



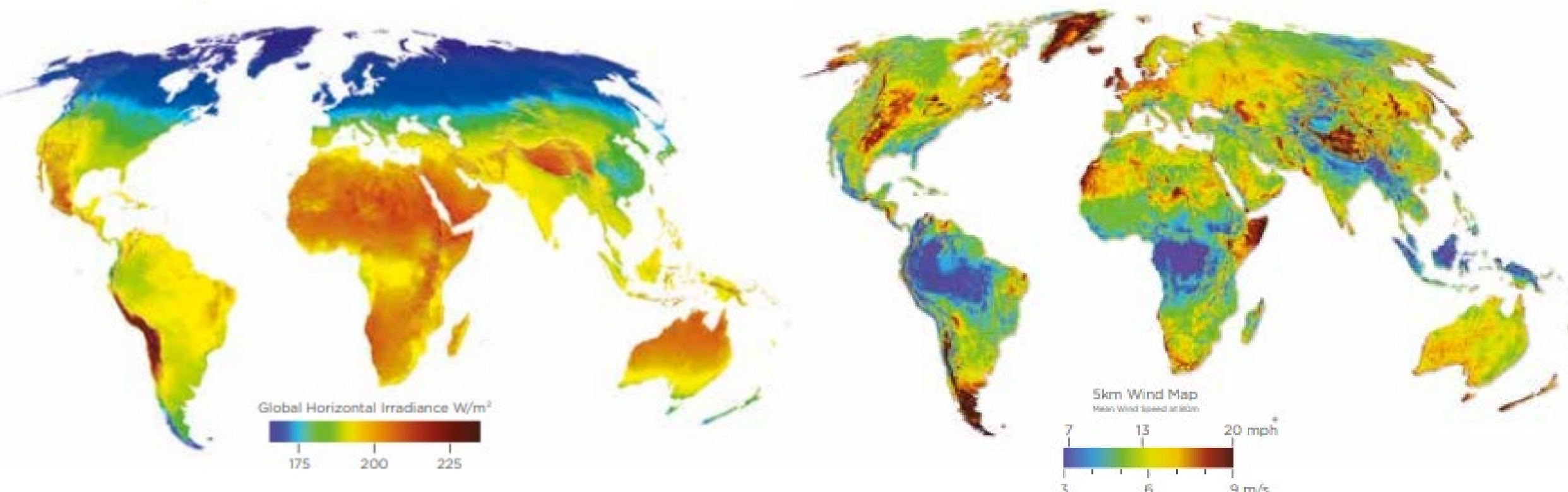
WORLD ENERGY TRANSITIONS OUTLOOK

1.5°C Pathway

Energy and Ecological Transition: The geopolitics of energy transition

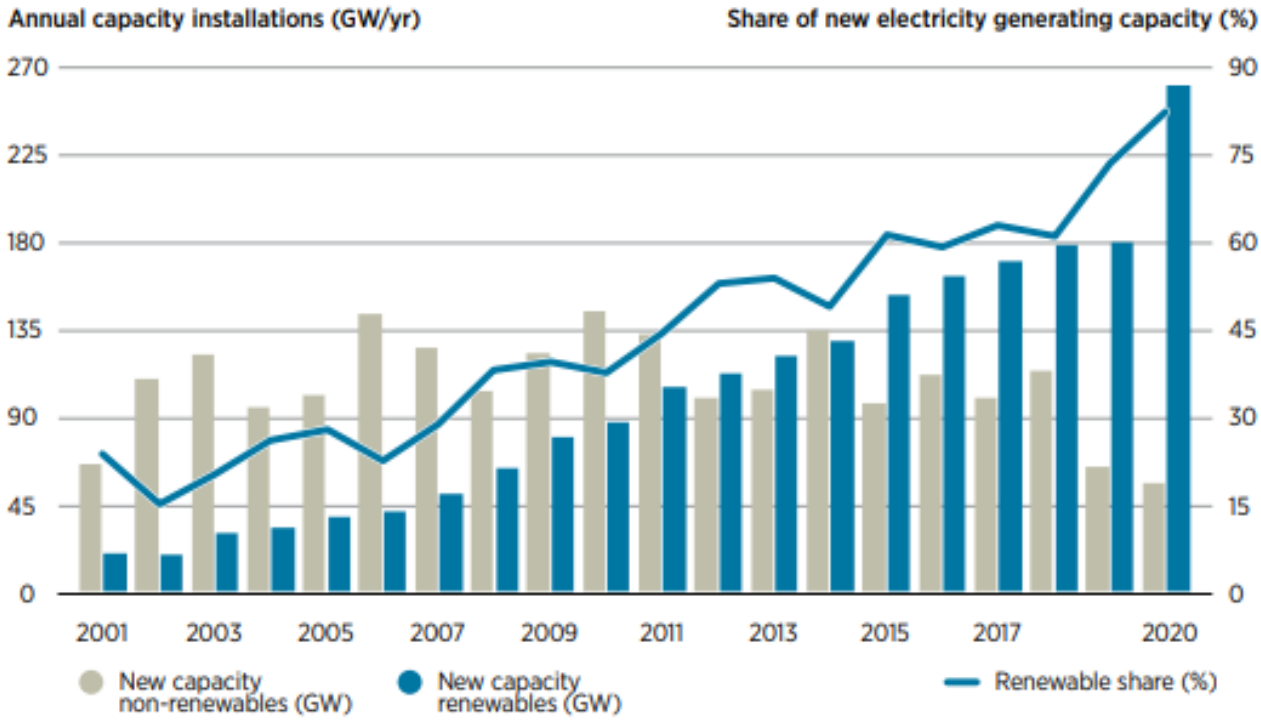
Elizabeth Press, Director, Planning and Programme Support, IRENA

