Keeping the Paris Agreement alive

The context outlook for Net Zero Mining in Western Australia

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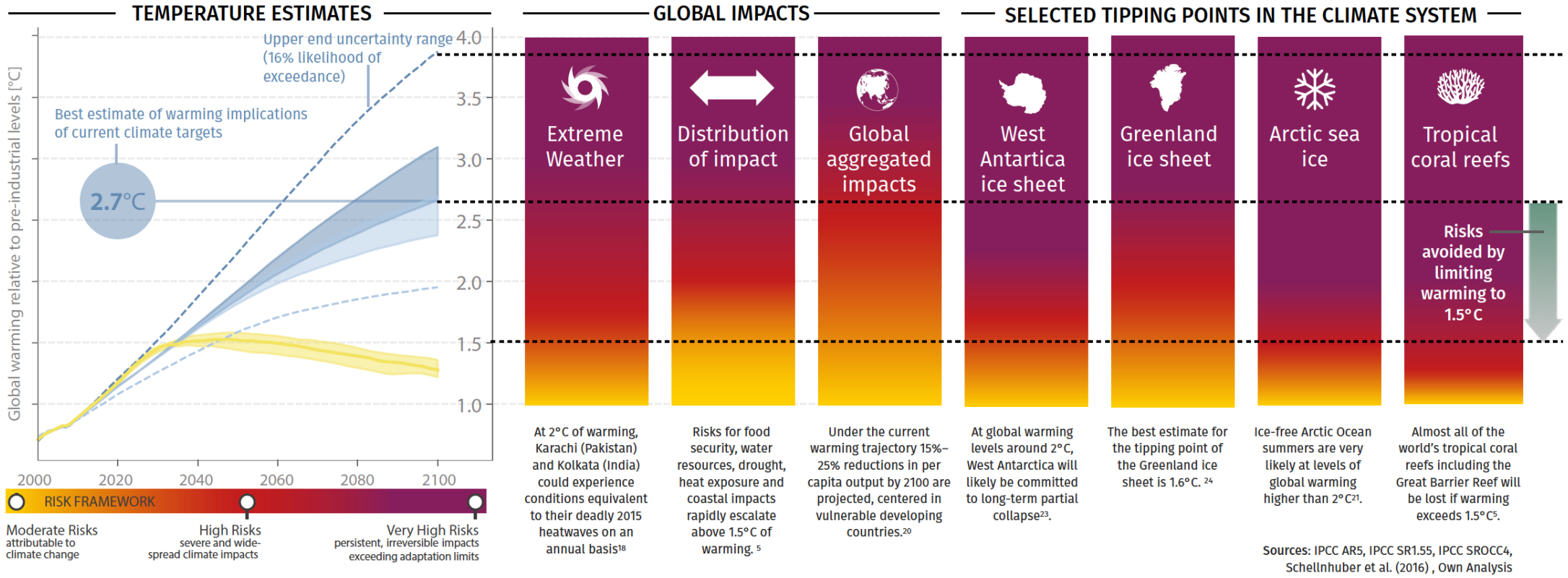
Paris Agreement long-term temperature goal

Article 2

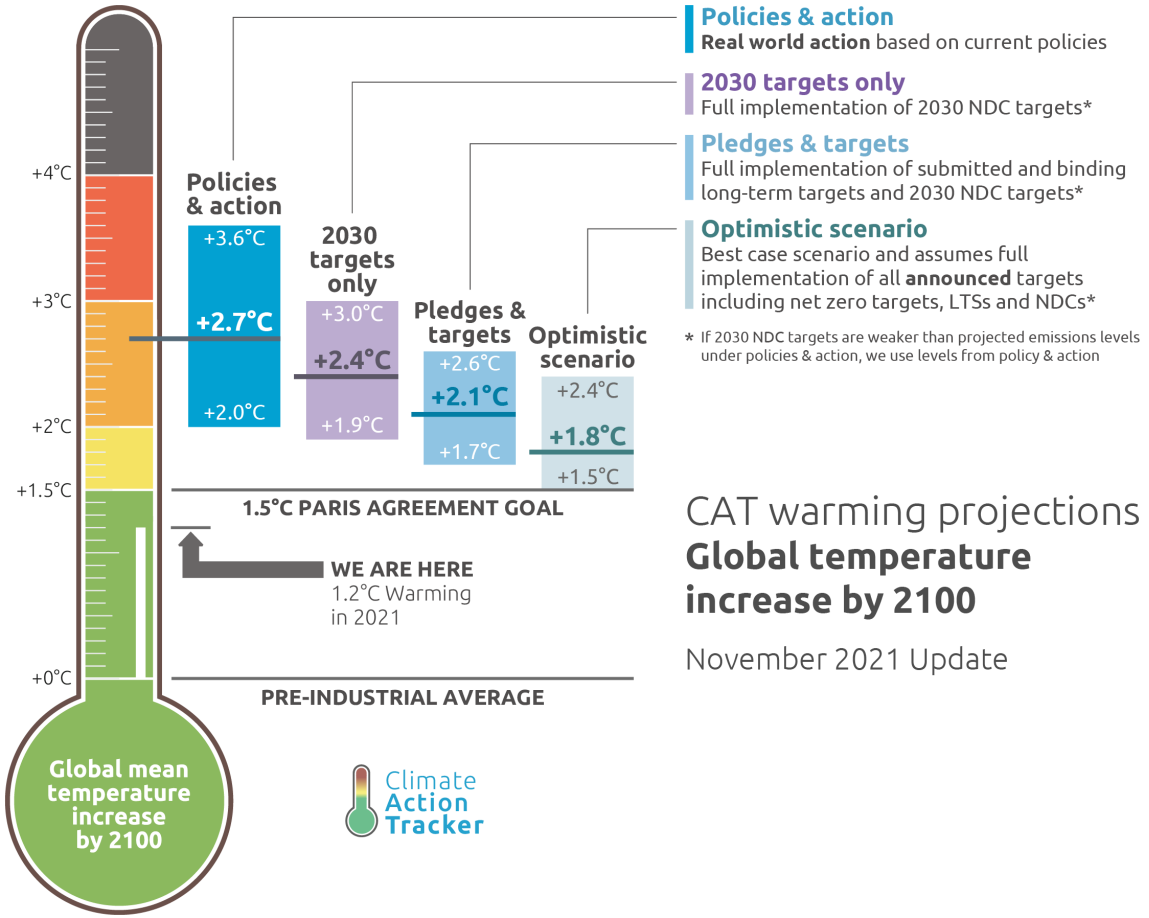
"Holding the increase in the global average temperature to **well below 2ºC** above pre-industrial levels and pursuing efforts to **limit the temperature increase to 1.5ºC** above pre-industrial levels **recognizing that this would significantly reduce the risks and impacts of climate change**"

COP21 · CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

Accelerating impacts with each increment of warming



The world is heading to 2.4˚C of warming with 2030 targets



CAT warming projections
Global temperature increase by 2100

November 2021 Update

www.climateactiontracker.org

- Under current policies, end of century warming will be 2.7ºC
- 2030 targets alone lead to end of century warming of 2.4ºC
- All announced targets – warming of 1.8ºC by the end of the century
- Targets are essential, but mean little in absence of ambitious policies and measures to meet them
- To meet 1.5ºC, all countries need to reduce emissions rapidly
- Policy implementation is slow
- Developed countries need to support developing countries in decarbonising

