Pre-AGM analysis: Glencore plc 2023

ACCR research presentation for investors - analysis of Glencore’s Climate Report 2022; updated analysis on forward coal emissions; and ACCR voting intentions for the 2023 AGM.

April 2023

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The 2022 Climate Report fails to demonstrate Glencore’s thermal coal business is aligned with the Paris Agreement, or that its capex commitments on thermal coal are Paris-aligned.

When charting its emissions reductions targets, Glencore is persisting in using an IEA pathway that includes all fossil fuels, including the slower decline rate of gas (see p.10, 2022 Climate Report), when a coal specific pathway is more appropriate considering emissions from coal production make up ~90% of Glencore’s total emissions. Glencore has resisted investor encouragement to demonstrate alignment with the coal-specific pathway outlined in the IEA’s Net Zero Emissions pathway.

Based on current disclosures by Glencore and its stated strategy, Glencore’s forecast cumulative emissions from coal production do not appear to be Paris-aligned.

If Glencore wants investors to trust its strategy is both value accretive and Paris-aligned, then investors require clearer disclosure on the specific alignment of the coal business.

The proposed Teck merger, demerger and calls for thermal coal spin out, only heightens the importance of greater transparency on how the company’s thermal coal production aligns with Paris, and for investors to signal support for greater disclosure of the climate impact of Glencore’s thermal coal production.

ACCR intends voting FOR the thermal coal production resolution, AGAINST the Climate Report 2022. Investors may choose to vote AGAINST directors as per each investors’ own climate voting policies.
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Glencore’s emissions footprint and 2035 emissions target
**Emissions footprint:** Glencore’s disclosed annual emissions are significant at 280 Mt CO2e (around 0.6% of total global emissions). Coal production, specifically thermal coal, is the largest driver of Glencore’s emissions. **Coal accounts for ~90% of Glencore’s emissions.**

*Note: Chart shows scope 3 emissions on an operational basis, in line with Glencore’s 2021 Climate Change Report. Source: Glencore 2021 Climate Change Report, Glencore 2021 Annual Report*
Carbon budget: The remaining global carbon budget to stay on course for 1.5°C warming is around ~380 GtCO2. Currently, global emissions are around 40 Gt annually, which means the global carbon budget could be exhausted in less than a decade if business continues as usual. **This is why it is important for companies to reduce cumulative carbon emissions when transitioning**, which means reducing absolute emissions now.

Source: IPCC, CarbonBrief
Forecast coal emissions & Paris-alignment: Glencore’s production profile is driven by: a current approach to operate mines to end of life; pursuit of thermal mine extensions (Glendell and Hunter Valley Operations, NSW, Australia); potential plans for a greenfield coal to hydrogen development (Wandoan Coal project, Qld, Australia). Forecast emissions for Glencore are expected to remain broadly flat to 2033 (263 Mt in 2022, to 266 Mt in 2033). This is in contrast to the IEA Net Zero Emissions global coal emissions pathway, which falls by 50% from 2021-2030, and 74% from 2021-2035.

Glencore’s forecasted emissions from coal production do not appear to be Paris-aligned from a 2021 baseline.

Source: Glencore 2021 Resources and Reserves report, IEA World Energy Outlook 2022
Calculating coal emissions using a 2019 baseline: By choosing a 2019 baseline, including rebasing for the Cerrejon acquisition, Glencore can maintain broadly flat levels of production over the next decade, whilst still achieving a nominal reduction in emissions on the baseline, thereby allowing it to achieve its 2035 target.

Source: Glencore 2021 Resources and Reserves report, IEA World Energy Outlook 2022
Most importantly, Glencore is not using a coal pathway for setting Paris aligned targets. Considering ~90% of Glencore’s emissions are from coal, the company’s 2035 emissions reduction target appears to be misaligned with Paris and the International Energy Agency Net Zero Emissions (IEA NZE) 2022 coal pathway. Glencore has a target of 50% emissions reduction by 2035, compared to the IEA NZE coal emission pathway of 73%.

Table: Glencore targets vs IEA NZE (% change on 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Glencore Target Reduction</th>
<th>IEA NZE Coal Emissions Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2026</td>
<td>-15%</td>
<td>-30%</td>
</tr>
<tr>
<td>2035</td>
<td>-50%</td>
<td>-73%</td>
</tr>
</tbody>
</table>

Source: Glencore 2021 Climate Change Report, IEA World Energy Outlook 2022
The updated 2023 benchmark data by CA100+ for Glencore finds Glencore’s medium and long term targets are not aligned with the goal of limiting global warming to 1.5°C.

Reference: Climate Action 100+ Net-Zero Company Benchmark [https://www.climateaction100.org/company/glencore-plc/]
Glencore’s emissions footprint and 2035 target - key takeaways

- The 2022 IEA Net Zero Emissions global coal emissions pathway falls by 50% from 2021-2030, and 74% from 2021-2035. In contrast, Glencore’s forecast emissions are expected to remain broadly flat from 2021 to 2033.

- Based on current disclosures and its stated strategy, Glencore’s forecast emissions do not appear to be Paris-aligned.

- There are three key drivers of the Glencore forecast production profile to 2035:
  - a current approach to operate mines to end of life;
  - continuing to pursue brownfield coal mine extensions (Hunter Valley Operations, Glendell);
  - potential plans for a thermal coal related project at the approved Wandoan greenfield mine.

- The latest CA100+ benchmark assessment for Glencore rates its medium-term and long-term targets as not aligned with the goal of limited warming to 1.5°C.
Is Glencore’s forecasted coal production to 2050 aligned with the IEA NZE Coal Pathway?
Cumulative coal production: Glencore’s December 2022 decision to withdraw plans for the Valeria mine made a significant positive impact towards the company achieving Paris-alignment. However, if Wandoan, Glendell and Hunter Valley extensions proceed, it is difficult to see how Glencore will align with the IEA NZE pathway.