Global solar and wind potential

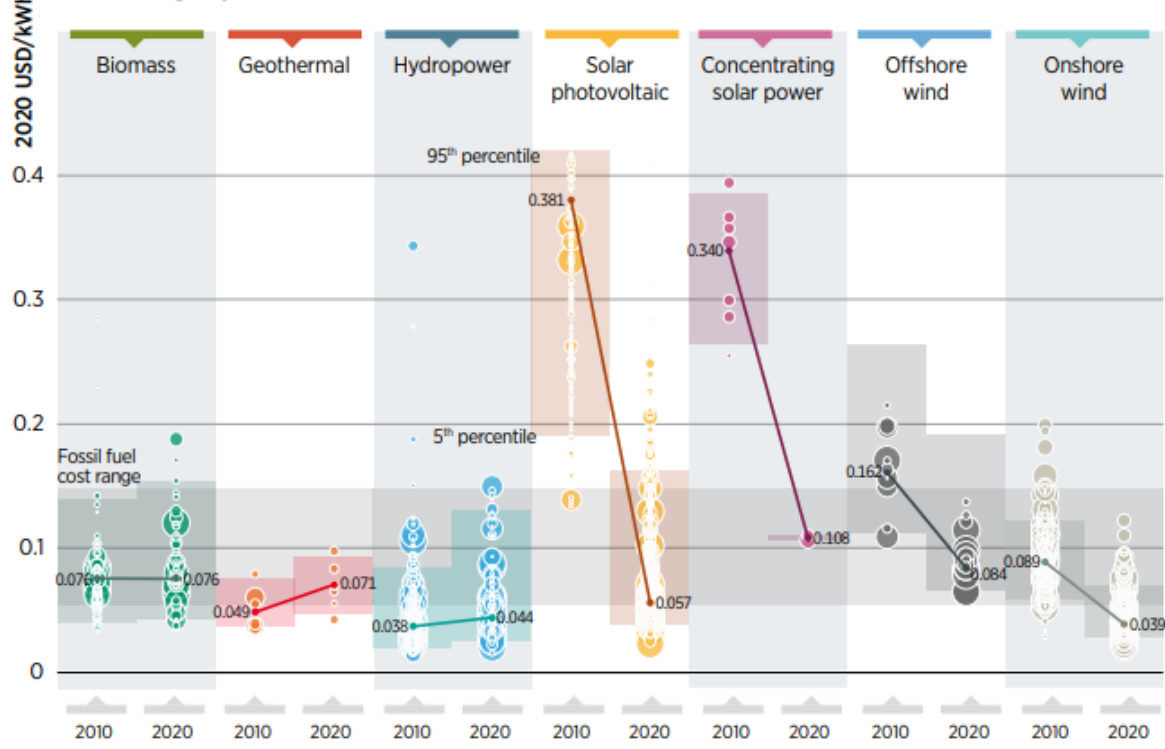


Source: Vaisala, ("New World: Geopolitics of the Energy Transformation, IRENA 2019)