IEA Net Zero by 2050 Roadmap confirms picture from IPCC 1.5C pathways

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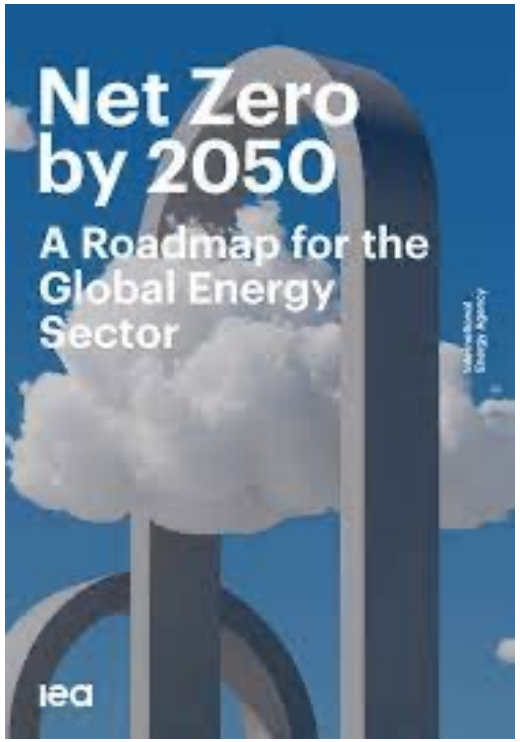
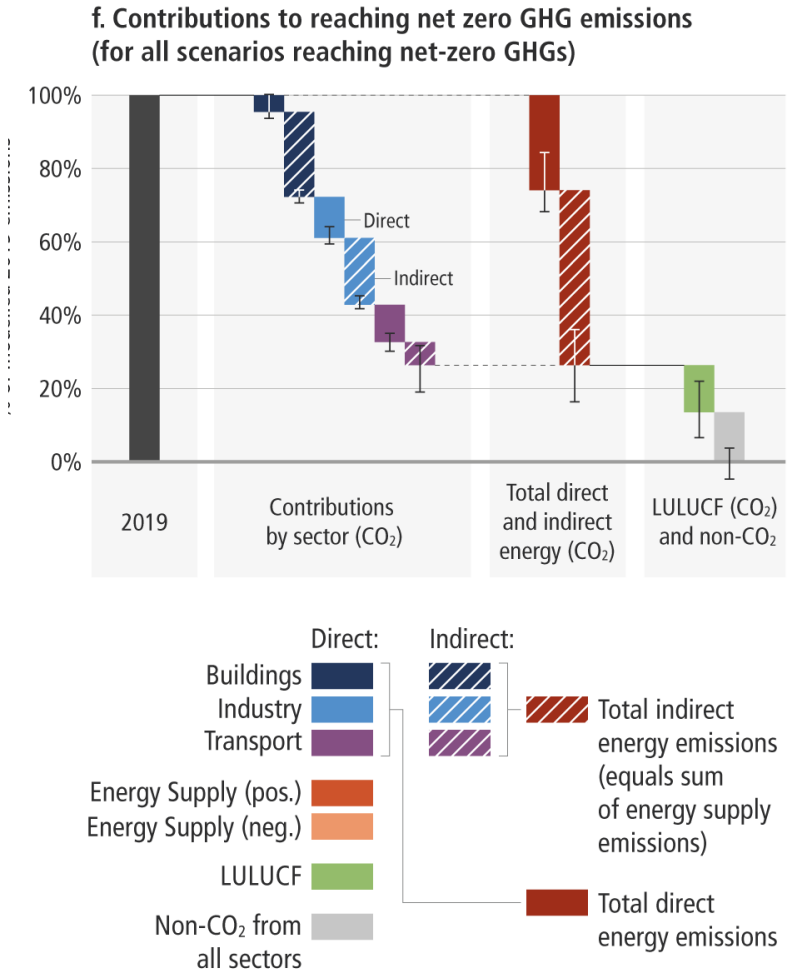
- **Key messages from IEA Net Zero by 2050 Report**
  - Expansion or establishment of new fossil fuel supply infrastructure is not needed under a net zero pathway.
  - No final investment decisions for unabated coal plants
  - Unprecedented clean technology push to 2030
  - No sales of fossil fuel combustion cars by 2035
  - Net zero GHGs for the global electricity sector by 2040



https://www.iea.org/reports/net-zero-by-2050

Reaching net zero by 2050: Contributions needed from all sectors



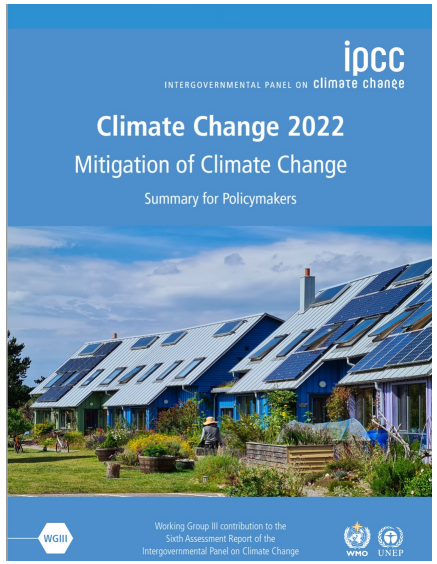


Figure SPM.5: Illustrative Mitigation Emissions Pathways (IMPs)

Coal and gas will need to decline quickly to meet 1.5 limit

To be 1.5°C compatible:

- Unabated coal and gas needs to peak very soon and decline rapidly.

- It is highly unlikely that the scale of carbon capture required to allow for additional fossil fuel use will be available in the future.

