



International energy transition uncertainties, opportunities, and implications for the global carbon budget

Westminster Energy Forum

11 July 2023



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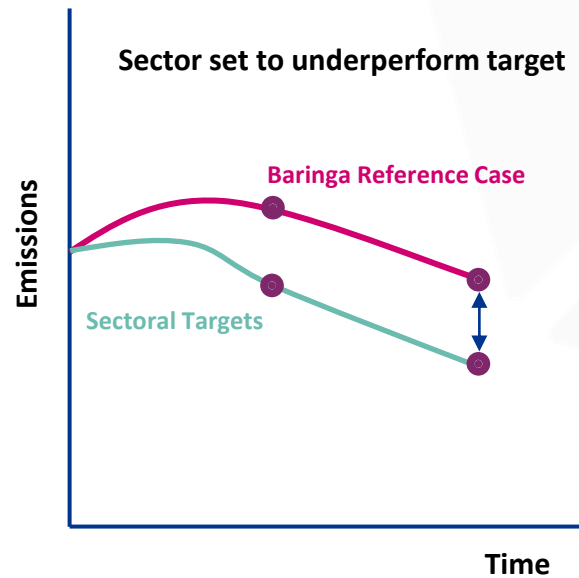


Where are we in the Energy Transition?

We must critically analyse government targets

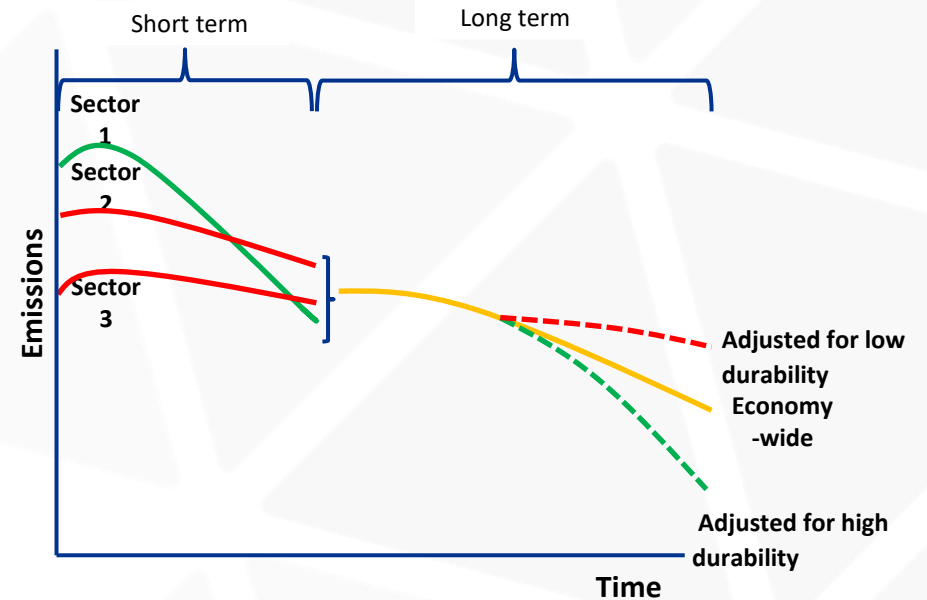
Credibility Analysis

To what extent do current policies support the Net Zero Target?



