



X^L Reinsurance

Observations on Net Zero

October 2024 - Singapore via Zoom

What will we cover today

Agenda

- Energy Transition in the macro-environment
- What does that mean for our industry?
- Introduction to GHG emissions reporting



Part 1: Energy Transition in the macro-environment

Net Zero vs Energy Transition

Source: UN, Net Zero Climate, UCL Bartlett School

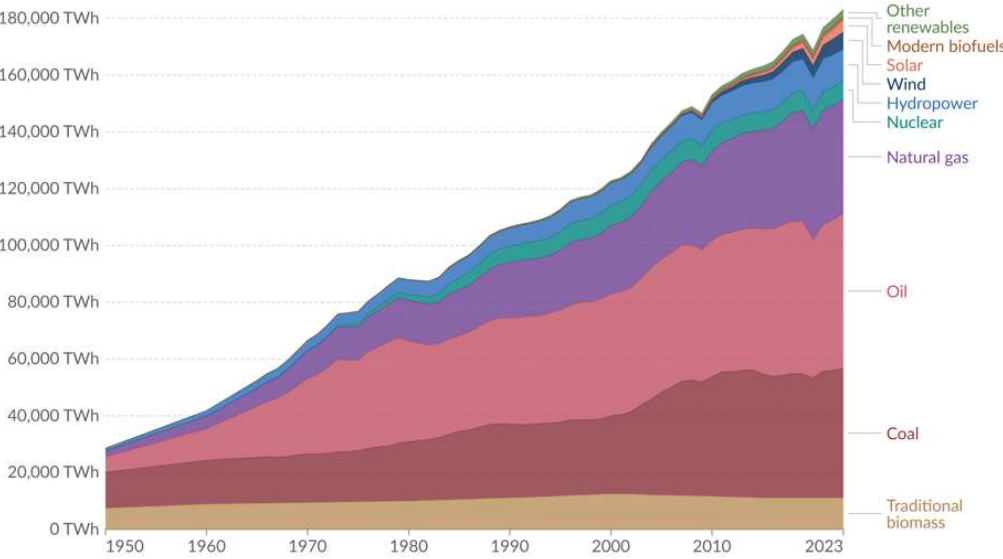
- “To keep global warming to no more than 1.5°C – as called for in the Paris Agreement – emissions need to be reduced by 45% by 2030 and reach net zero by 2050”
- Net Zero refers to a state where the total greenhouse gas emissions released into the atmosphere are balanced by an equivalent amount being removed from the atmosphere.
- Energy transition refers to the global shift from fossil fuel-based energy systems towards renewable and low-carbon energy sources.
- The two concepts are inextricably linked, with the energy transition being a critical enabler for achieving net zero emissions globally.

Where is the world at?

Source: Our World in Data

Global primary energy consumption by source

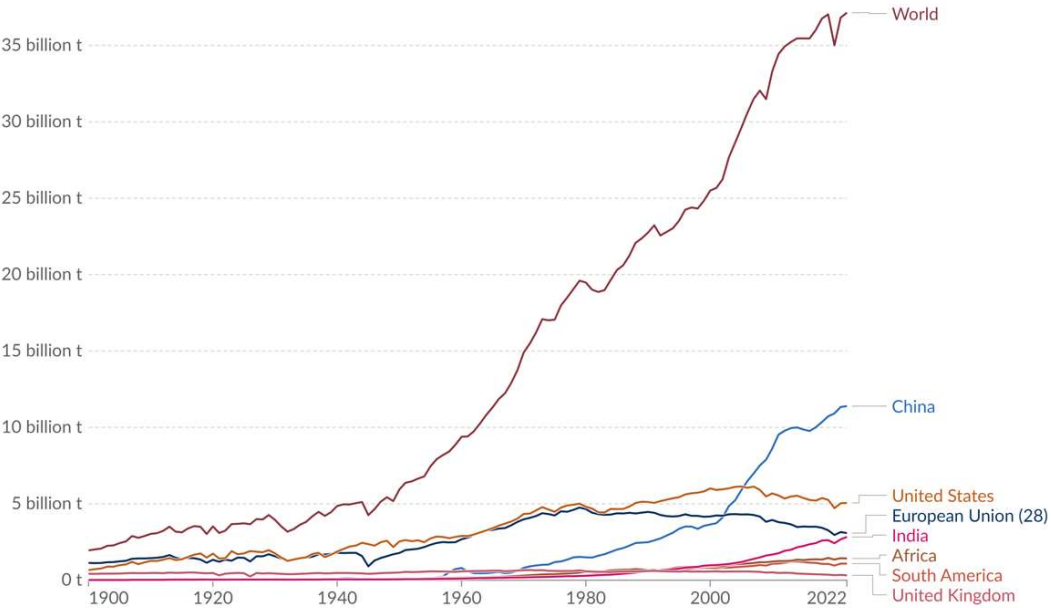
Primary energy¹ is based on the substitution method² and measured in terawatt-hours³.