Global energy transformation driven by renewables

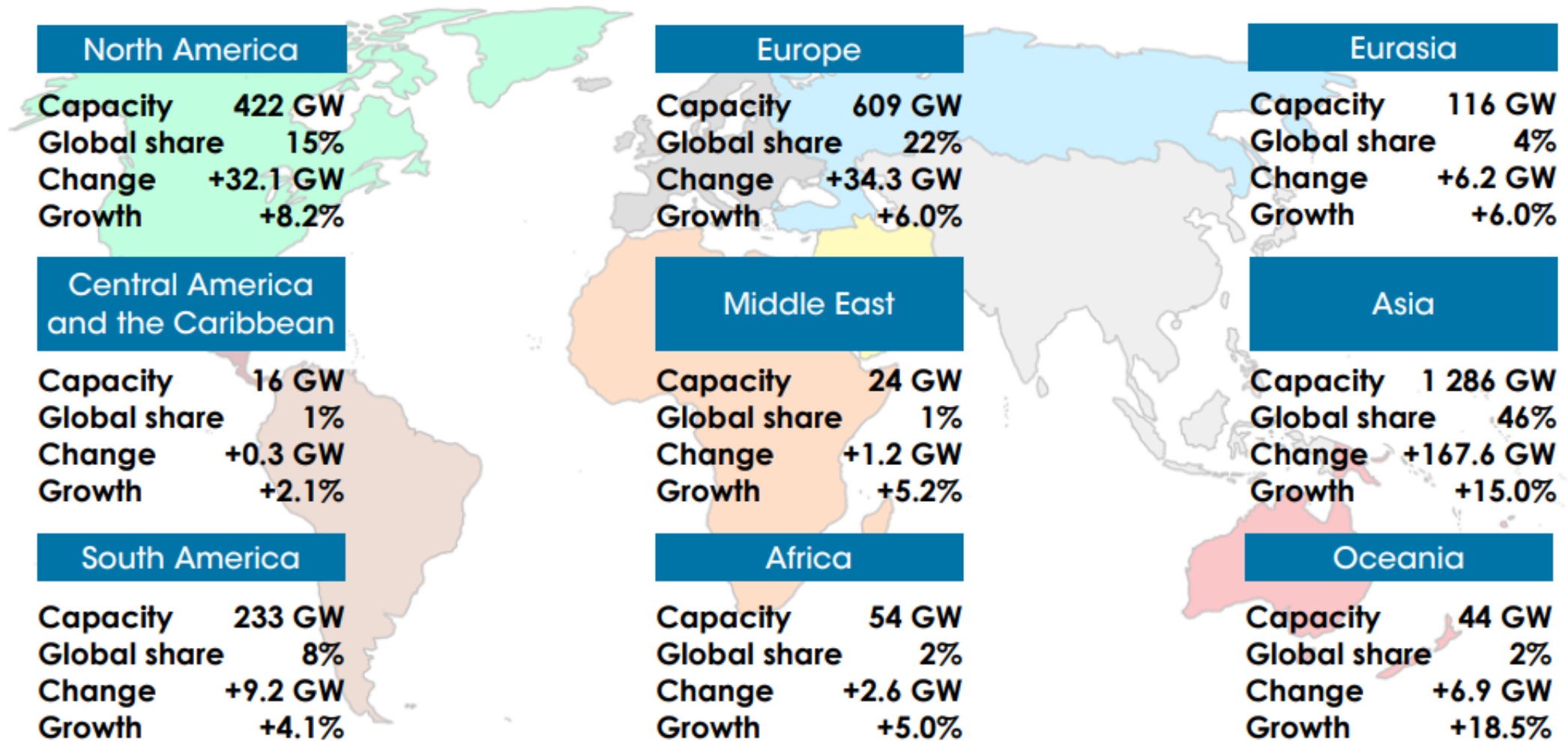


Global LCOE of newly commissioned utility-scale renewable power generation technologies, 2010 and 2020