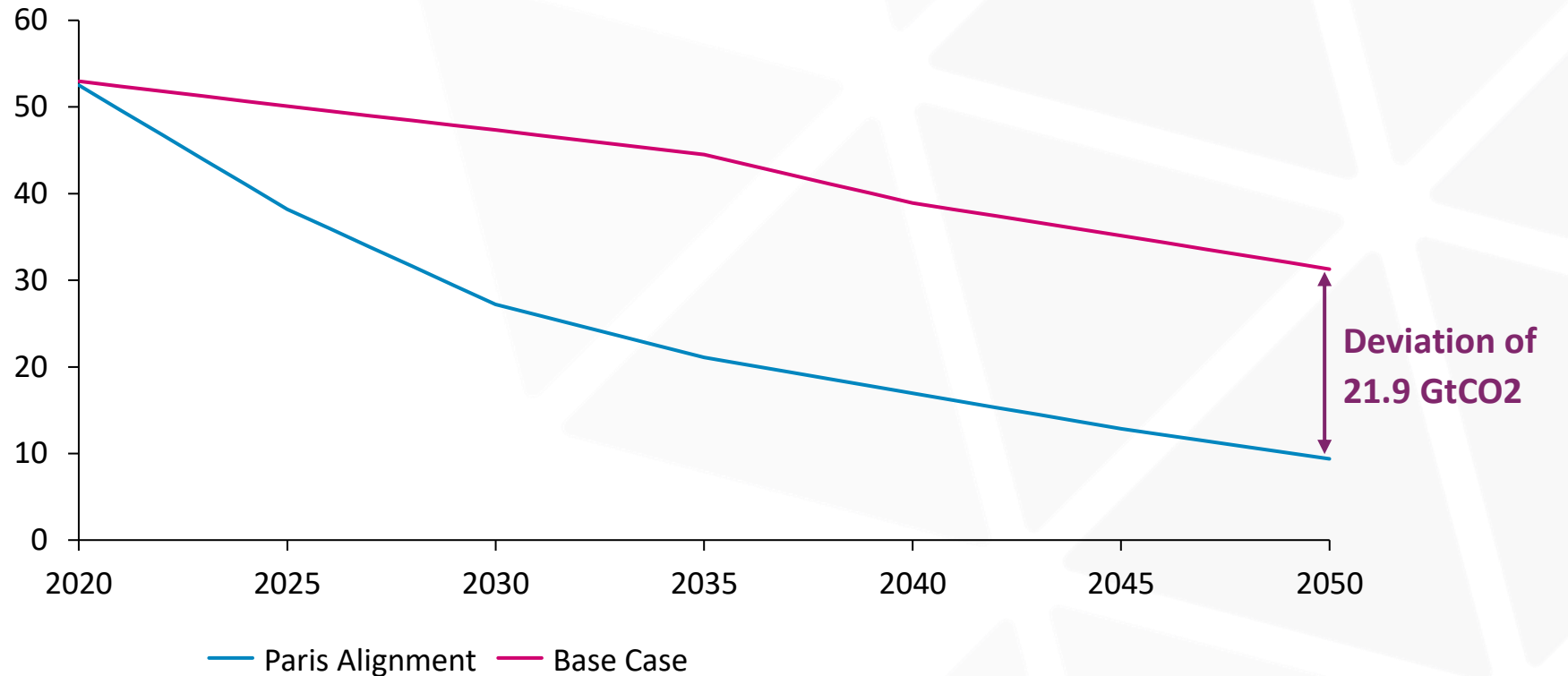
Durability Analysis

With what likelihood will the current policies strengthen or weaken over time?



We are not on course for Paris Alignment

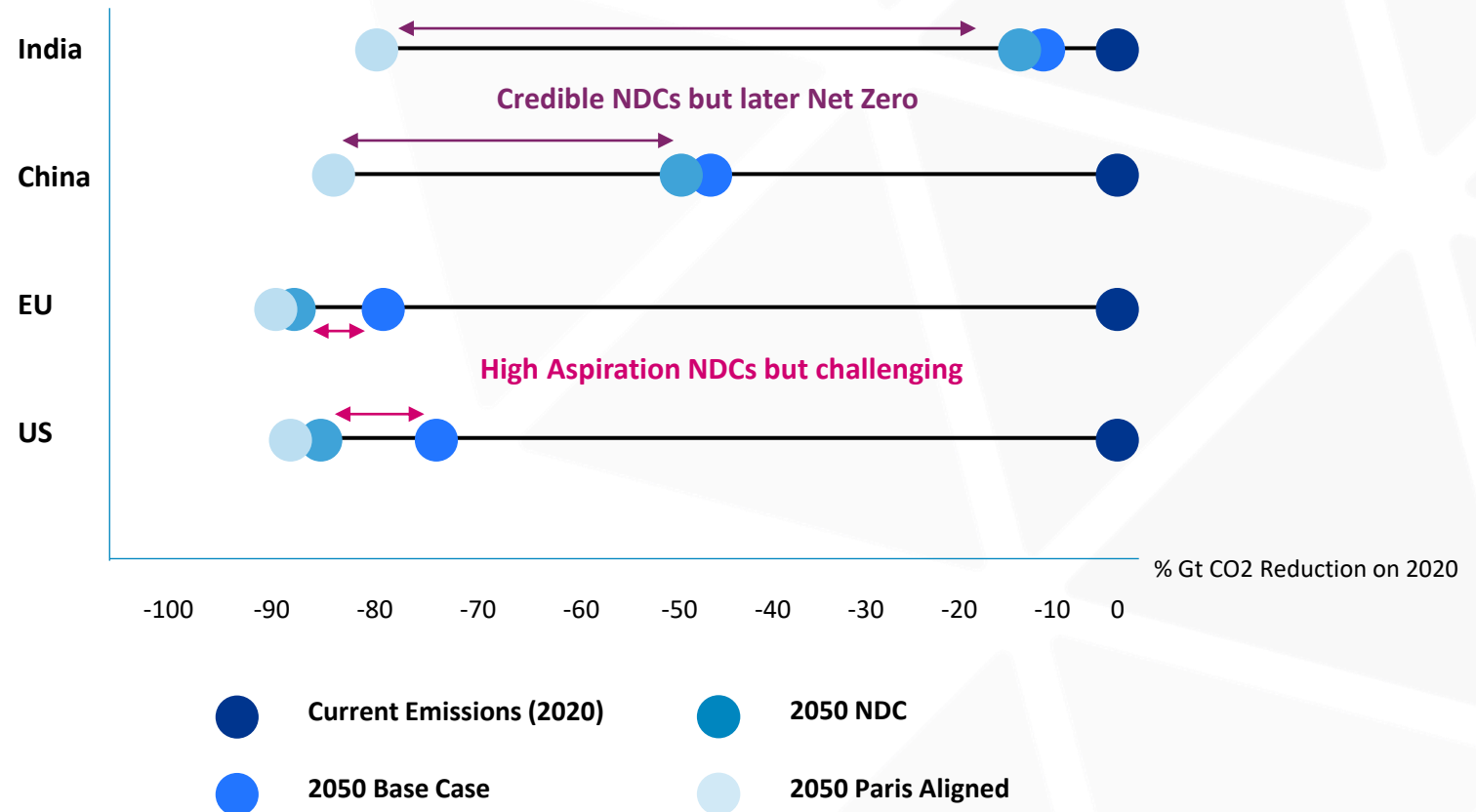
A “base case” vs Paris required annual global GHG emissions