Data source: Energy Institute - Statistical Review of World Energy (2024); Smil (2017)
 Note: In the absence of more recent data, traditional biomass is assumed constant since 2015.
 OurWorldInData.org/energy | CC BY

Annual CO₂ emissions

Carbon dioxide (CO₂) emissions from fossil fuels and industry¹. Land-use change is not included.



Energy Consumption mix

Source: Our World in Data

Energy consumption by source

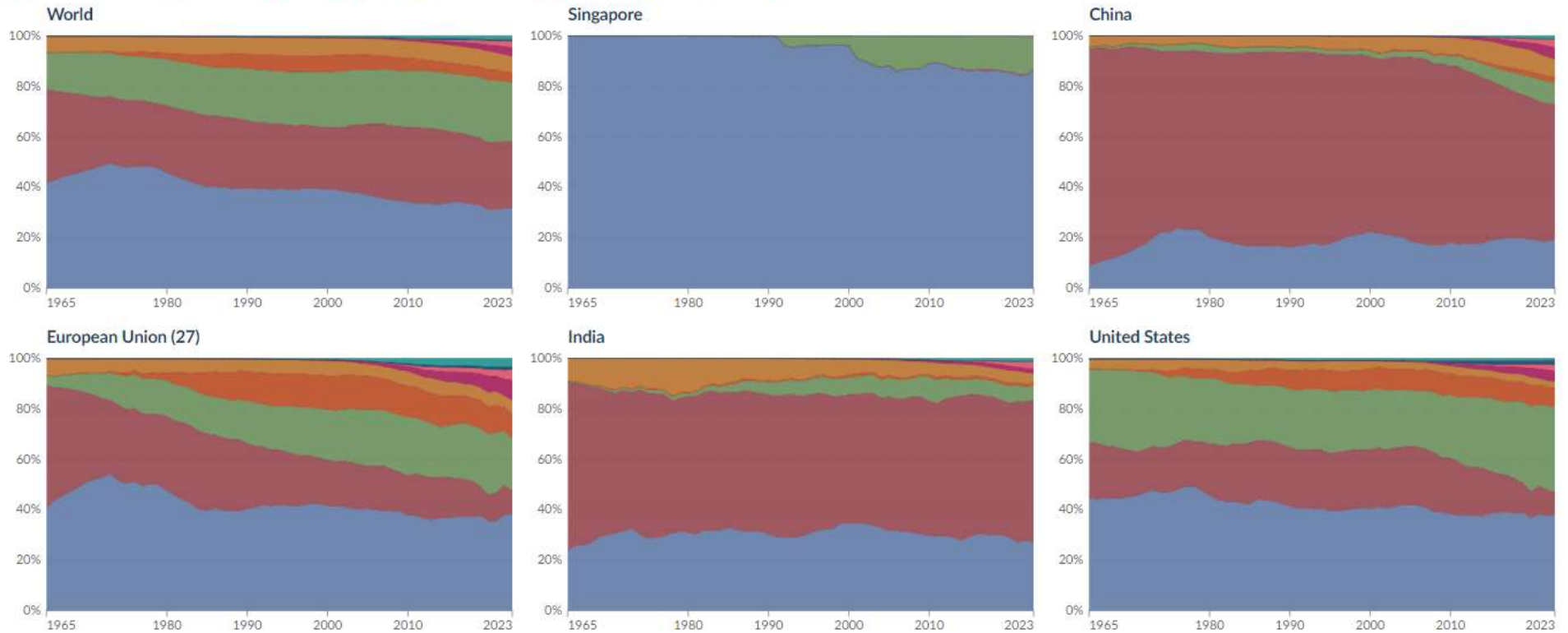
Measured in terms of *primary energy* using the *substitution method*.