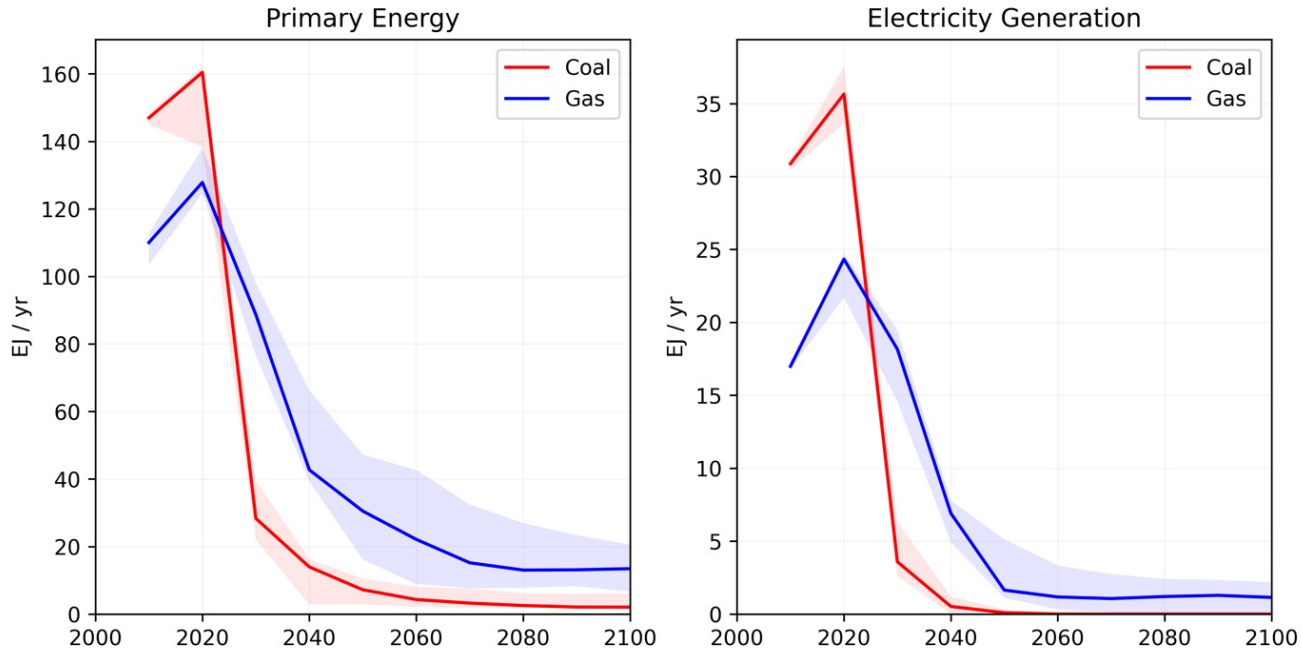
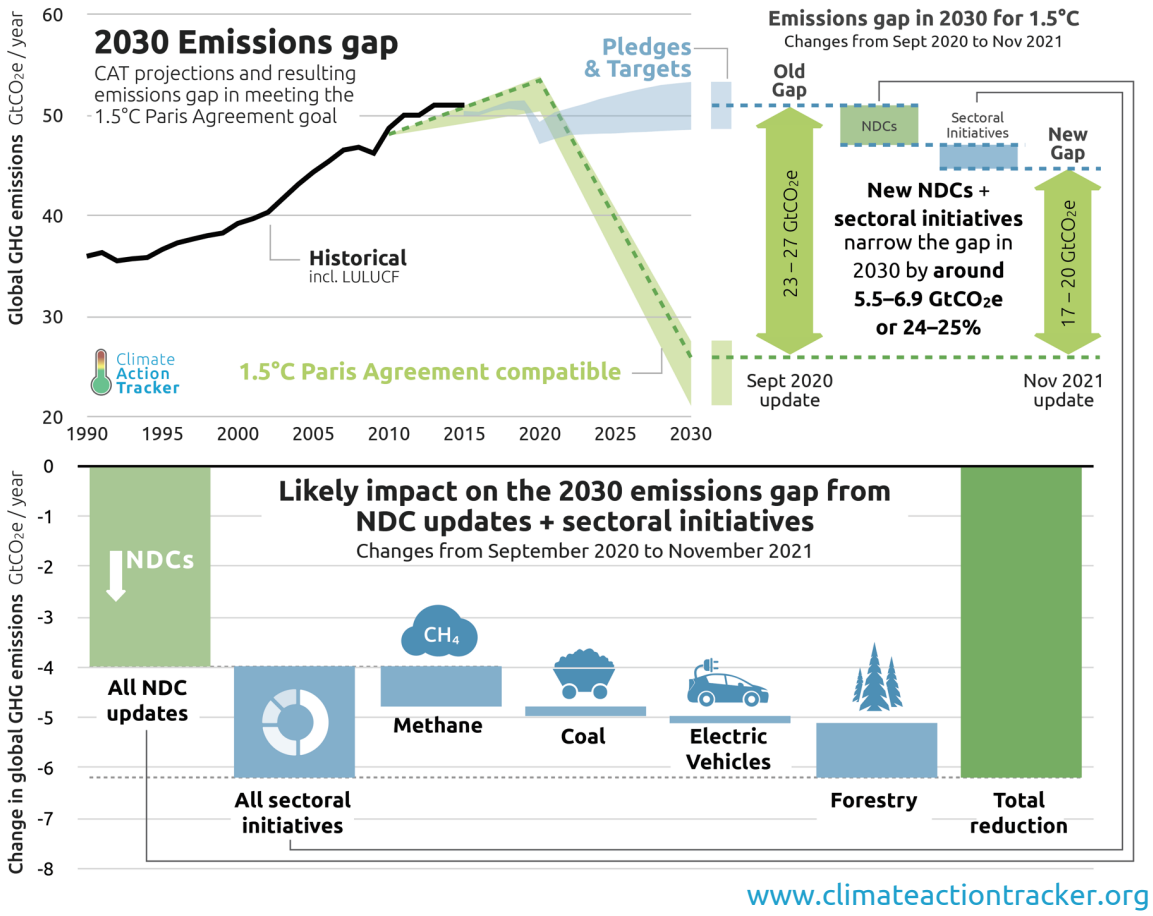


Figure 2: Paris Agreement (1.5°C) aligned Global Gas Primary Energy Supply and Generation Curves from 2022 IPCC 1.5 report

2021, Why gas is the new coal, Climate Analytics

The critical decade: closing the 2030 emissions gap



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New sectoral initiatives from Glasgow could close gap by **an additional 9%**

Rapid change in all sectors will be needed

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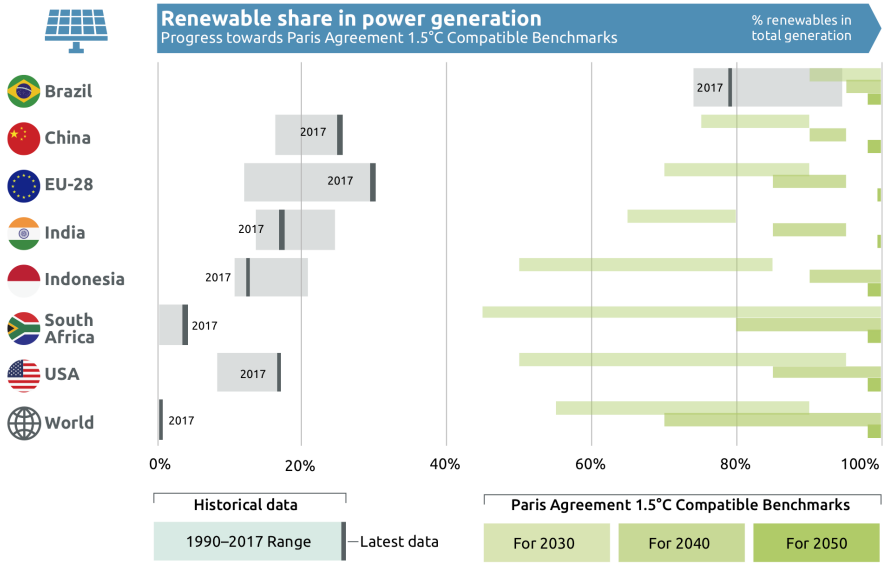
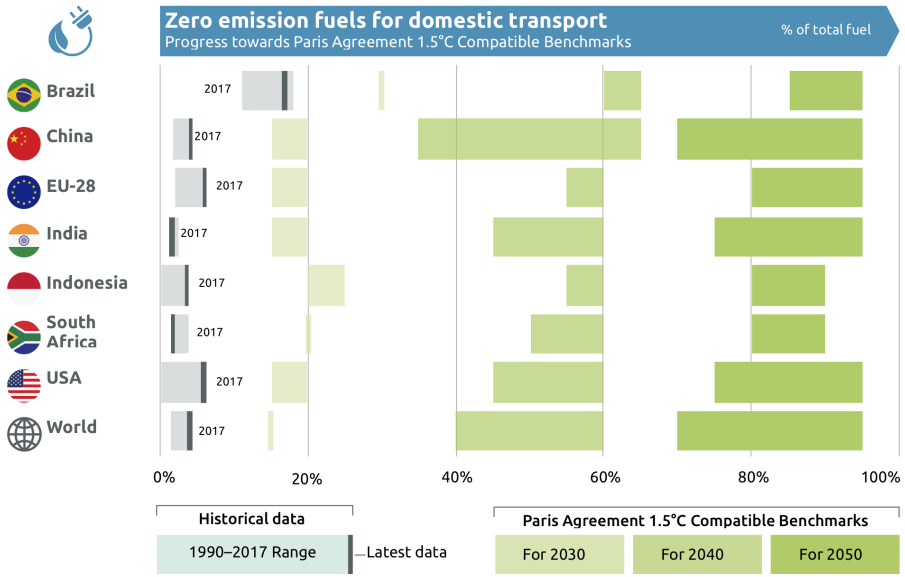
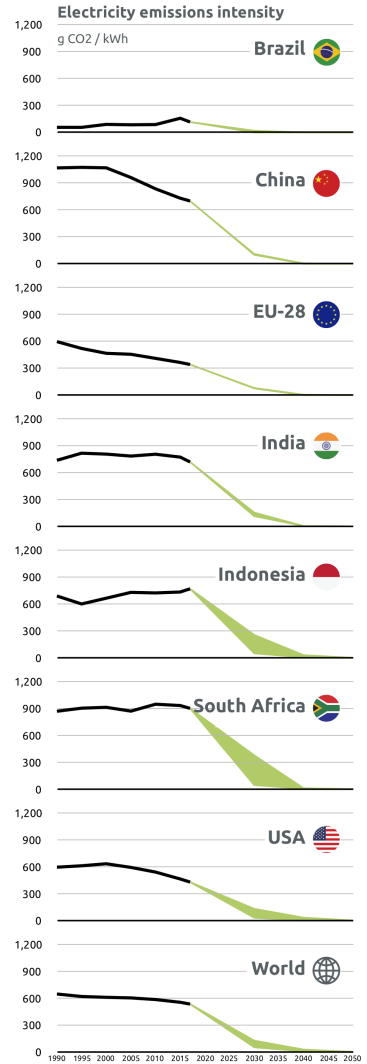
PARIS AGREEMENT COMPATIBLE BENCHMARKS
FOUR MAJOR SECTORS

