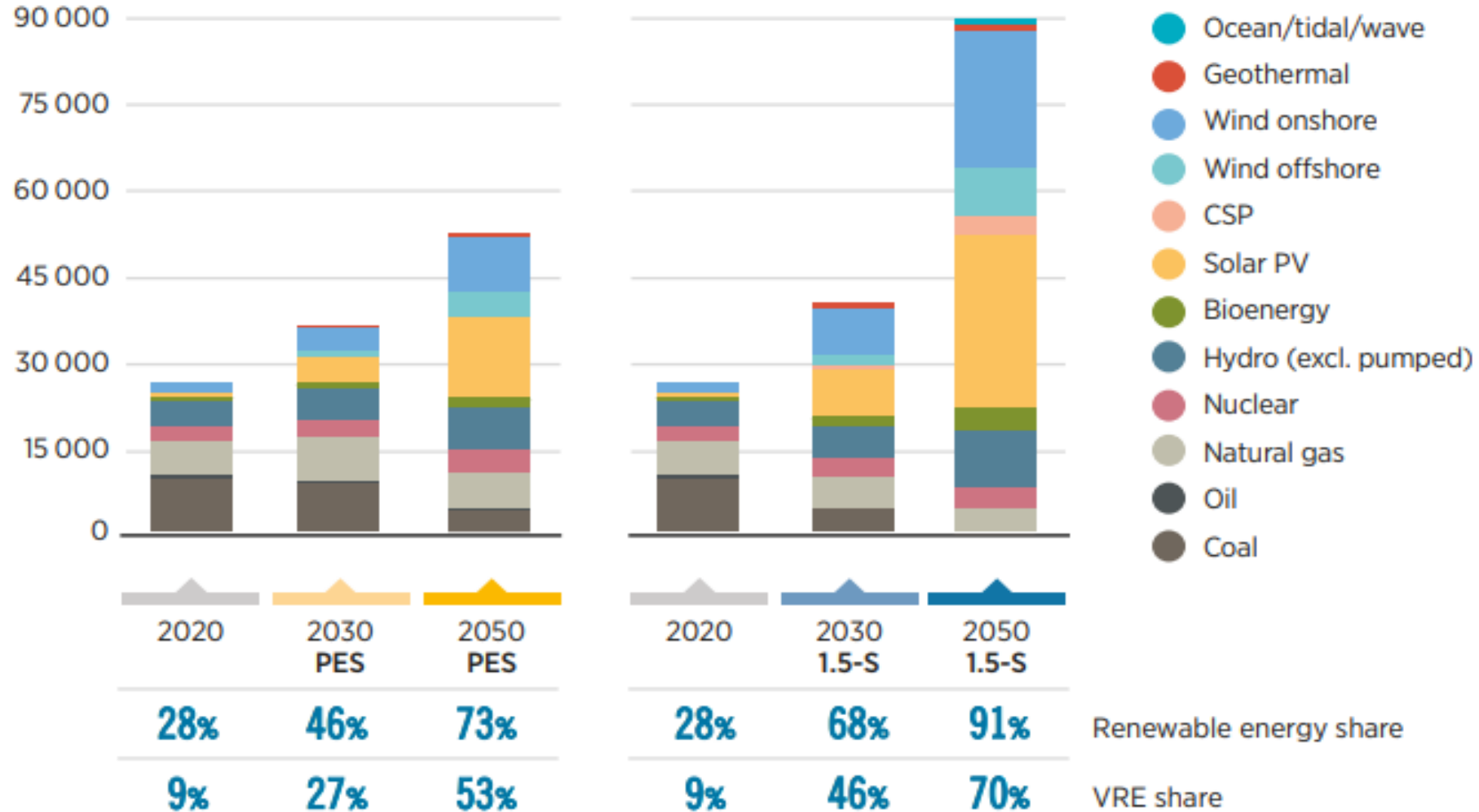
Breakdown of total final energy consumption by energy carrier in 2020 and 2050 under IRENA's 1.5°C Scenario:



Solar and wind power, at the center of a decarbonized global power supply

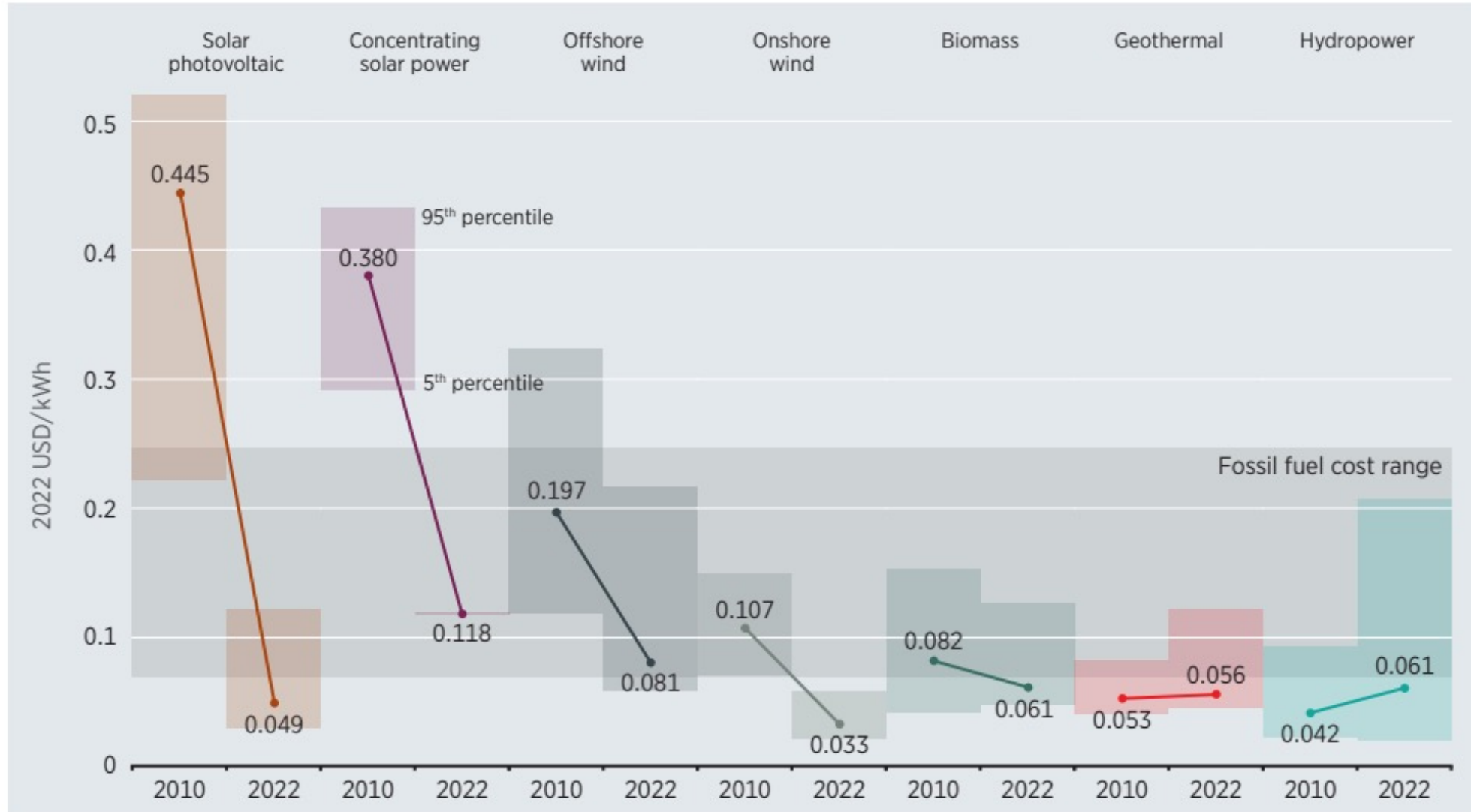
Global power generation mix by energy source: Planned Energy Scenario and 1.5°C Scenario in 2020, 2030 and 2050

Electricity generation (TWh)