Our World in Data

Table Chart

Settings

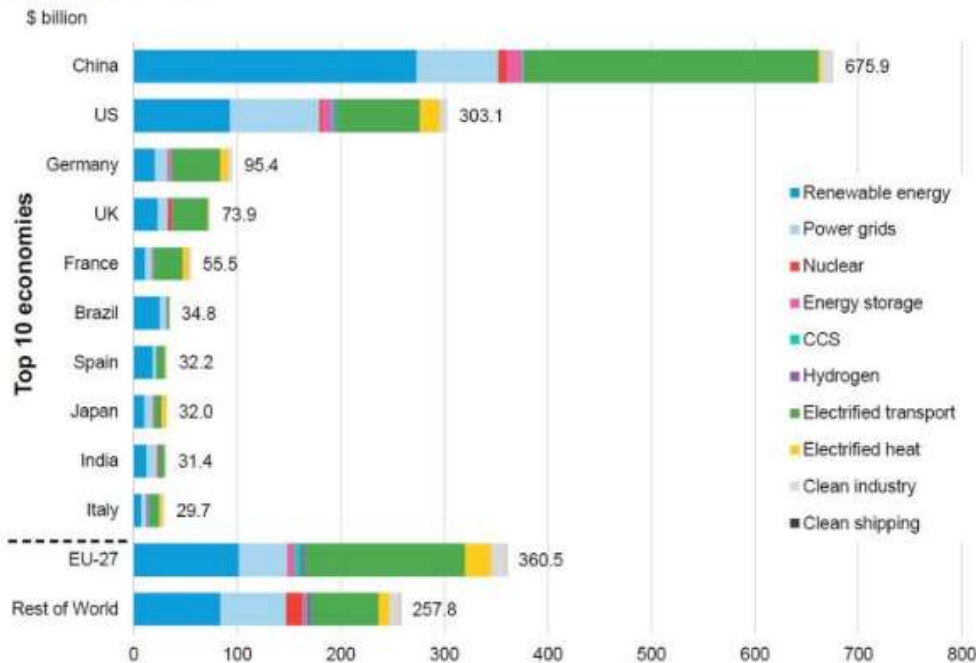
Other renewables Biofuels Solar Wind Hydropower Nuclear Gas Coal Oil



China's leading position in renewables infrastructure

Source: Bloomberg, IEA, Our World in Data

Top 10 economies for 2023 energy transition investment, plus the EU-27 and rest of the world



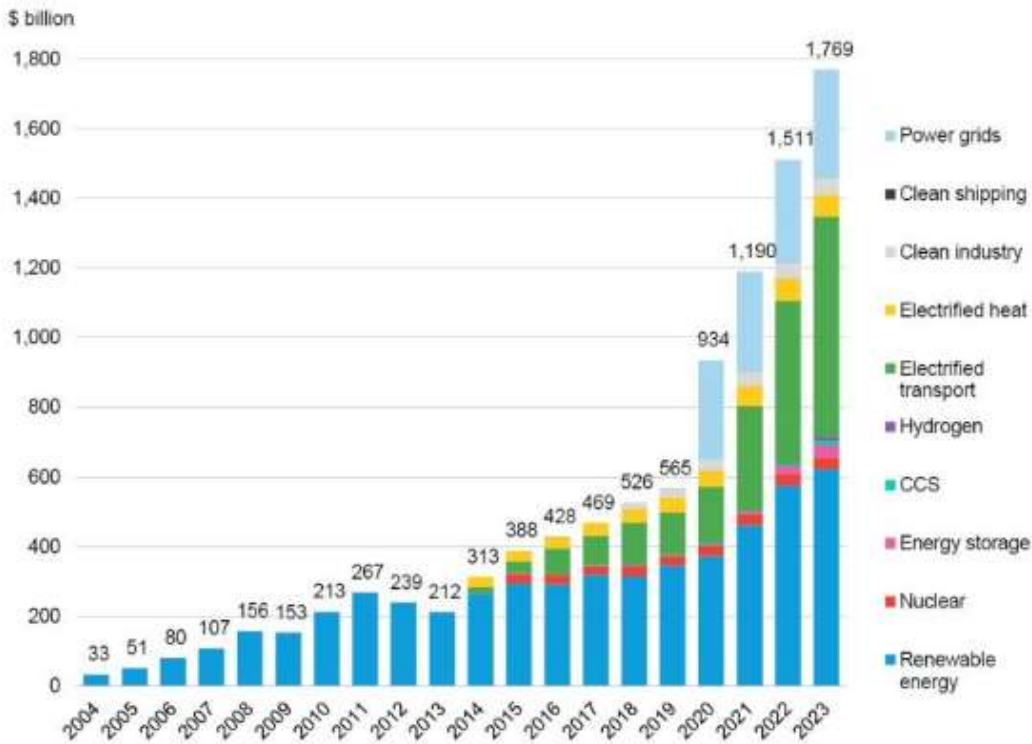
Source: BloombergNEF. Note: EU-27 bar also includes the EU member states shown. Rest of World is global investment excluding the EU and individual economies in the chart. CCS refers to carbon capture and storage.

- China's energy transition investment in 2023 is greater than the US and the EU combined.
- China is also leading the way in terms of:
 - All stages of solar PV production (~75% market share)
 - Extraction and processing of key minerals (e.g. rare earth, graphite - used in batteries and turbines)
 - On/Off-shore wind capacity installed
 - EV production (~60% of global EVs in 2022)

With all the investments/pledges, so what?