Source: Baringa, using the Global Transition Model, part of BlackRock’s Aladdin Climate solution

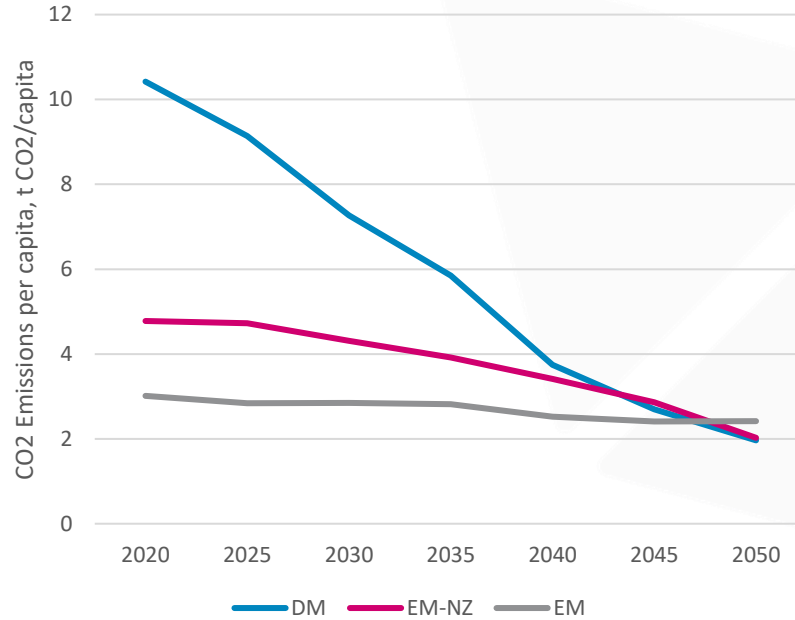
Developed and emerging markets: timing and credibility