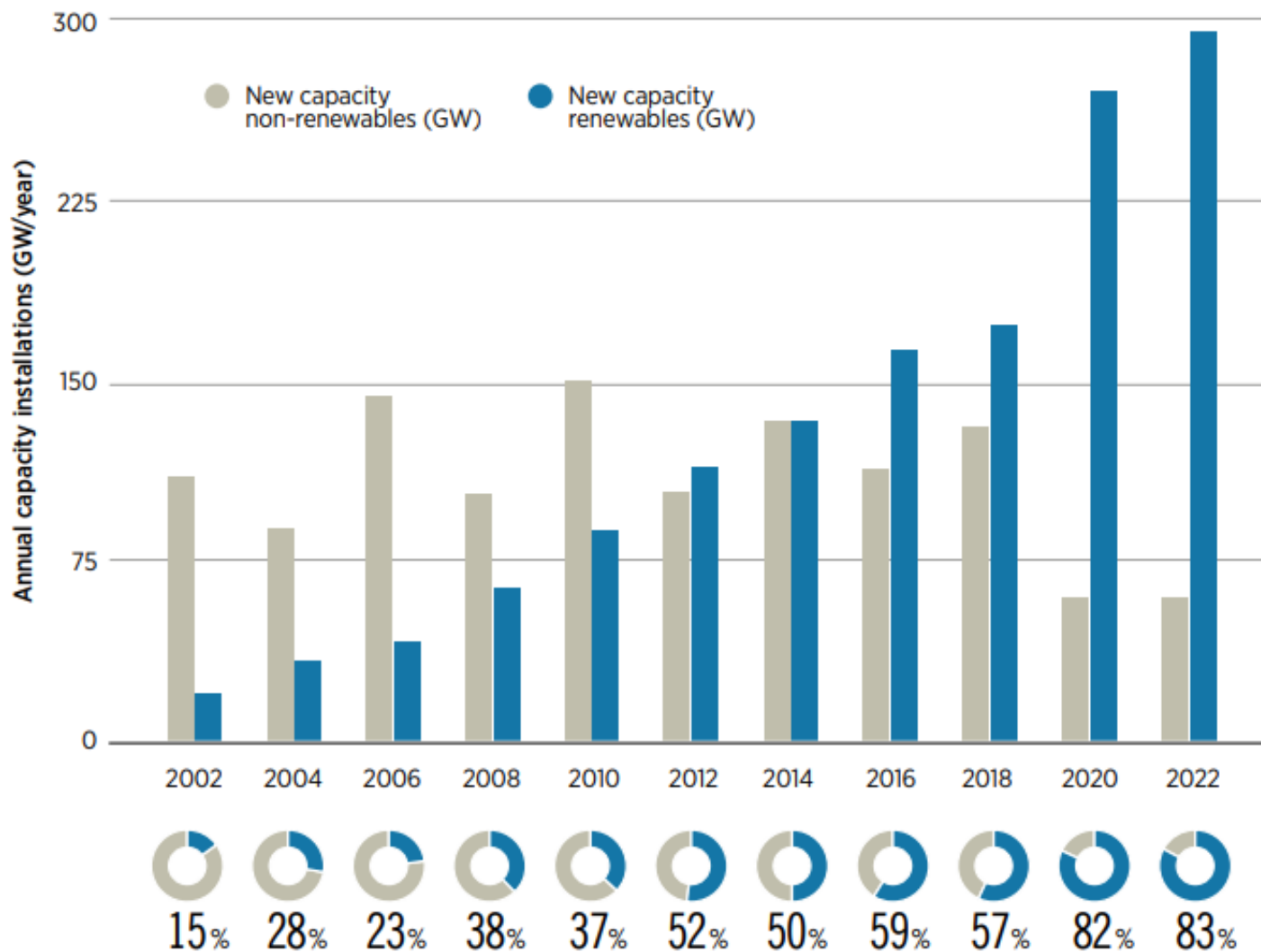


We are transitioning to a world of abundant, cheap renewables

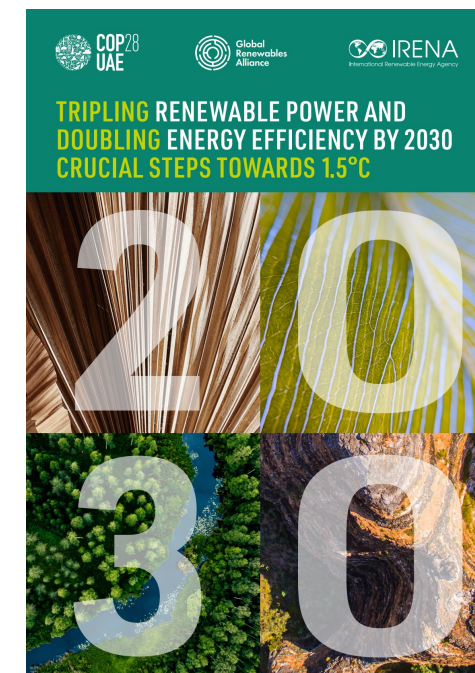
Global LCOE from newly commissioned utility-scale renewable power technologies, 2010 and 2022



Renewables dominate new capacity additions worldwide