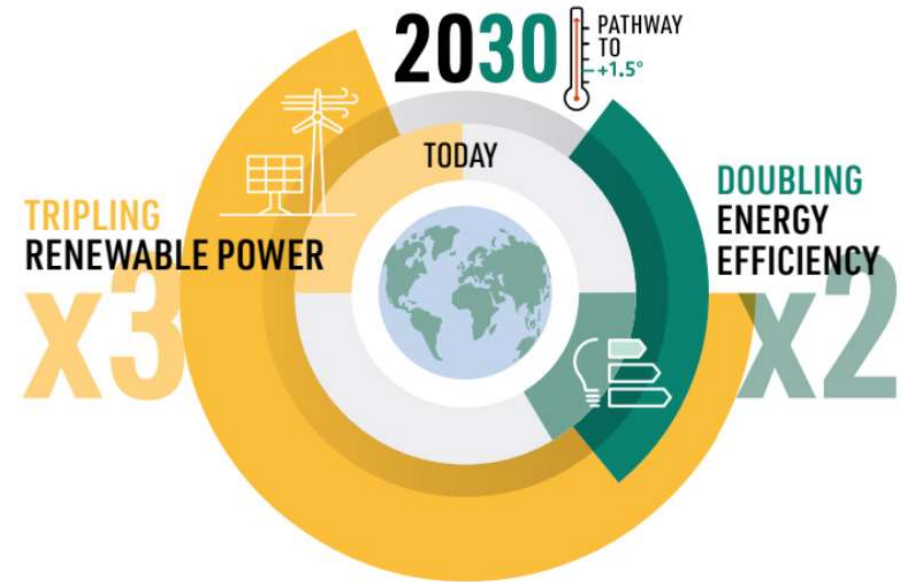
Source: UN, IRENA, IEA, Bloomberg

Global investment in energy transition, by sector



Are we on track to reach net zero by 2050?

- No, commitments made by governments to date fall far short of what is required. (Emissions Gap Report –Nov 2023)





Part 2: What does that mean for our industry?

World Economy's Journey to Net Zero

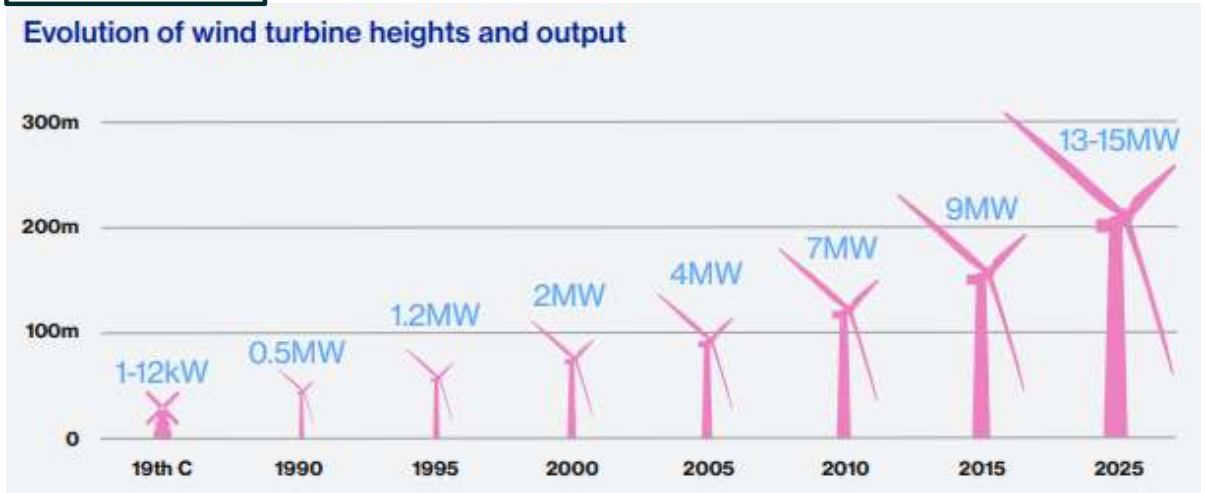
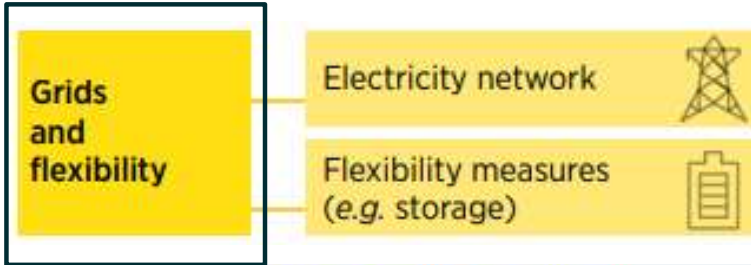
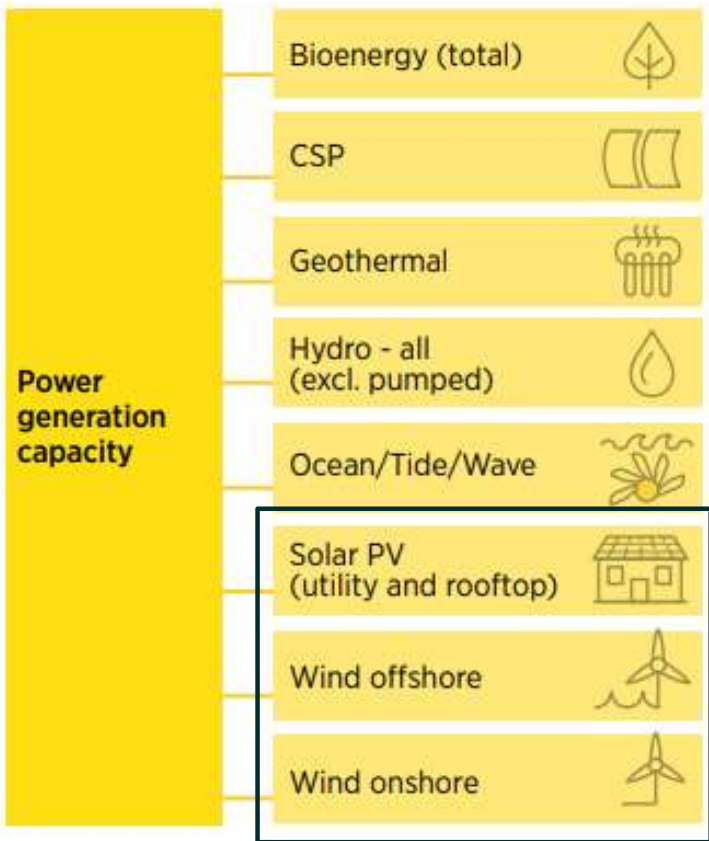
Source: Marakon, IRENA