GHG Emissions Trajectory 2050

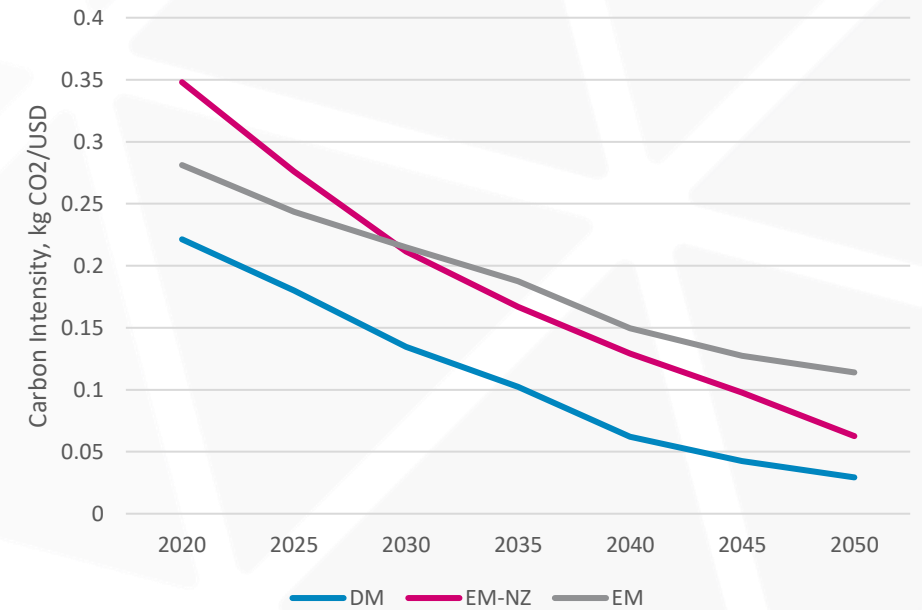


Developed and emerging markets: very different challenges

Emissions per capita



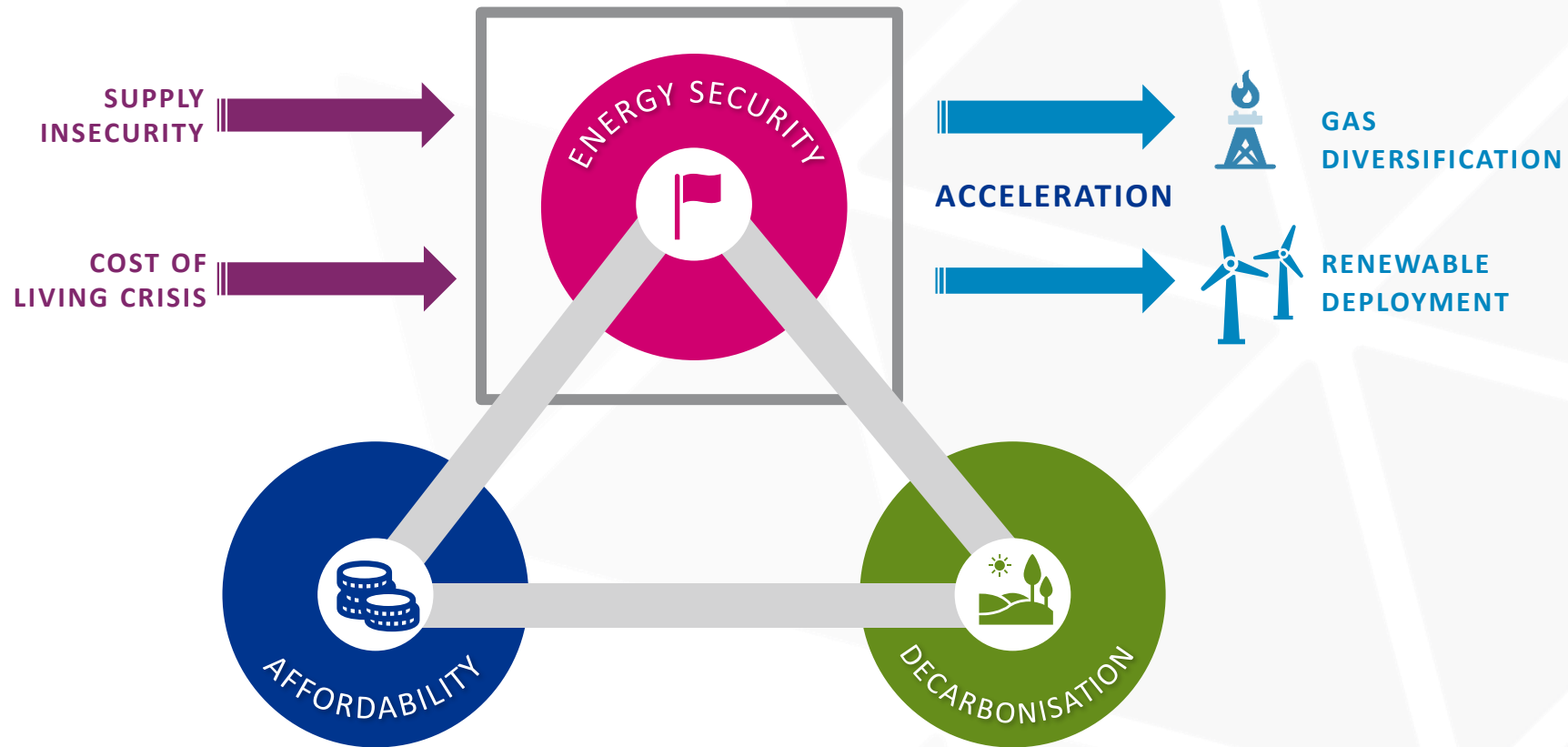
Carbon Intensity per GDP unit



What are the emerging challenges around the Transition?

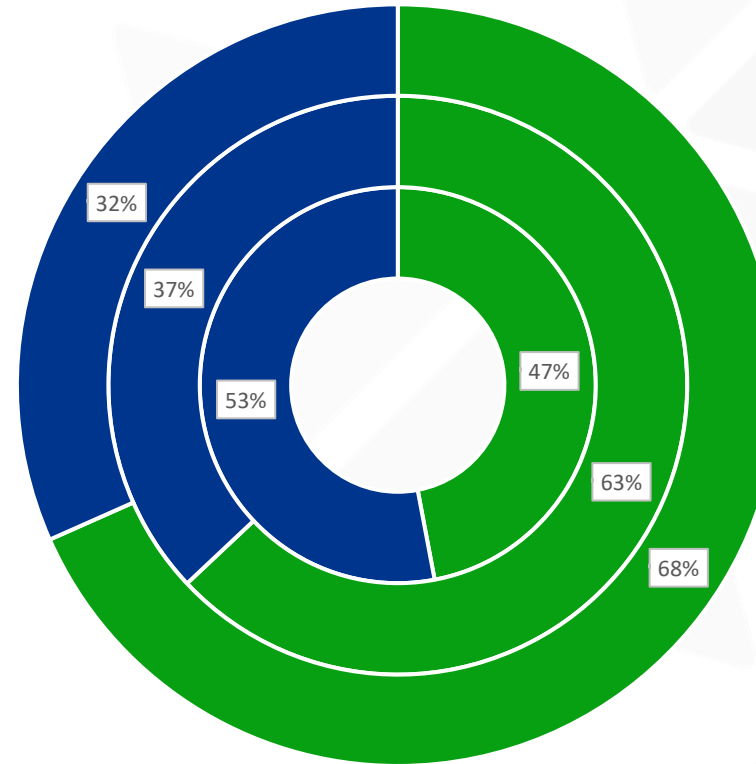
Ukraine crisis: Shifting Priorities

Ukraine crisis: Shifting Priorities



Ukraine crisis: An accelerated transition - Europe

Baringa's Energy Generation Mix Projections 2030



- Innermost circle is current generation mix (2022) from 2022 Q4 report reference case
- Second circle is the 2021 Q4 report reference case for 2030
- Outer circle is the 2022 Q4 report reference case for 2030

■ Renewables ■ Non-Renewables

1. Non-Renewables includes coal, oil, gas and nuclear;
2. Renewables includes offshore, onshore, solar, hydro and biomass