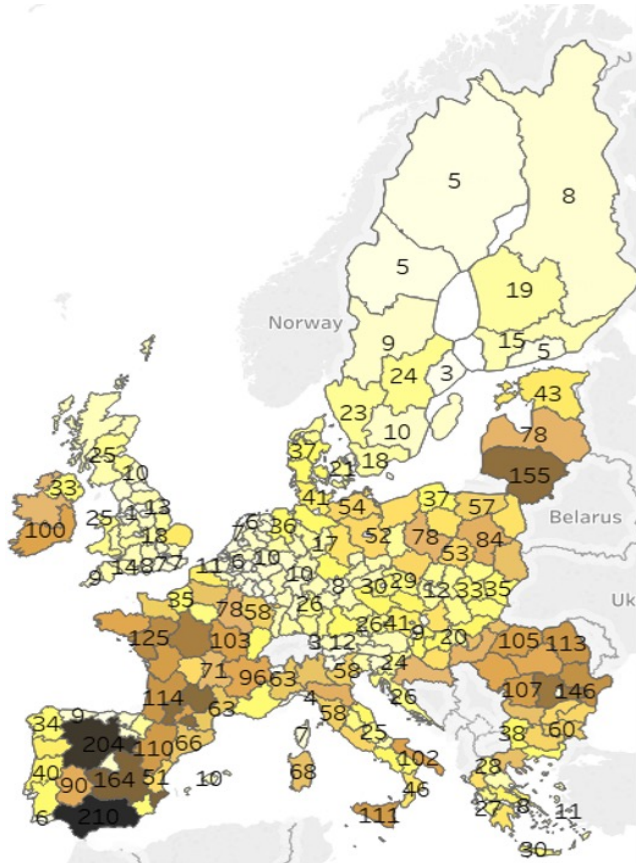
During COP28, more than a hundred countries have committed to **triple renewable energy capacity worldwide by 2030**.



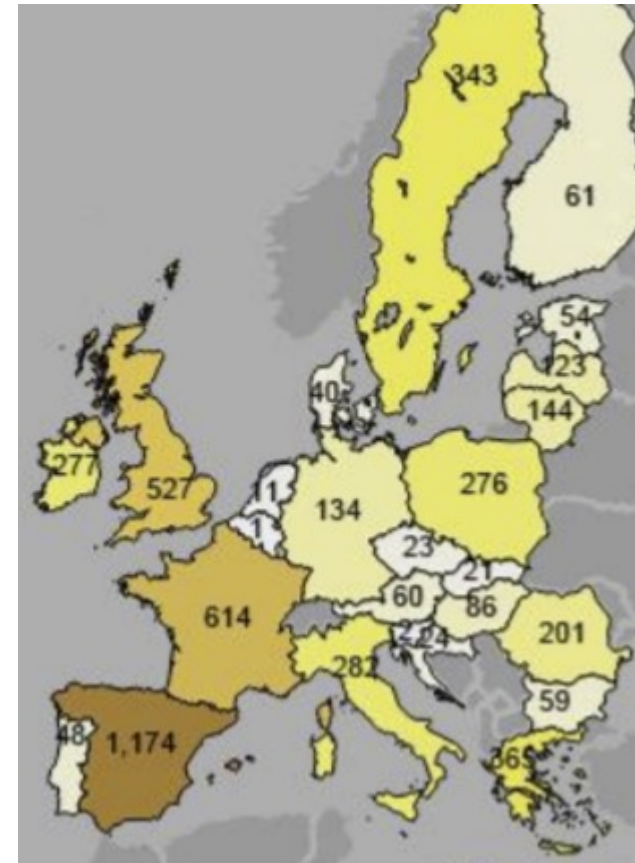
<https://www.irena.org/Publications/2023/Oct/Tripling-renewable-power-and-doubling-energy-efficiency-by-2030>