IRENA: "...A cumulative USD 150 trillion is required to realise the 1.5°C target by 2050, averaging over USD 5 trillion in annual terms..."



Where would the trillions of investments go?

Source: IRENA, Lloyd's, Washington Post

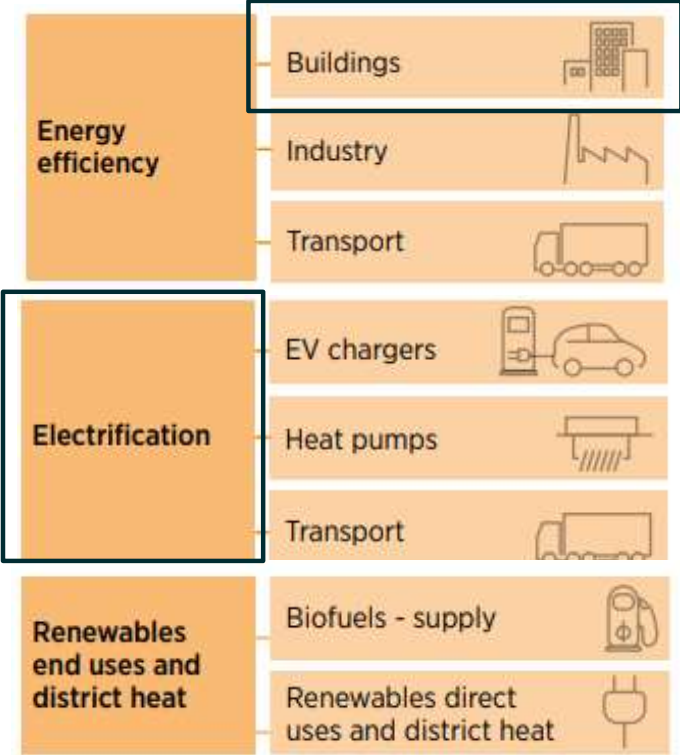


A giant wind turbine blade fell into the sea. It washed up on Nantucket.

The accident south of Cape Cod, Mass., involving the country's largest offshore wind farm, is galvanizing opposition to such projects.

Where would the trillions of investments go?

Source: IRENA, World Economic Forum



ENERGY TRANSITION

Retrofitted buildings are key to the energy transition. 5 ways to unlock progress

Jan 15, 2024



Where would the trillions of investments go?