Source: Baringa analysis

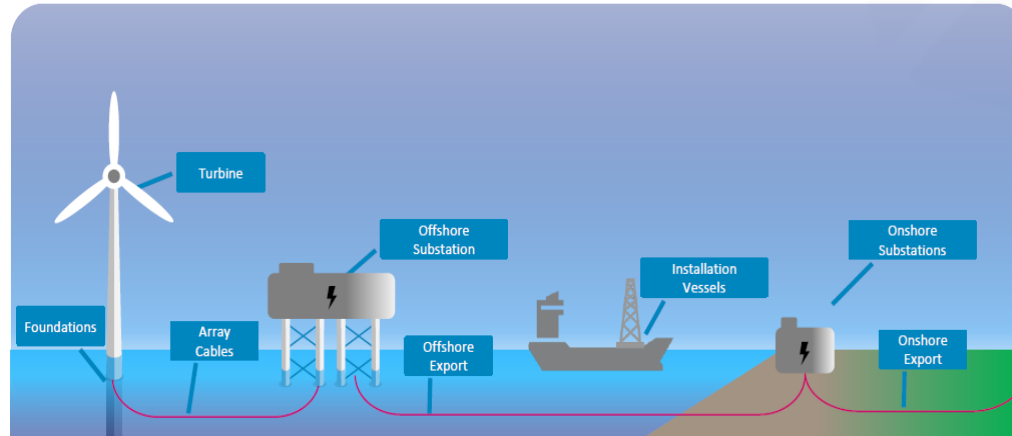
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Supply chains under stress