Power | Transport | Industry | Buildings



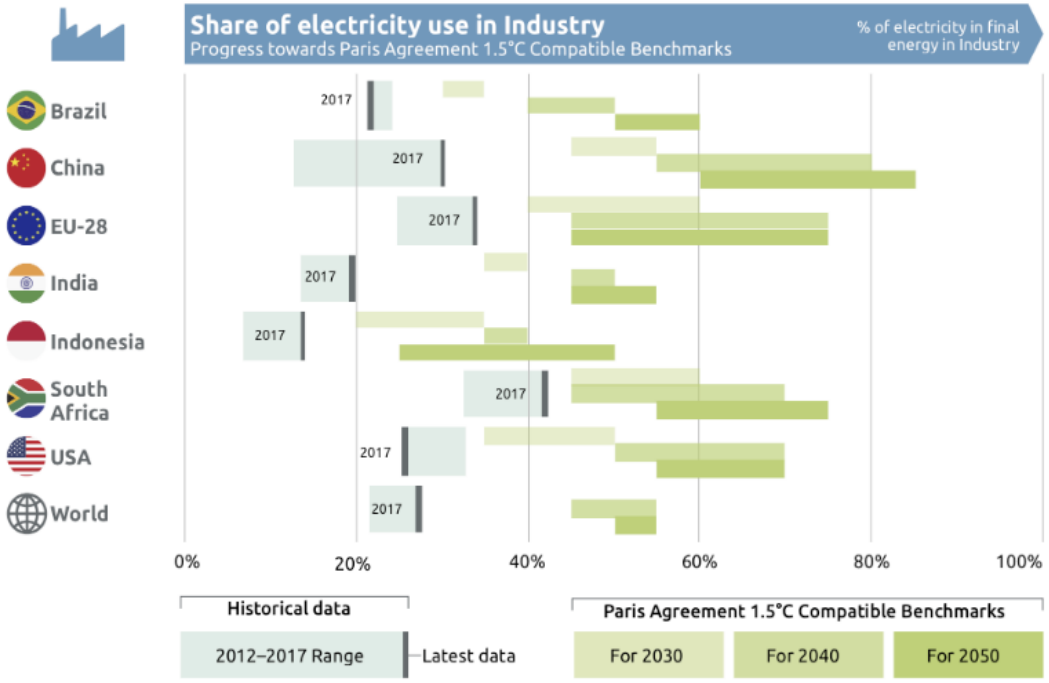




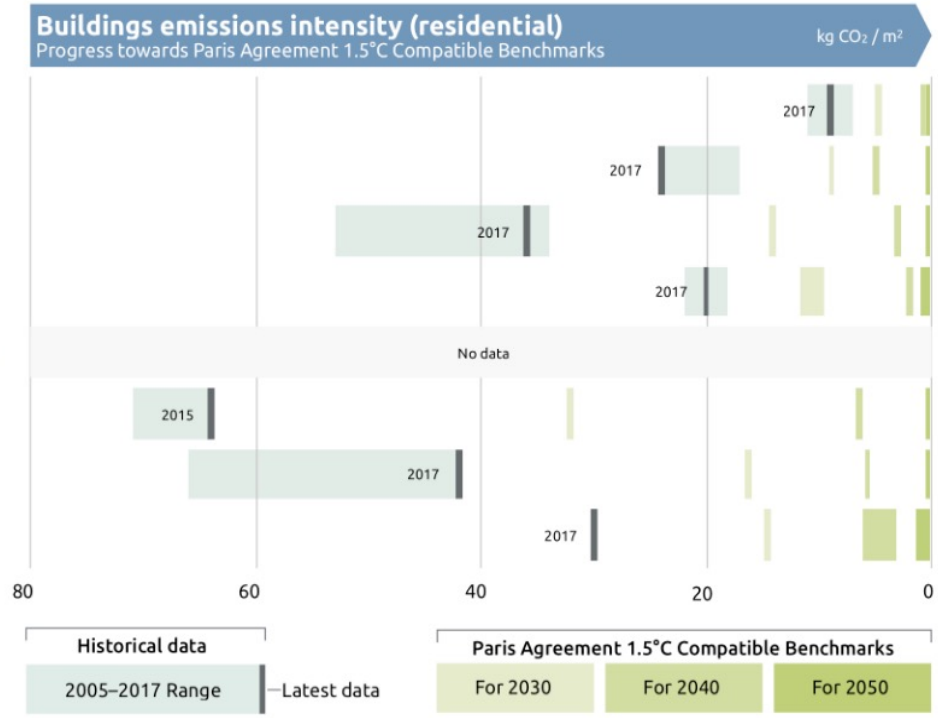
climateactiontracker.org/publications/paris-agreement-benchmarks/

Electrification is central to 1.5C transformation

Share of electricity in final energy in the Industry sector needs to reach close to **50% by 2050 globally.**



Buildings emissions intensity needs to reduce by **at least 90-95% by 2040** for residential and commercial buildings.