Source: IRENA, Insurance Day, Reinsurance News, Lloyd's List

Viewpoint: Insurers have a key role to play in the growth of the hydrogen economy

To allow for further investment in hydrogen energy from the private sector, the sector will need to develop bankable value chains, which will, in turn, support insurability

Production of green hydrogen and its derivative fuels

Hydrogen electrolyzers and infrastructure



Hydrogen-based ammonia and methanol



Carbon removal

CO₂ captured from CCS, BECCS and other removal measures



Circular economy measures

Recycling and bio-based products



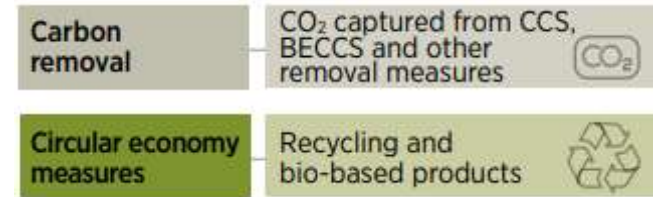
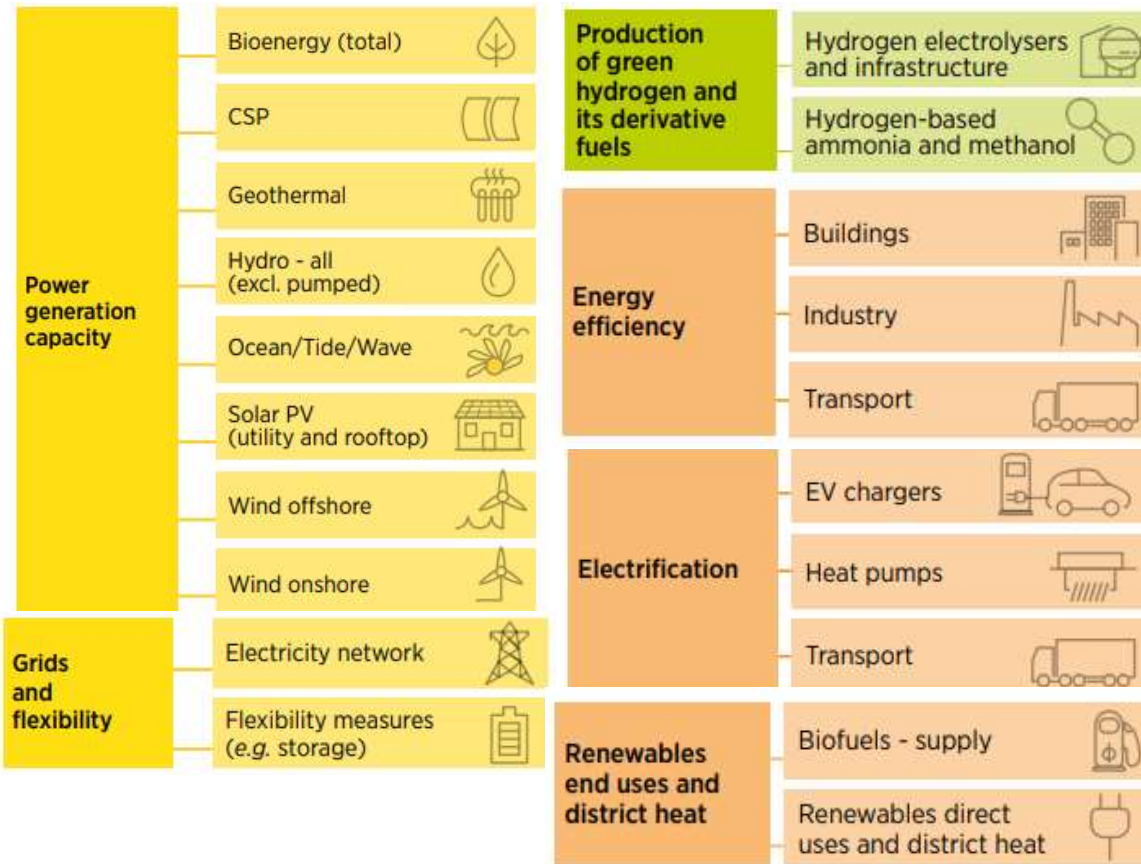
News • Carbon & Climate

Appetite for carbon-related insurance is growing, say experts

The risk of emissions leaking from carbon storage and nature-related projects has held investors back from carbon markets, fuelling an increase in new insurance offerings.

New Opportunities vs New Risks

Source: IRENA, Aria



New value/supply chains, delivery networks, consumption arrangements will need to be built/upgraded and scaled.