Supply chains under stress: offshore wind in GB

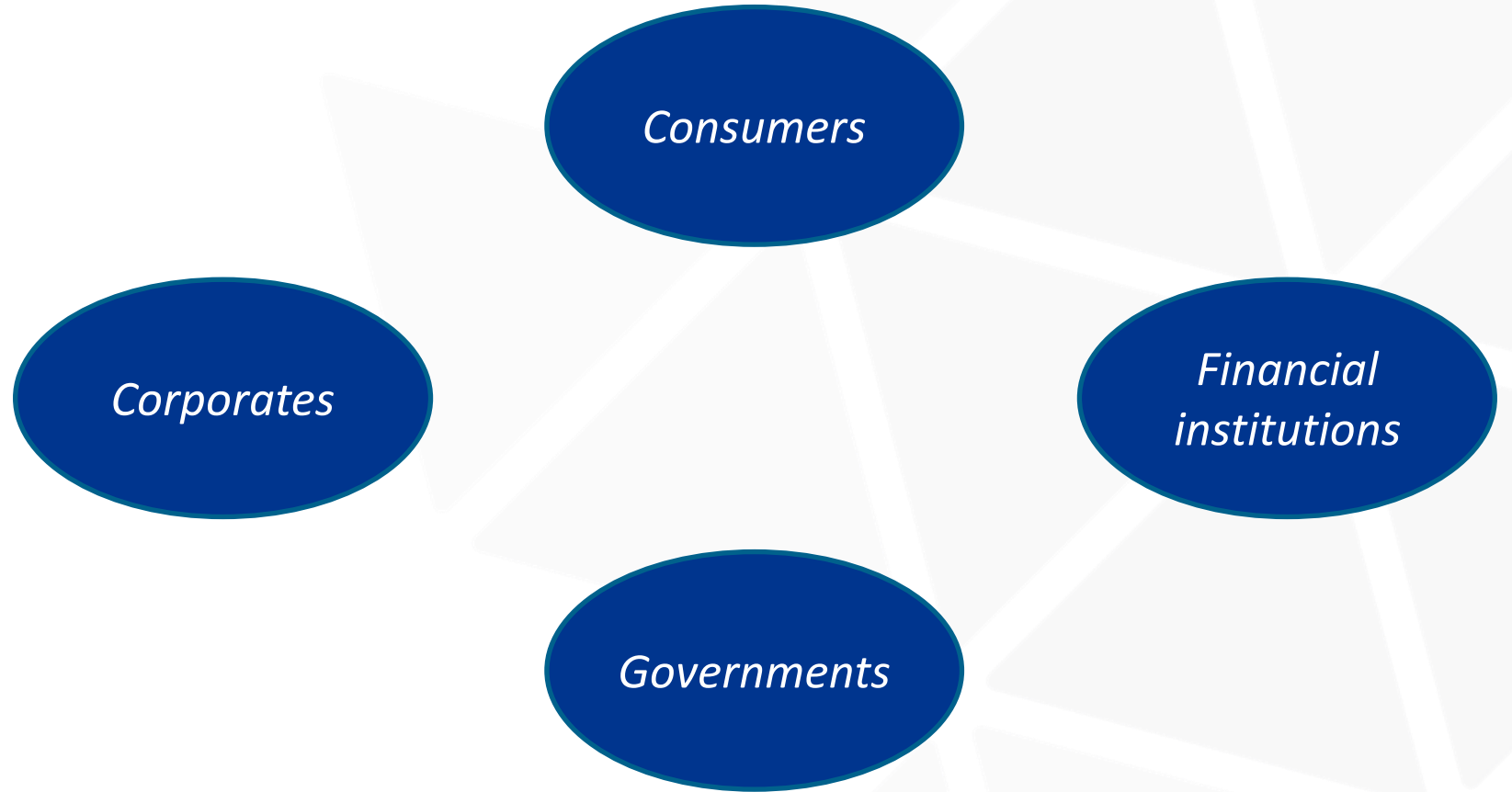
Offshore wind supply chain



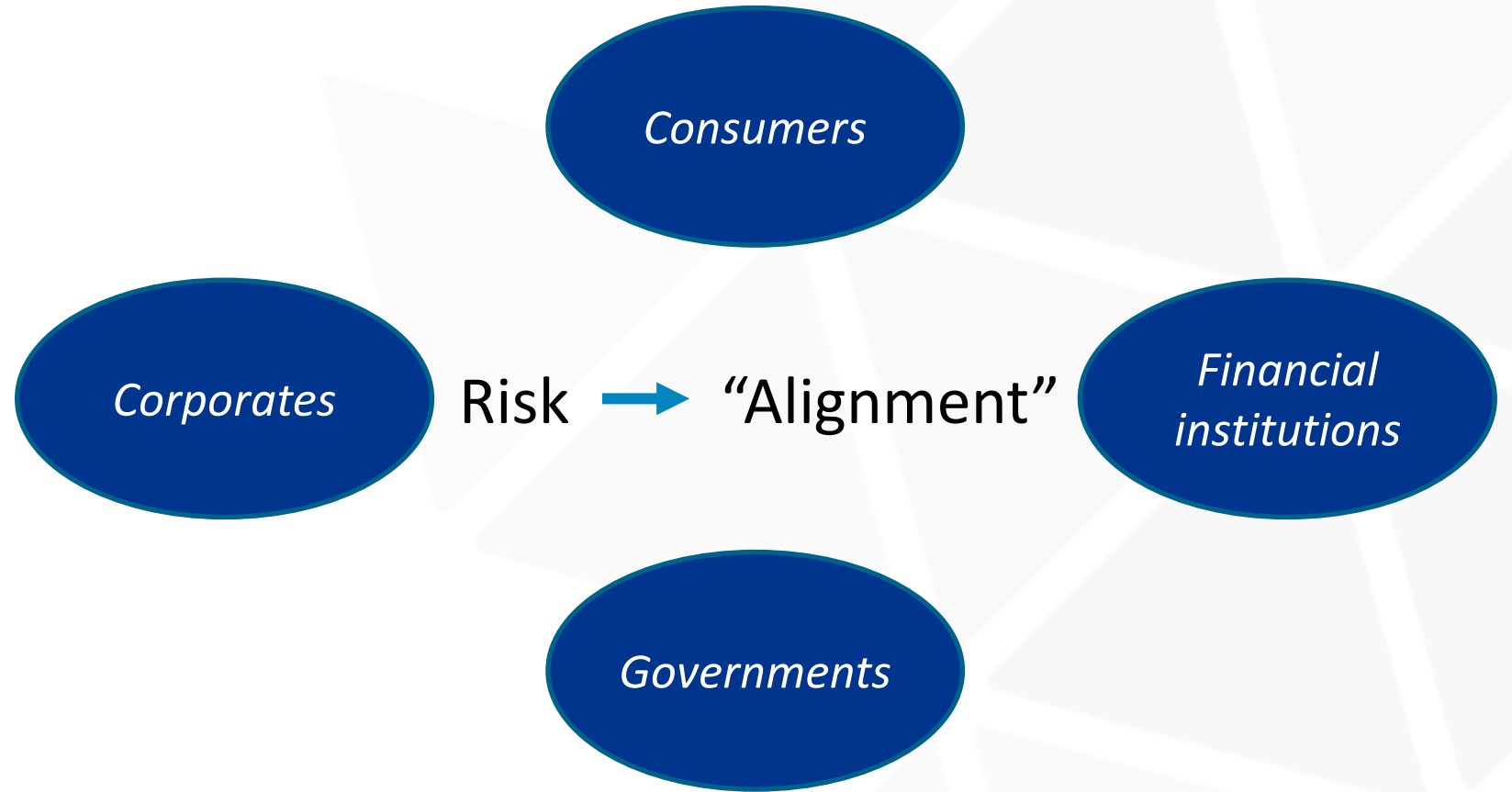
Offshore wind constraints overview

	Shortage of vessels		Shortage of HVDC cables
	Shortage of balance of plant components		Difficulty sourcing key sub-components
	Port infrastructure concerns		Lack of skilled personnel