Australian action is needed across all sectors to achieve net zero by 2050

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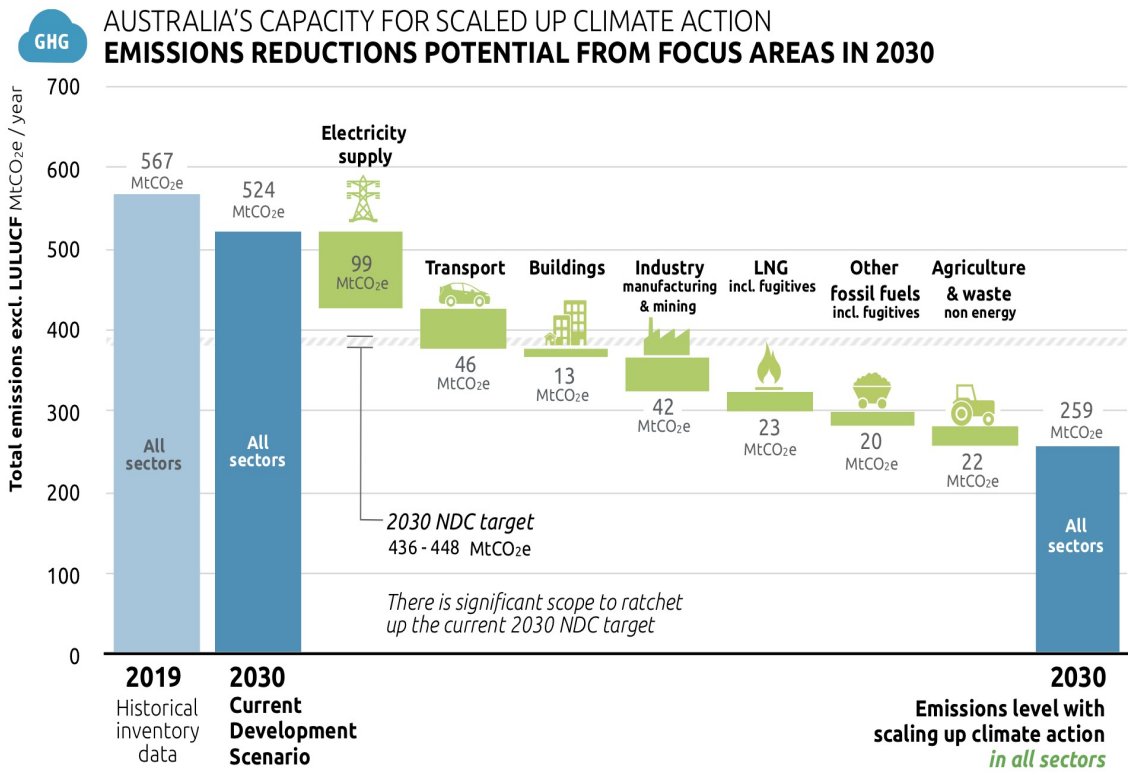
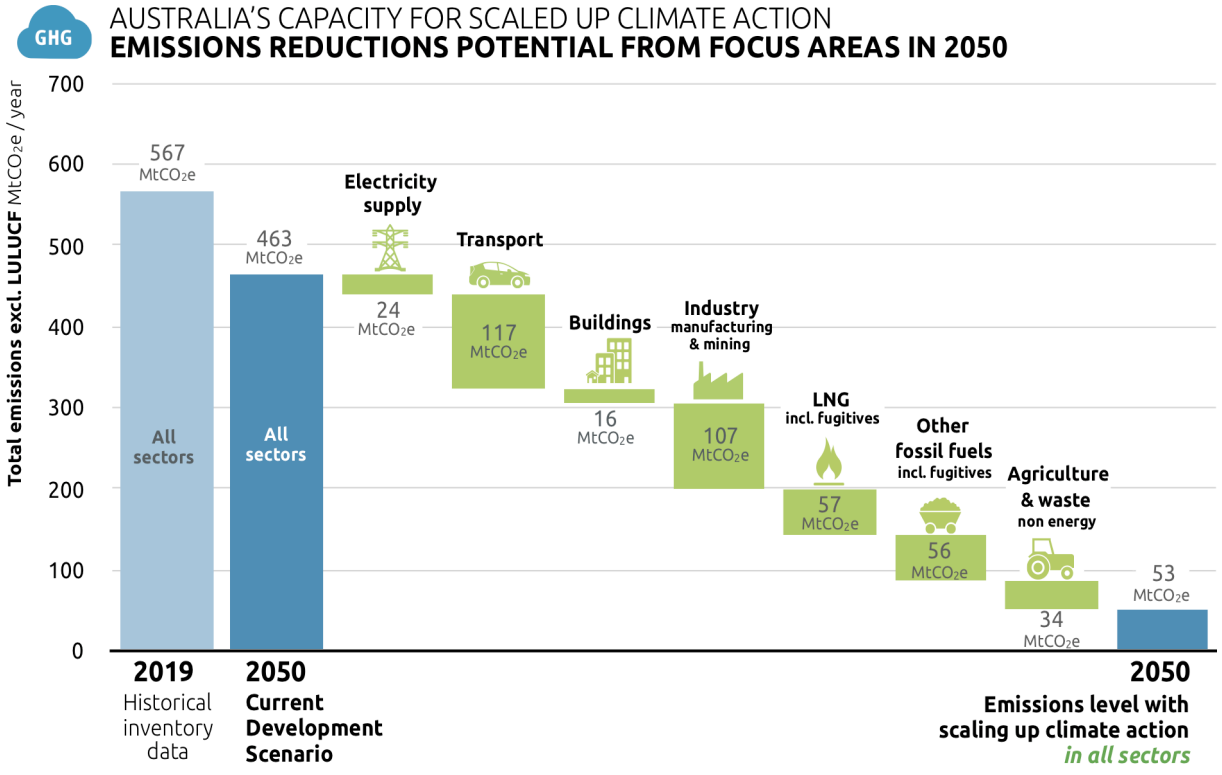
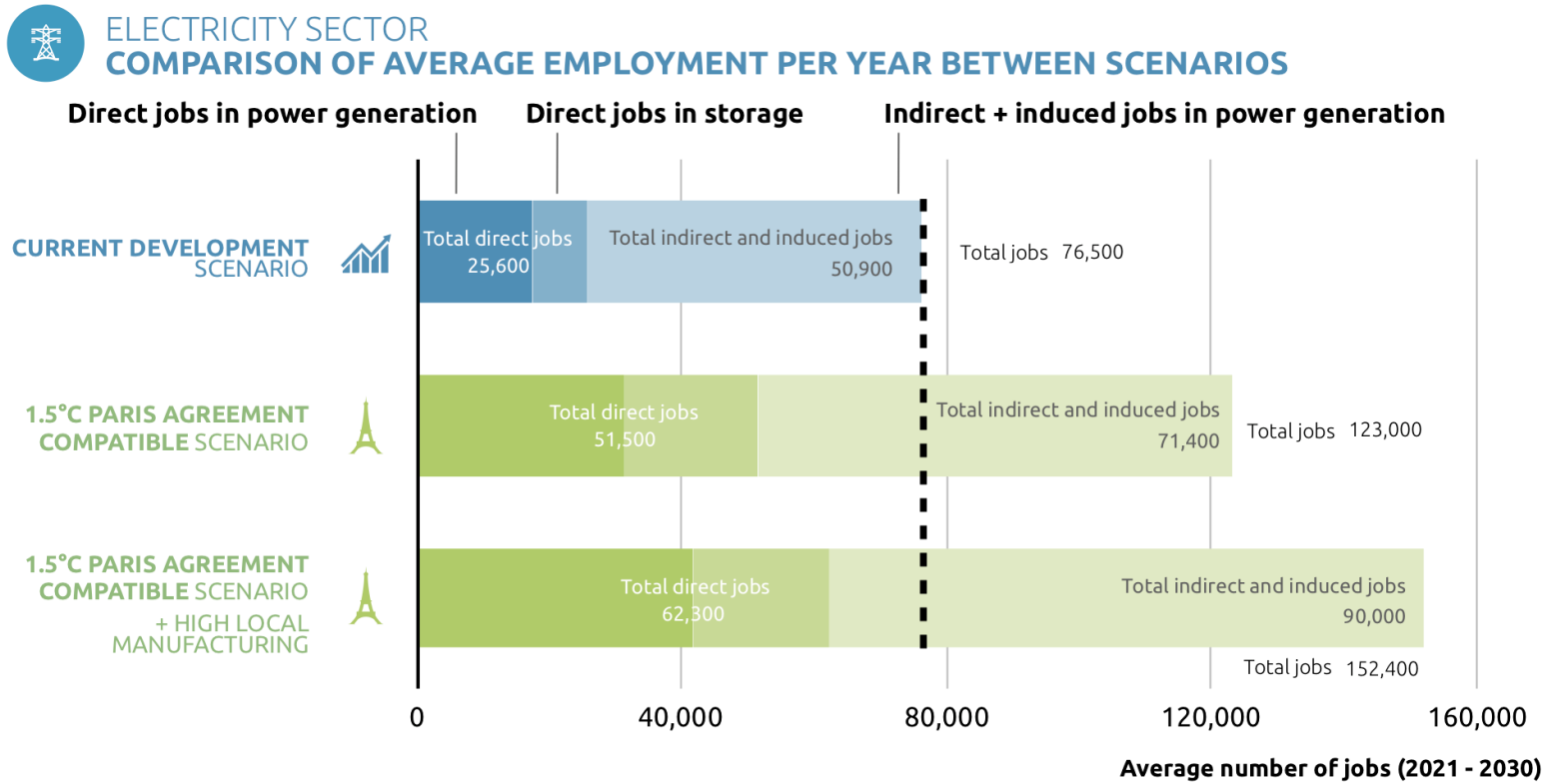