Part 3: Introduction to Emissions Reporting

Carbon disclosure/transparency

Source: LSE (Professor Robert Falkner)

- Disclosure of carbon footprint as first step towards carbon reduction strategy.
 - “*what gets measured gets managed*”
- Voluntary, as part of CSR and ESG activities .
- Increasingly mandated by regulations and laws...
 - EU Emissions Trading System
 - UK: carbon disclosure mandate for listed firms
 - US: SEC new rules for climate-related disclosure (*currently stayed while under judicial review*)

Key questions on Carbon disclosure

Source: LSE (Professor Robert Falkner)

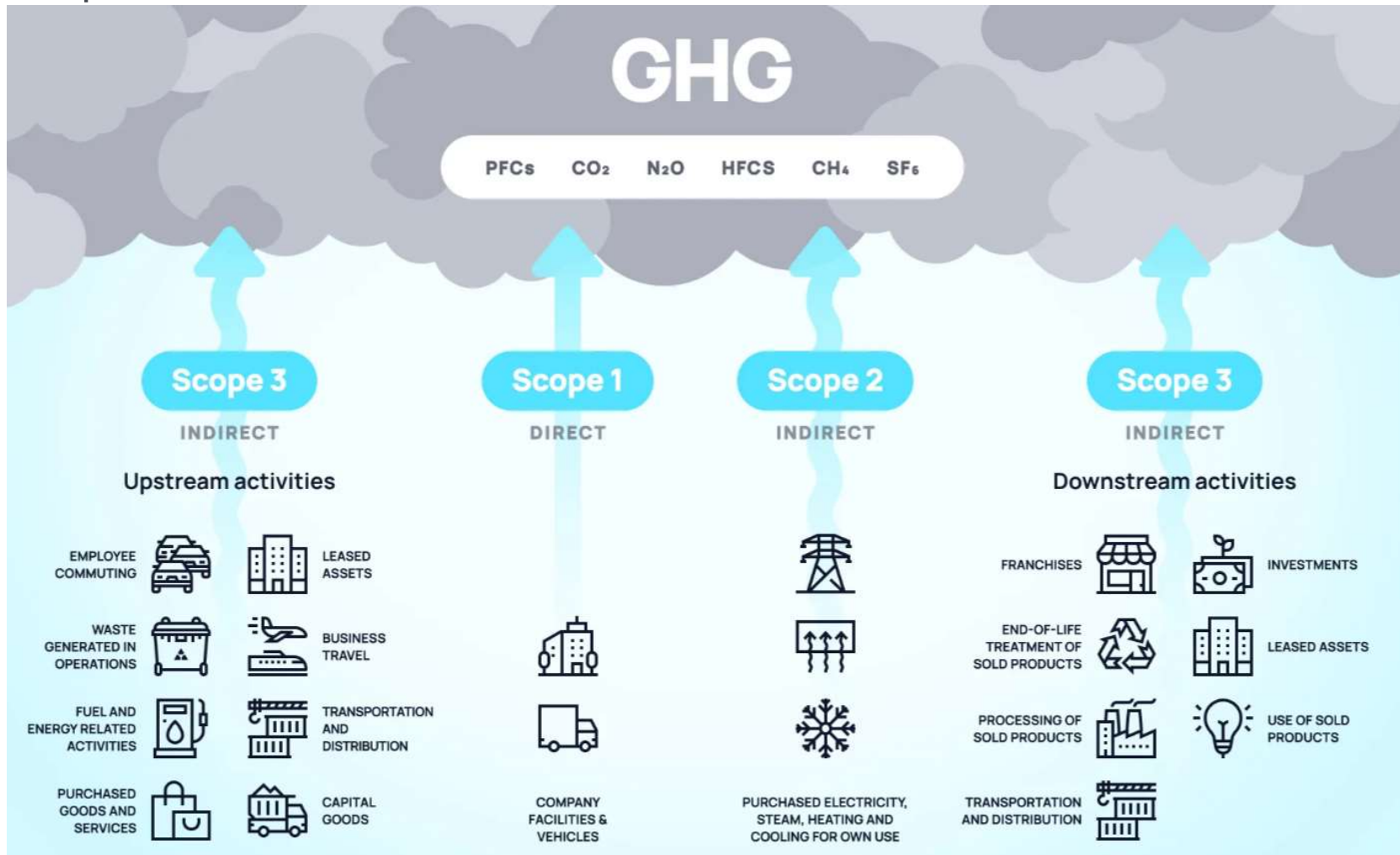
- Which emissions are covered:
 - scope 1 (direct)
 - scope 2 (indirect – e.g. electricity)
 - scope 3 (value chain, travel)

- Target audience:
 - Regulators
 - Investors
 - Consumers
 - Society

- Comparability of carbon reporting?