	Future shortage of monopile foundations and lack of floating supply chain		Uncertainty around component size/properties

Who is responsible?



Who is responsible?



**Not just
carbon...**

What are the consequences of the pathway ahead?

Uncertainty



**GEOPOLITICAL
EVOLUTION**



**BLACK SWAN
EVENTS**



**TECHNOLOGICAL
UNCERTAINTY**

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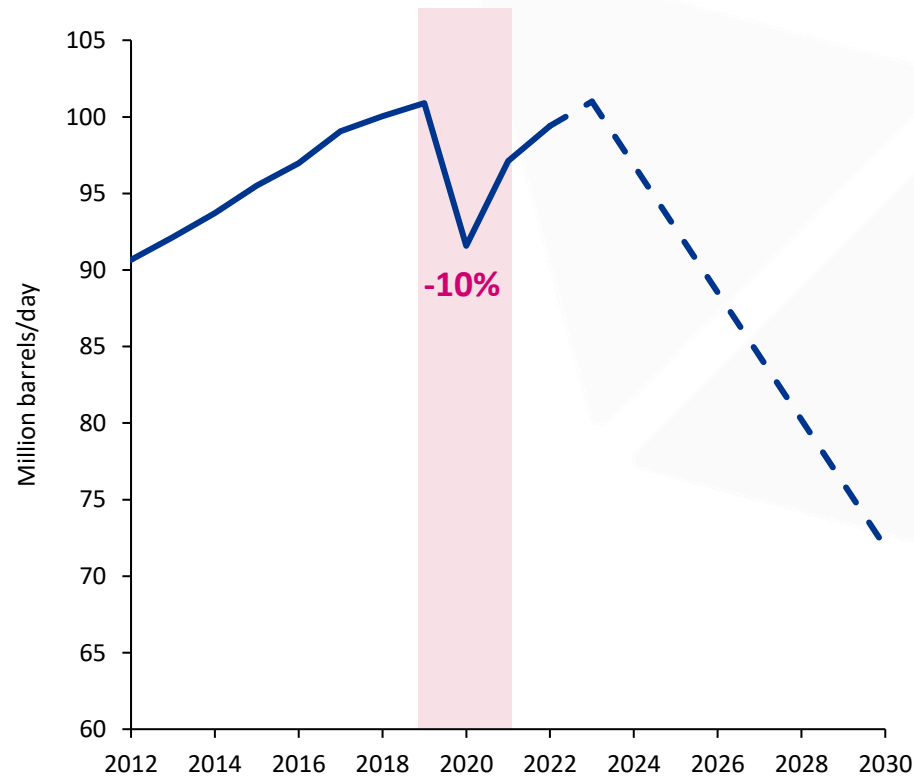