Renewable power can supply the bulk of Europe's energy demand

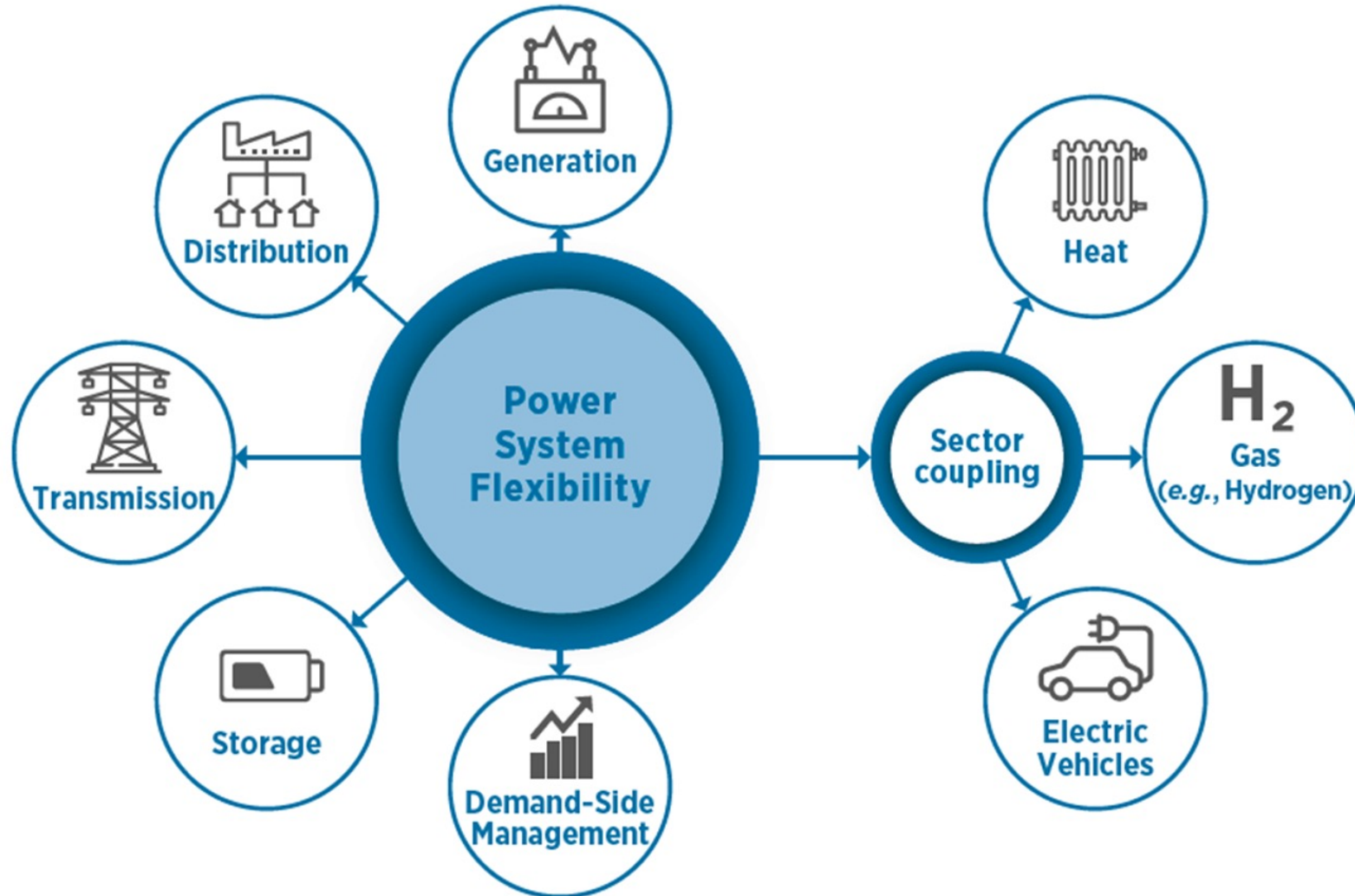
Solar PV (Ground mounted) > 10,000 TWh



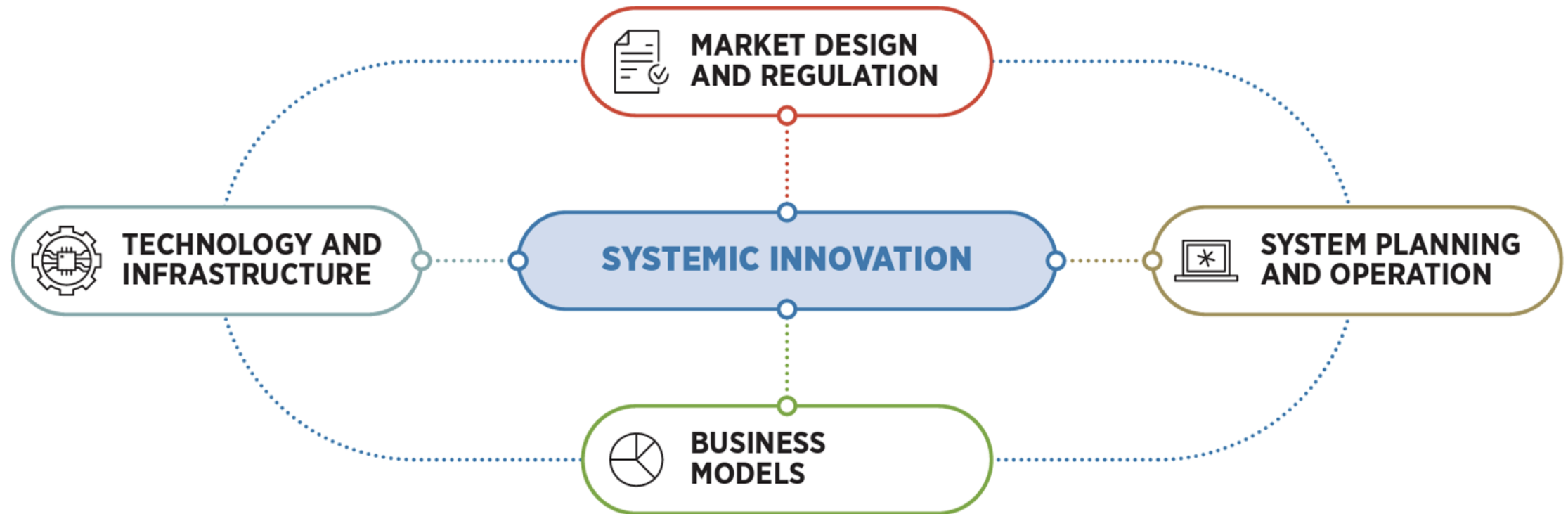
Onshore wind > 5,700 TWh



A holistic perspective of the energy system will be required