Different types of emissions (scope 1, 2, 3)

Source: GHG protocol



Difficulty with scope 3 emissions

Example: multinational beer brewer

- Scope 3 (“beer-in-hand”) emissions: purchasing beer ingredients, buying cans/bottles, transporting beer to customers.
- The manufacturing and disposal of packaging makes up the largest element (41%) of value chain footprint.
- Brewer set the aim of reducing scope 3 emissions by 15% by 2022, relative to 2015 levels.
- Worked with suppliers through the production and design of beer cans in a way that reduces related emissions.
- But: how far down the supply chain should the company go? Aluminium producers? Mining operations?

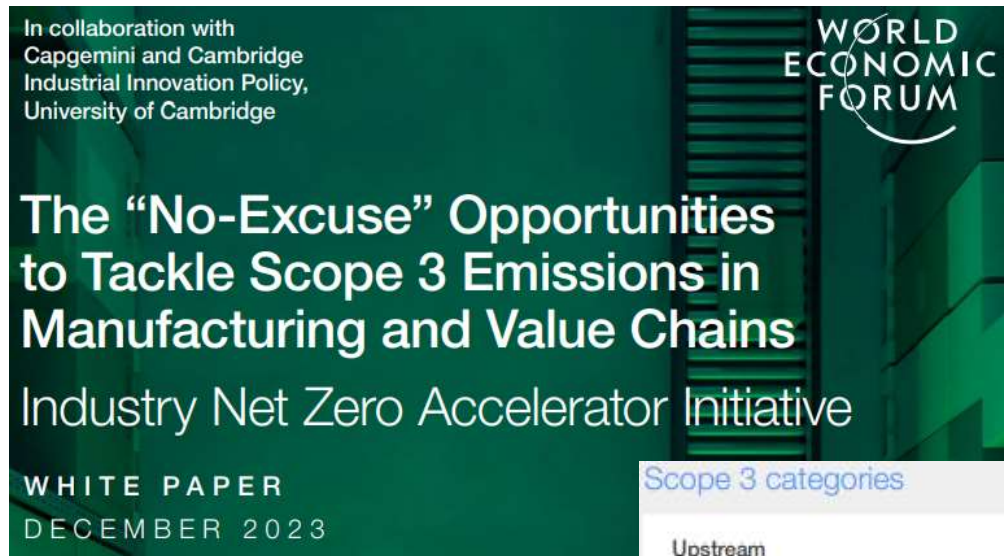
Difficulty with scope 3 emissions

Example: internet retail/delivery platform

- Considerable achievements reported in 2022 Sustainability Report:
 - 90% of electricity consumed comes from renewables;
 - 9,000 electric delivery vehicles globally.
 - 15,000 hydrogen-powered forklifts in its North American fulfillment centres;
 - Carbon intensity of its operations decreased by 7% in 2022.
- But... its scope 3 emissions account for 77% of company's total carbon footprint. How far does the Platform's responsibility extend here?
- Need for supply chain emissions data.

Difficulty with scope 3 emissions

Source: World Economic Forum, GHG Protocol



Scope 3 categories

Upstream

- 1 Purchased goods and services
- 2 Capital goods
- 3 Fuel- and energy-related activities
- 4 Upstream transportation and distribution
- 5 Waste generated in operations
- 6 Business travel
- 7 Employee commuting
- 8 Upstream leased assets

Downstream

- 9 Downstream transportation and distribution
- 10 Processing of sold products
- 11 Use of sold products
- 12 End-of-life treatment of sold products
- 13 Downstream leased assets
- 14 Franchises
- 15 Investments

What does this mean for the insurance industry?

- Scope 3 emissions form the vast majority of emissions for insurers.
 - Upstream emissions vs downstream emissions.
- Data quality and availability for clients' Scope 3 emissions varies greatly.
- Several initiatives are shaping Scope 3 reporting for insurers (e.g. PCAF).
- Strategic Implications for the industry
 - How do we influence indirect emissions we insure/reinsure?
 - Adaptation of underwriting procedures, data management etc.
 - Identify opportunities to mitigate climate risks and support the net zero transition.



Closing Remarks

Summary

- **Part 1: Energy Transition in the macro-environment**
 - Rising energy demand vs stabilising emissions
 - China's leadership in renewable infrastructure
 - \$1.8t to \$5b annual investments?
- **Part 2: What does this mean for our industry?**
 - Energy transition is not just about scaling renewable energy
 - Affects all parts of the economy, all industries, all lines of business, differently
 - New risks vs New opportunities
- **Part 3: Introduction to Emissions Reporting**
 - Climate strategy – need for carbon disclosure/transparency
 - Questions on the extent of responsibility
 - Challenges and importance of Scope 3 emissions

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Questions?

Thank you!

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