2020, Scaling Up Climate Action in Australia Report, Climate Analytics

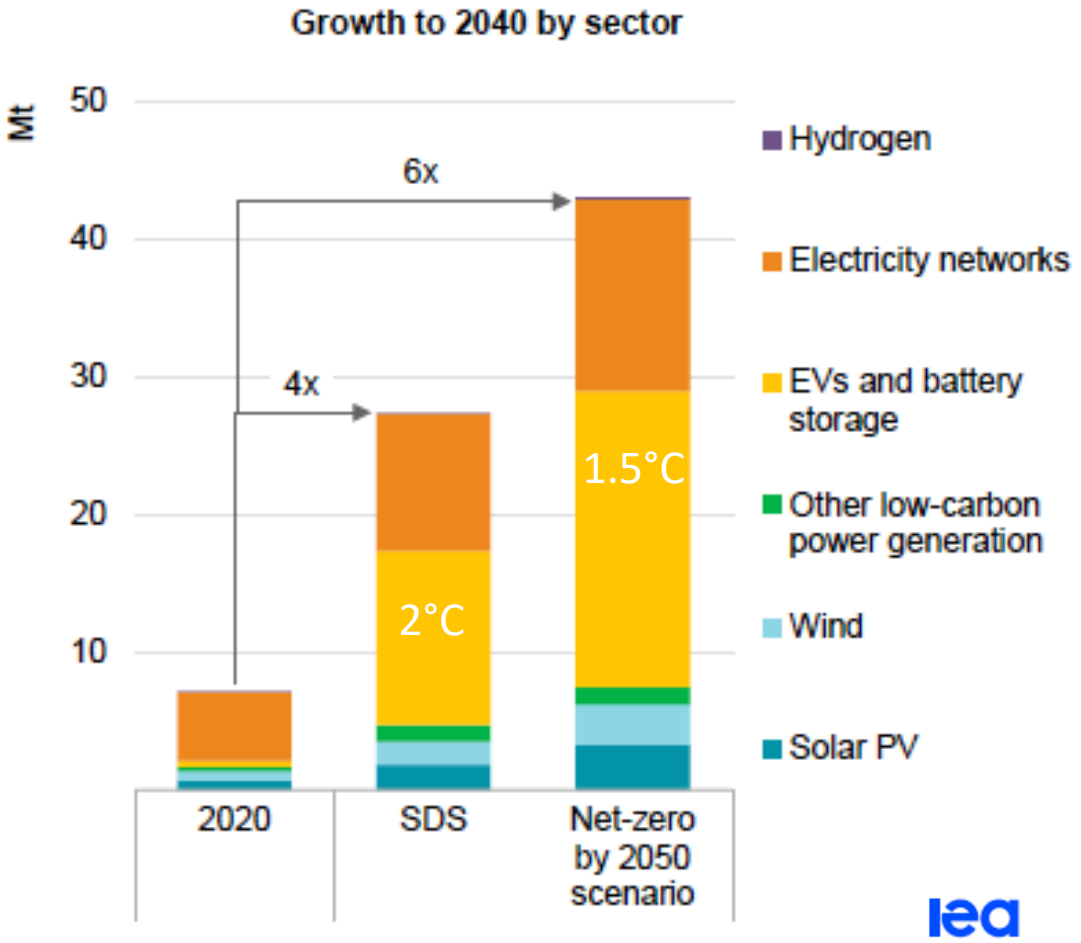
Decarbonising electricity by 2030 will bring large jobs benefit



- 46,000 additional jobs between 2021-2030 compared to the current trajectory
- 76,000 if combined with a policy for more local manufacturing of wind turbines, solar panels, batteries

Net Zero transition requires a major investment in the minerals sector....

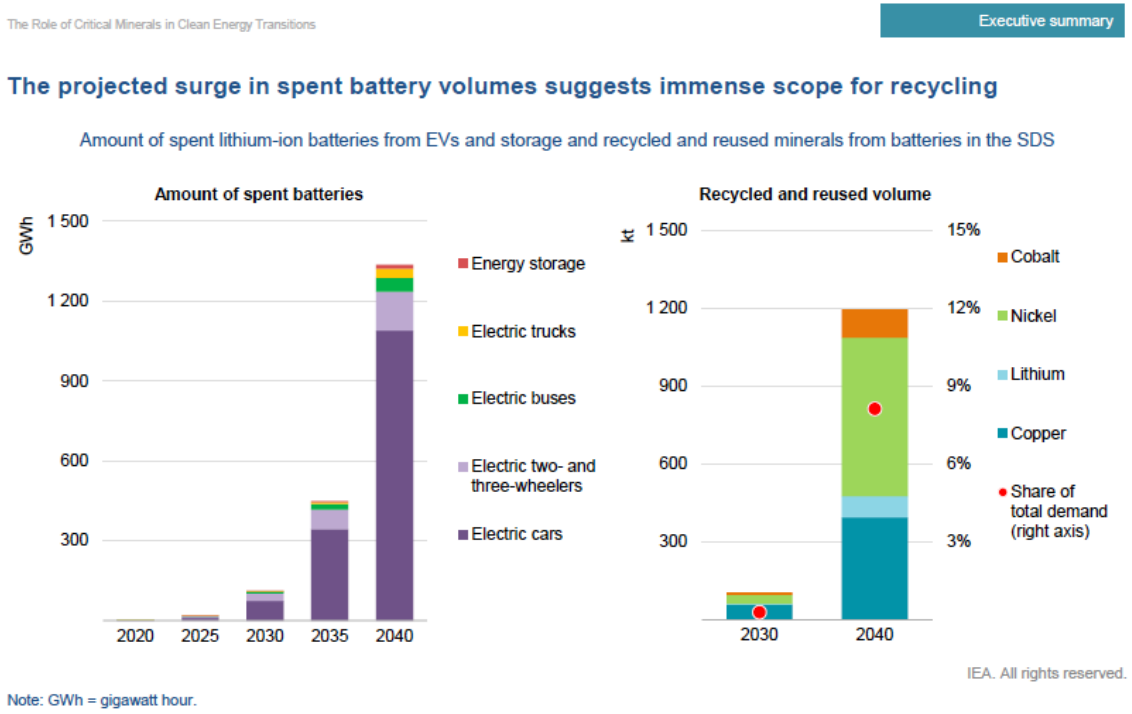
Projected 6x growth in the mineral sector in a 1.5°C world.



Notes: Mt = million tonnes. Includes all minerals in the scope of this report, but does not include steel and aluminium.

….But will also need a greater investment in resource efficiency and recycling

Scaling recycling can relieve the pressure on new supplies and reduce environmental footprint