MODEL RISK

Volatility

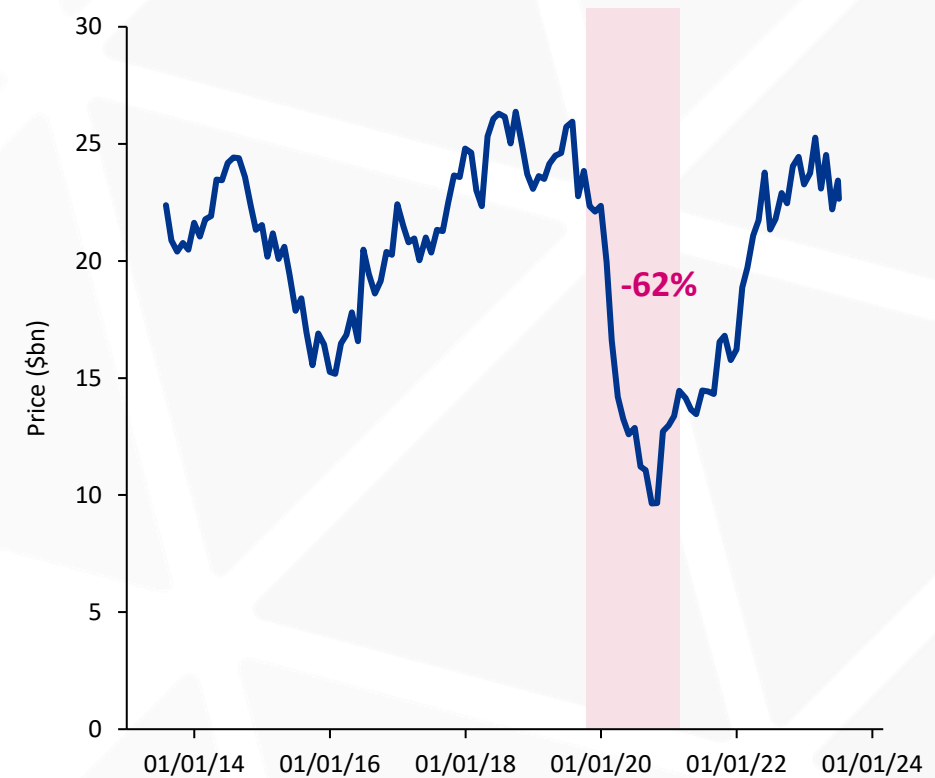
Volatility: managing decline

Global oil demand



Source: EIA, IEA, Baringa analysis

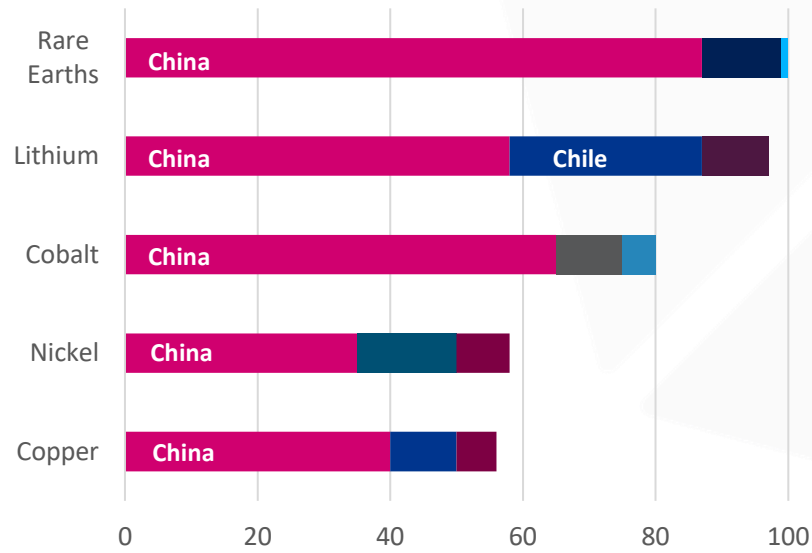
Shell PLC Share price



Source: FactSet

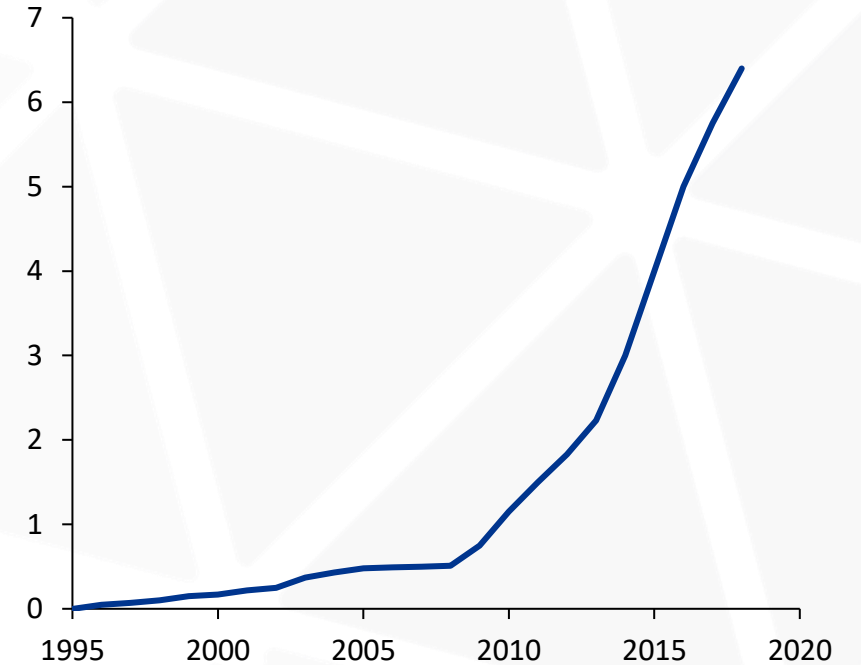
Geopolitics: Critical Materials

Where clean energy materials are processed



Source: IEA (2019 data)

% of African mines owned by China

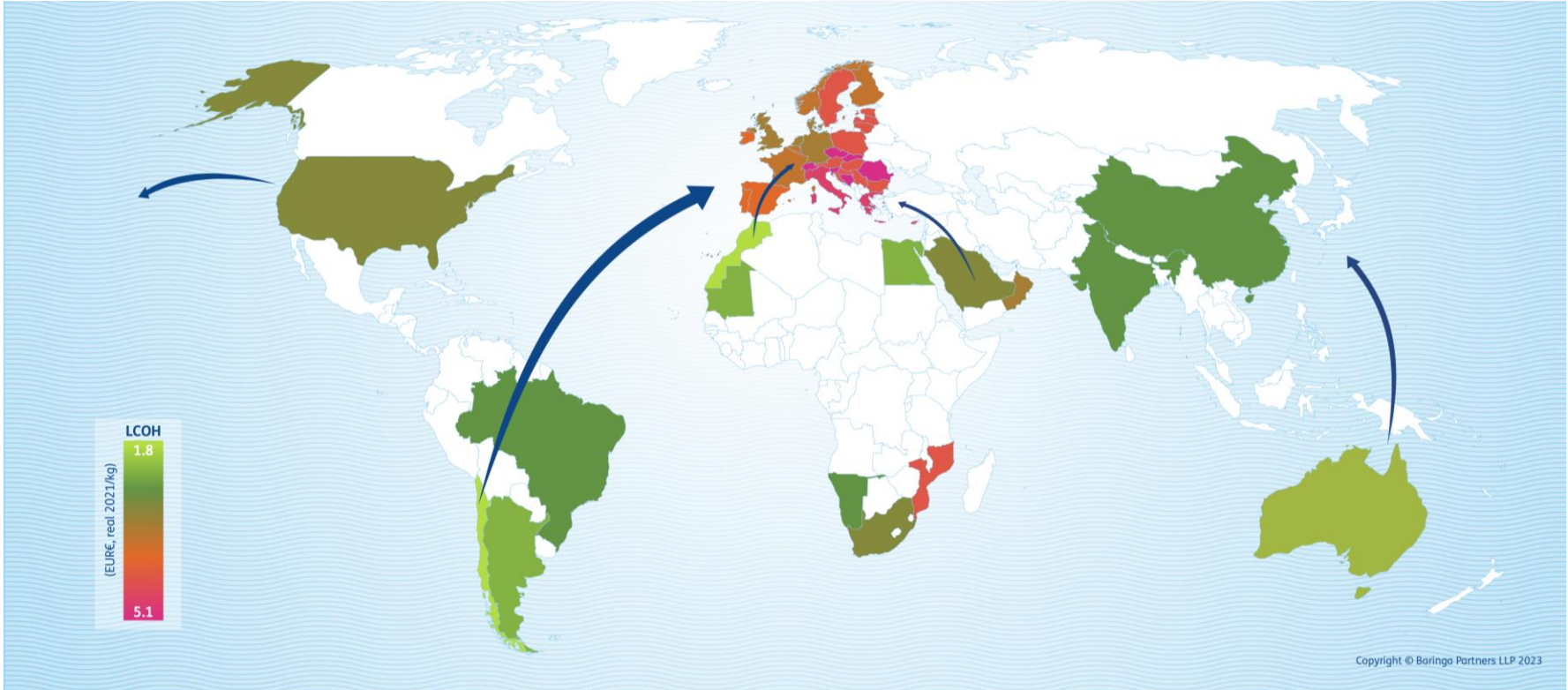


Source: Ericsson, M., Löf, O. & Löf, A. Chinese control over African and global mining.

Geopolitics: Old vs New Energy Producers

Geopolitics: Old vs New Energy Producers

Levelised production costs of green hydrogen worldwide in 2030



Source: Baringa analysis

Thank you

oliver.rix@baringa.com

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