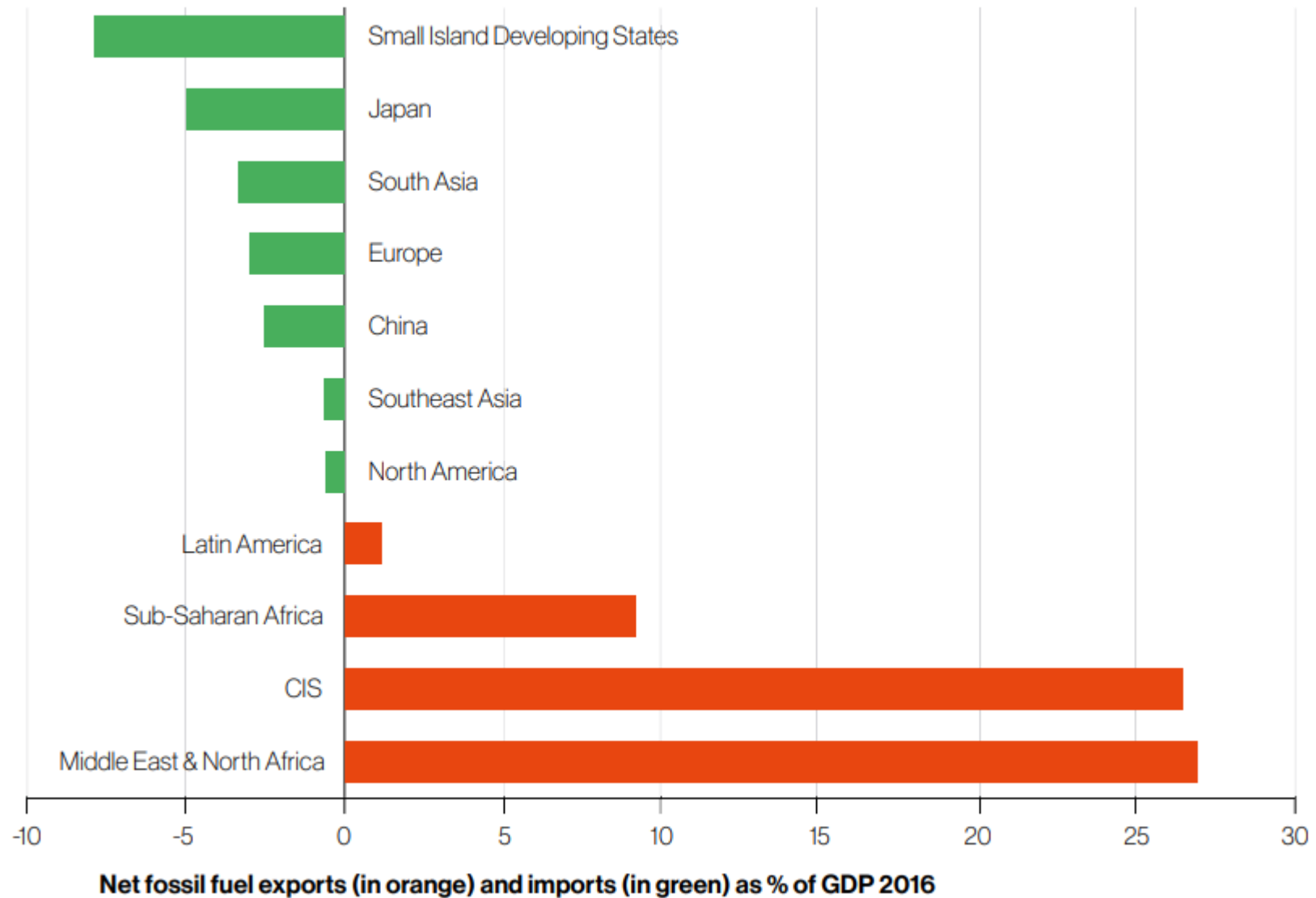


Source: IRENA (2021)