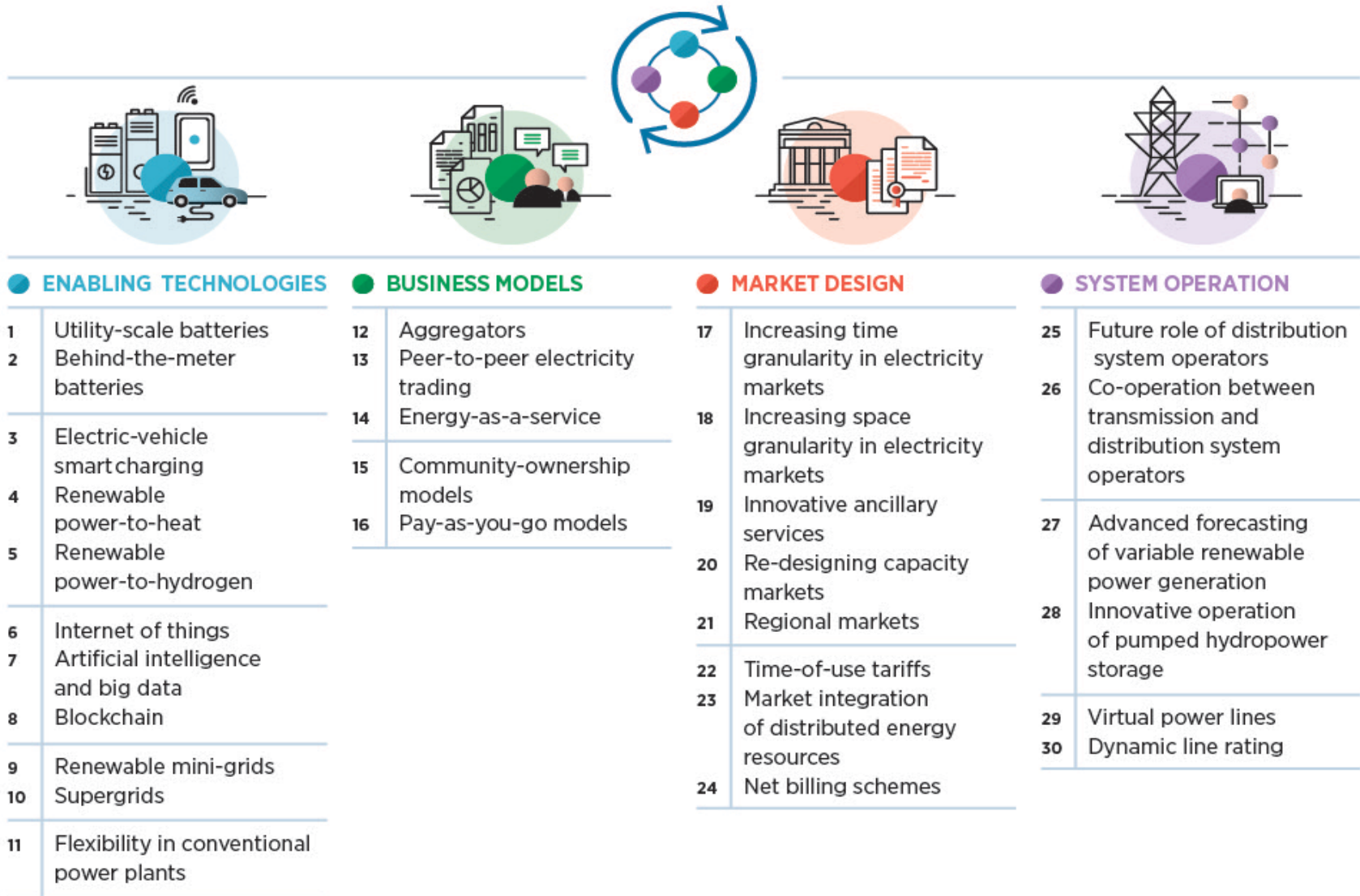
Managing variability of renewables sources goes beyond innovative technology: systemic innovation is crucial



Innovations for integration of VRE in power systems

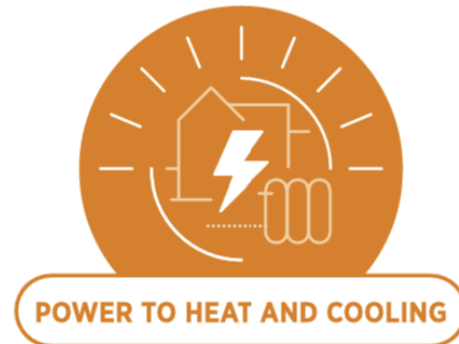


[LINK](#)



Innovation landscape for smart electrification for smart electrification of end use sectors

- The toolbox includes 100 innovations in that can play a role in transforming and decarbonising the energy use sector with smart electrification strategies





IRENA

International Renewable Energy Agency