Getting to net zero and WA – Iron ore

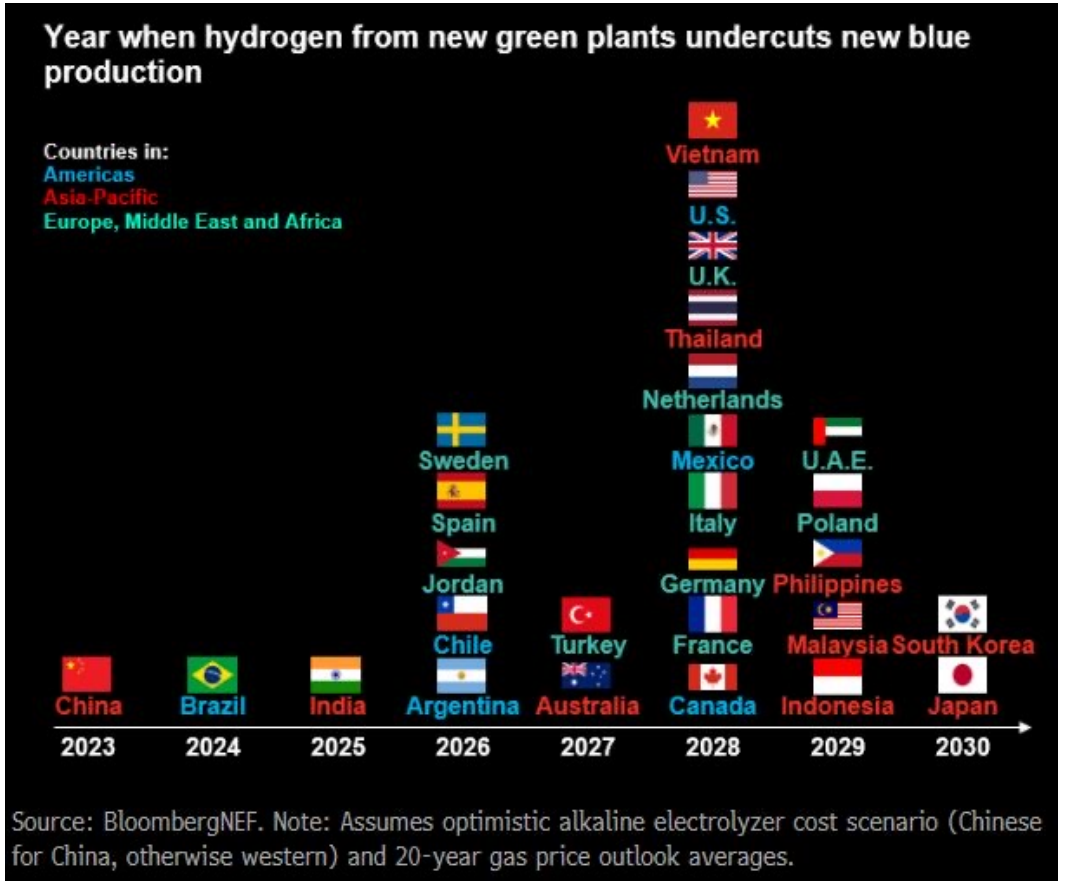
- **Net zero mining is just the start**
  - As the largest **iron ore** supplier in the **world** (37% of **global** supply in 2021) **Western Australia** has a key interest in leading the way in this market
- **Accelerated steel decarbonization is key to keeping 1.5°C alive**.
  - Steel sector emissions need to fall by at least 50% by 2030 and by 95% by 2050, on 2020 levels.
  - 10-year delay results in additional 20 $GtCO_2$ from steel industry between 2020 and 2050 ca 5% of the remaining global total carbon budget.
- **Demand-side levers are critical**
  - Material efficiency measures and scaling up steel recycling accounts for 50% of steel sector mitigation in 2050.
- **Green H2 is a major opportunity for decarbonizing steel**

https://www.e3g.org/publications/1-5c-steel-decarbonising-the-steel-sector-in-paris-compatible-pathways/

Green hydrogen opportunity

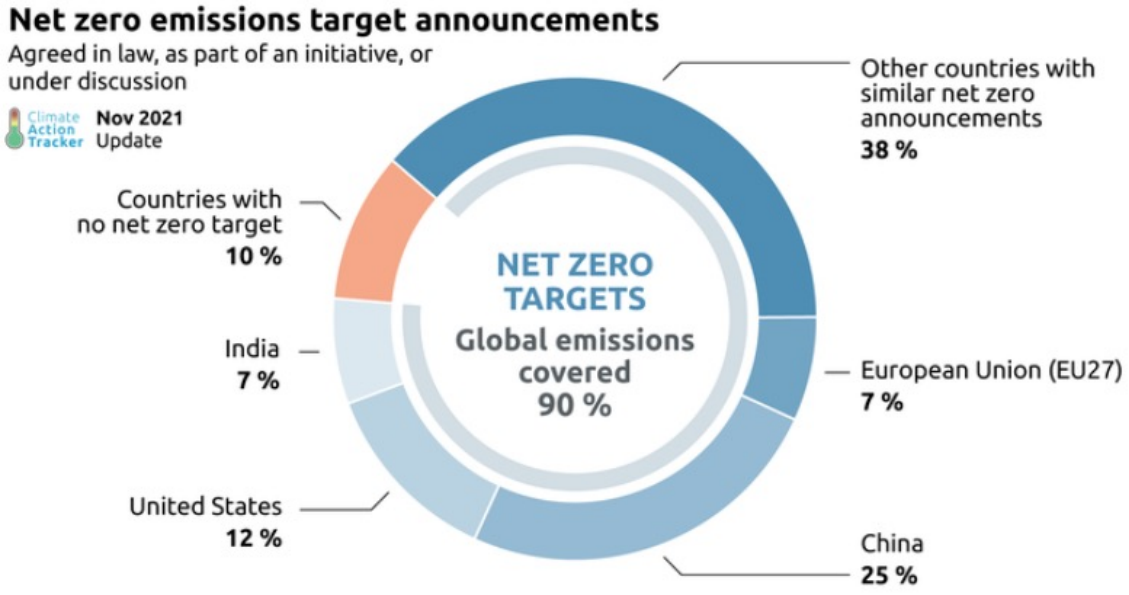
As the price of electrolysers rapidly declines, 'green' hydrogen from renewables will be cheaper to make than 'blue' hydrogen — produced from natural gas with carbon capture and storage — across the world by 2030. Blue hydrogen project developers will increasingly need subsidies to stay viable.

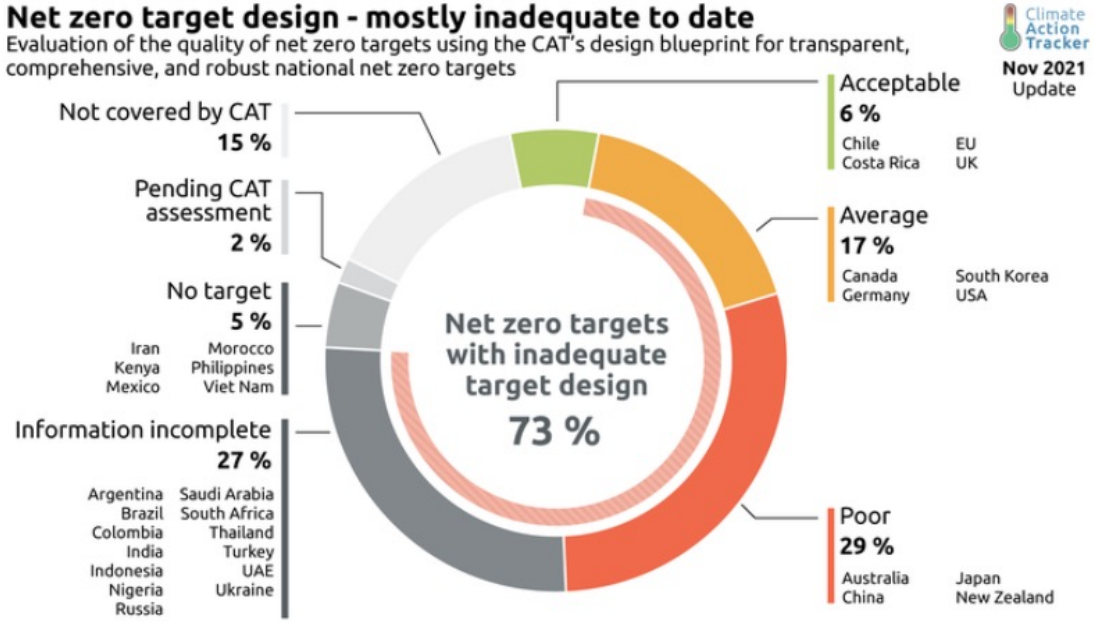
BloombergNEF



https://about.bnef.com/blog/hydrogen-10-predictions-for-2022/

Net zero targets cover 90% of emissions but remain inadequate





To achieve Net Zero mining, we need to…

- Focus on real emission reductions in all aspects of mining.
- Find ambitious, credible transition plans that secure real, verifiable emissions reductions.
- Take advantage of the opportunities for low and zero carbon mines.
- Support policies that enable the scaling and deployment of transformational technologies.
- Search for partners and opportunities to reduce Scope 3 emissions – Green steel is one example

WA's interest in urgent global action to limit warming to 1.5oC

Adaptation has limits

Nature in the southwest cannot adapt to these rapid changes. The only way to stem the damage to nature and humans is to stop greenhouse gas emissions.

Australia must take responsibility for its emissions and show ambition beyond the weak promise of net-zero by 2050, and commit to real 2030 targets consistent with the Paris climate treaty.

Otherwise, we will witness the collapse of one of Australia's biological treasures in real time.