Renewable generation capacity by region



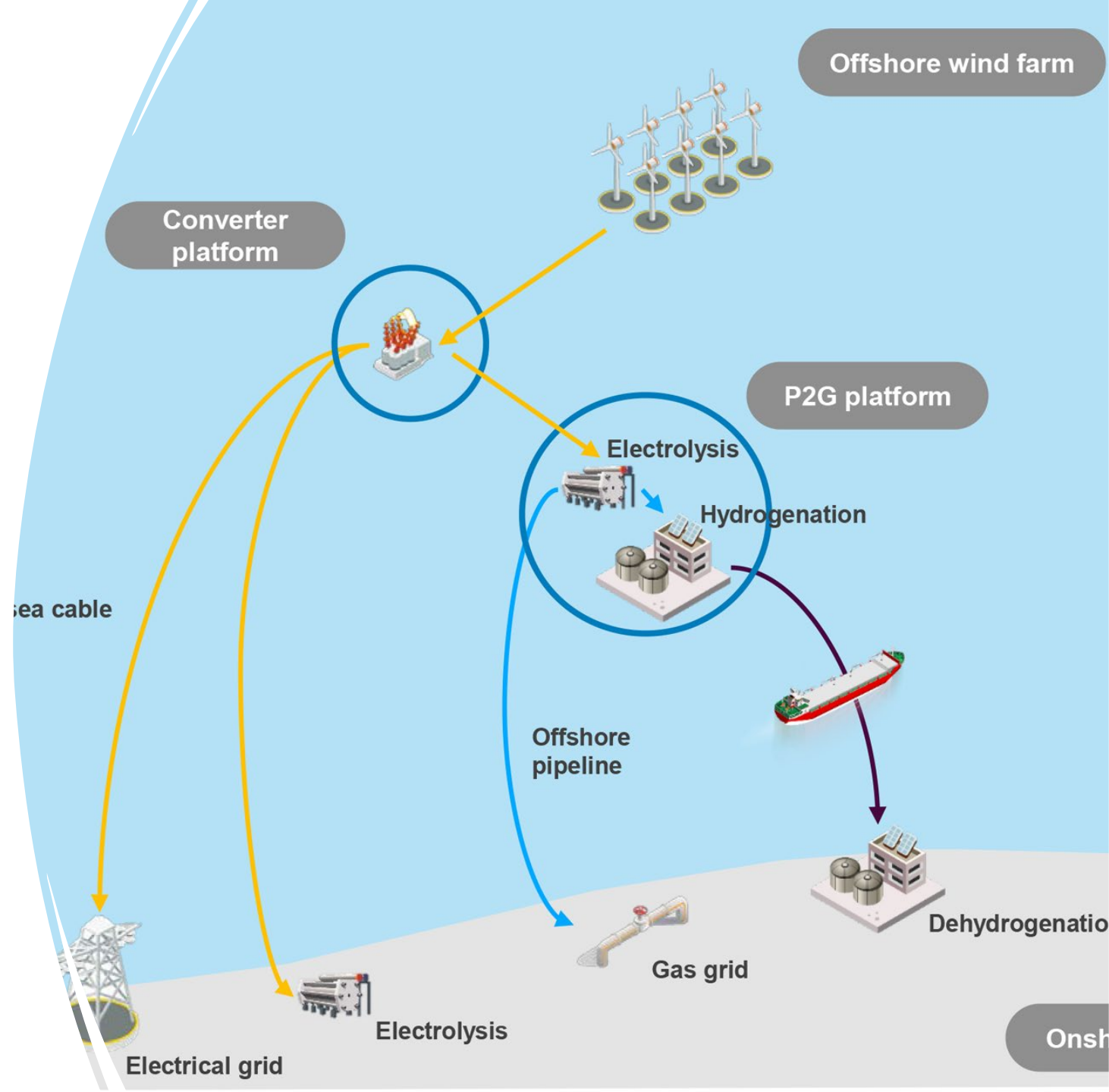
Net fossil fuel exports and imports as a share of GDP



Source: World Bank, IMF. (A New World: Geopolitics of the Energy Transformation, IRENA 2019)

Geopolitics of a global H2 market

Pathway development depends on volumes, types, routes/ modes of transport and sources



Changing energy trends

	Energy transformation	Implications	Considerations
Global energy trade	<ul style="list-style-type: none"> Renewables are reducing importance of critical trade points 	<ul style="list-style-type: none"> Countries at the forefront of the clean energy race will benefit and enhance their global influence 	<ul style="list-style-type: none"> Diffusion of power leading to new patterns of trade and shifting alliances based on fossil fuels
Energy security	<ul style="list-style-type: none"> Most renewables are non-exhaustive and are harder to disrupt 	<ul style="list-style-type: none"> Strengthened energy security and energy independence of most countries; 	<ul style="list-style-type: none"> Potential instability - rapid shift from fossil fuels could create a financial shock; Workers / communities dependent on fossil fuels
Energy access	<ul style="list-style-type: none"> Deployment at any scale aids decentralized energy production and consumption that enhance sustainability and equity 	<ul style="list-style-type: none"> Electricity, biofuels and other materials critical for renewable technologies will gain in significance. 	<ul style="list-style-type: none"> Decline in reach and influence of fossil-fuel exporters unless they reinvent their economy. Diffusion of power to local levels.