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And we are feeling the heat: extreme heat days are increasing rapidly…faster than projections account for…

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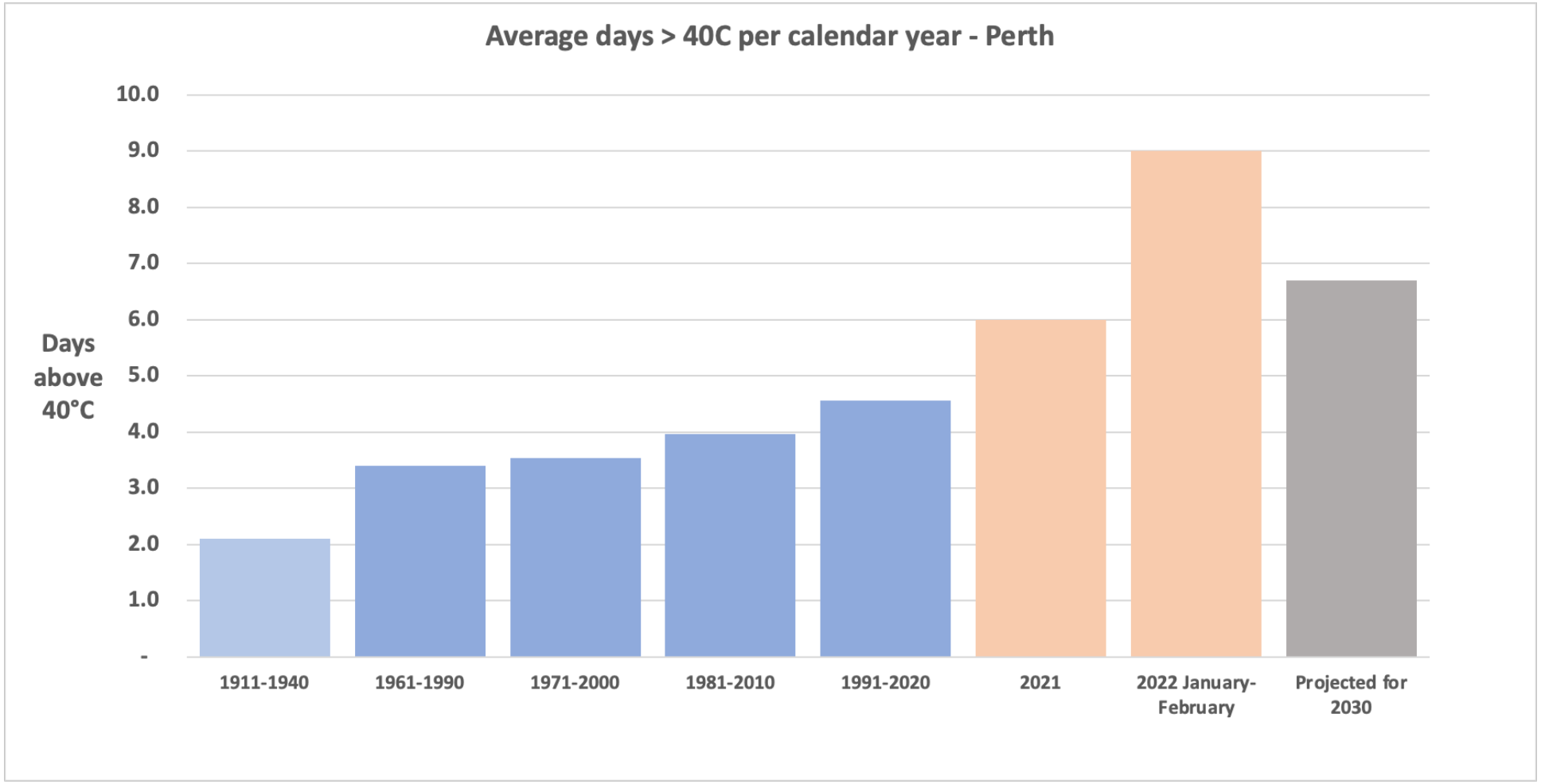
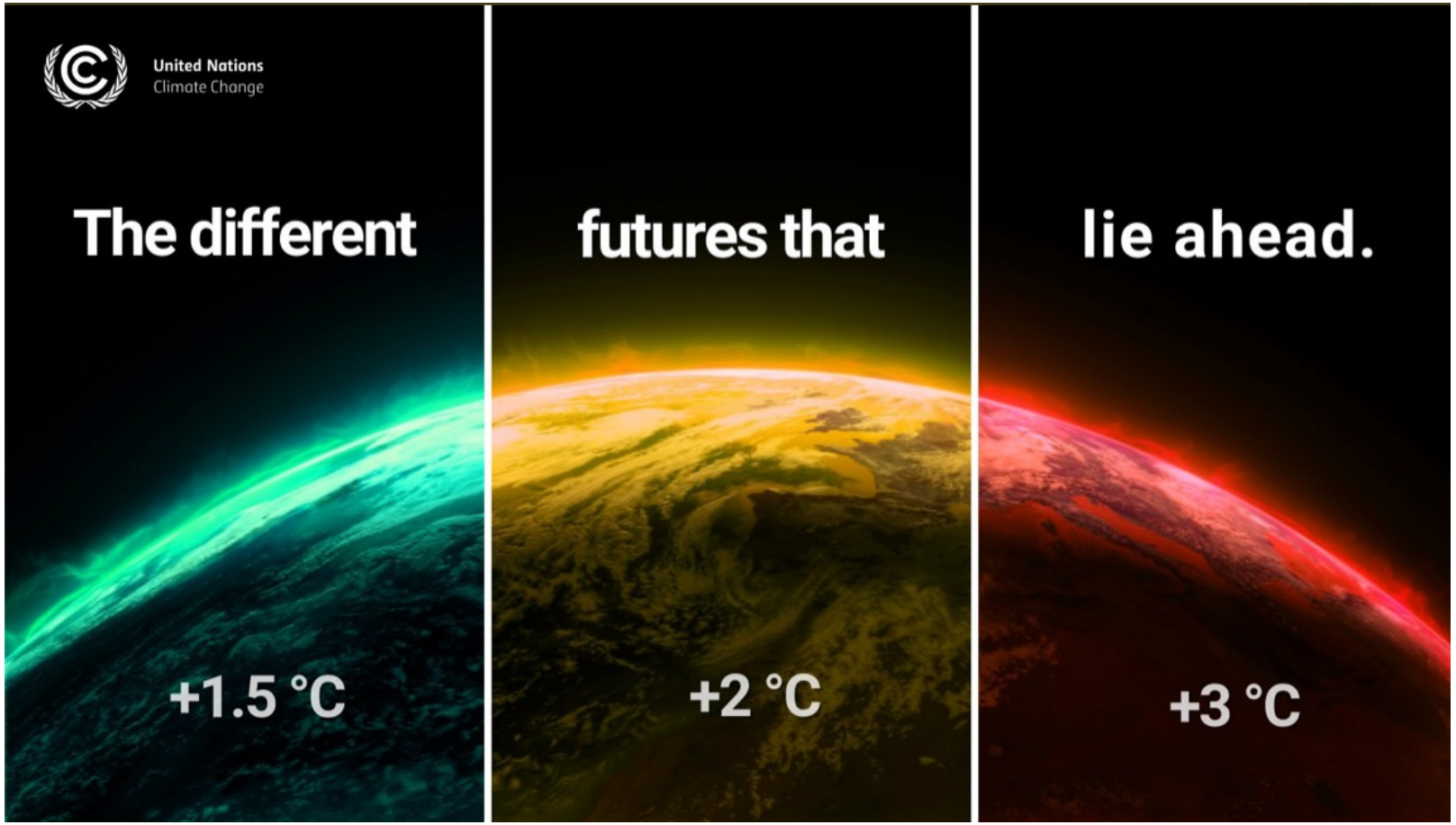


Critical decade ahead…
High level push from UN Secretary General



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