Source: Glencore 2021 Resources and Reserves report, IEA World Energy Outlook 2022
WANDOAN UPDATE - In its 2022 Climate Report, Glencore said it is not planning to develop the Wandoan coal resource as a traditional coal mine. Instead, it is investigating a coal to hydrogen project, at 4Mtpa. Even if production is limited to 4Mtpa, Glencore is not aligning with the IEA NZE coal aligned pathway.
Because the global carbon budget - i.e. the amount of CO2 left to emit if we want to have a 50% chance of limiting global warming to 1.5°C - is dwindling, it is the *cumulative* impact of a company’s emissions that is more important than when, and if, they reach net-zero.

Despite the benefits of selecting 2019 as the base year, *Glencore’s annual production from 2026 is consistently above the IEA NZE coal aligned pathway.*

From 2019-2050, Glencore’s cumulative coal production is between 237-527 Mt above the IEA NZE coal aligned pathway. Applying the current Australian national account factors, the midpoint equates to around 2% of current global annual emissions.

The withdrawal from Valeria was a positive step, but if the Glendell expansion (88 Mt), Hunter Valley expansion (206Mt) and Wandoan at 4/22Mtpa (116/558 Mt) all proceed, it is difficult to see how Glencore could align with the IEA NZE coal pathway.
Wandoan expansion & carbon capture
Uncertainty over Wandoan: If developed, the Wandoan project represents a significant expansion in coal production for Glencore. The mine is fully legally approved to produce on average 22 Mt of coal per year at capacity. The Climate Report 2022 states: “We are investigating the potential to produce blue hydrogen and ammonia through utilising a relatively small portion of the Wandoan coal resource (up to 4 million tonnes per annum) as feedstock. We do not plan to develop the Wandoan coal resource as a traditional coal mine for the purpose of servicing traditional coal markets.” However, capex, production, return on investment and total emissions remains unclear.

Table: Wandoan mine overview

<table>
<thead>
<tr>
<th>Detail</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production capacity (Mtpa)</td>
<td>22 (GLEN now says it may utilise a relatively small portion of the Wandoan coal resource - 4Mtpa)</td>
</tr>
<tr>
<td>% 2021 production</td>
<td>21%</td>
</tr>
<tr>
<td>Location/Type</td>
<td>QLD - thermal</td>
</tr>
<tr>
<td>Ownership</td>
<td>87.5% interest</td>
</tr>
<tr>
<td>Operating timeframe</td>
<td>2032 - 2062</td>
</tr>
<tr>
<td>Estimated costs</td>
<td>Reported estimates ~US$5 billion - uncertain</td>
</tr>
<tr>
<td>Customers</td>
<td>Export - Japan key market</td>
</tr>
</tbody>
</table>

Sources: Glencore resources and reserves report 2021 - Valeria customers J-Power, Japan Coal Development - Wandoan customers 12.5% owned by Sumitomo Corporation - Wandoan US$5 billion
**Carbon capture and storage (CCS):** Glencore is studying the potential to reduce emissions associated with Wandoan coal by using CCS to sequester emissions.

Glencore is undertaking two CCS projects related to Wandoan:

1. **Glencore Surat Hydrogen Project**
   - In which hydrogen is produced through coal gasification and coupled with CCS.

2. **CTSCo Project**
   - Currently proposed as a pilot - if approved, CO2 would be captured from a coal-fired power station in Queensland.
   - CO2 would be stored deep underground, and may also be utilised for **enhanced oil recovery** in the Moonie oil field.
   - It is envisaged that the CTSCo EPQ10 carbon storage site could eventually store CO2 from the Glencore Surat Hydrogen Project.

Source: Glencore, see Appendix slide 41 for Glencore’s December 2022 Investor Day Presentation
1. Glencore Surat Hydrogen Project: Hydrogen made from coal gasification is one of the most intensive fuel sources in the market. Even if you couple this with 90% efficient CCS (which has not been proven to scale), this method would still produce roughly equivalent emissions to natural gas, another fossil fuel. **The emission intensity of coal to hydrogen (and gas-to-hydrogen) with CCS is higher than the CertifHy threshold, the low-carbon hydrogen threshold proposed by the European Commission.**

2. CTSCo Project - potential future storage site:

- Currently proposed as a pilot, Glencore intends to capture CO2 from the Millmerran coal-fired power station in Queensland.
- CO2 will be transported hundreds of kilometres to a CO2 storage facility - EPQ10.
- This CO2 may be utilised by Bridgeport Energy for the Moonie Oil Field CO2 EOR Project.*
- In December 2022, Glencore promoted the CTSCo EPQ10 carbon storage site as a possibility to eventually store CO2 from the Glencore Surat Wandoan Coal to Hydrogen Project.

WANDOAN UPDATE - Carbon Capture: Even at a potentially reduced capacity, emissions from Wandoan are still **almost three times** the largest currently operating CCUS project related to coal.

Source: [https://iea.blob.core.windows.net/assets/4192696b-6518-4cfc-bb34-acc9312bf4b2/CoalinNetZeroTransitions.pdf](https://iea.blob.core.windows.net/assets/4192696b-6518-4cfc-bb34-acc9312bf4b2/CoalinNetZeroTransitions.pdf)
Carbon Capture: This graph covers the cost-aspect of CCS, showing the levelized cost of electricity (LCOE) for countries currently employing coal-based CCS. It shows the inclusion of CCS greatly increases the LCOE of coal for countries such as India, China, Japan and the US. Australia has the most expensive coal compared to these countries and limited CCS experience.

Chart: Current LCOE range of coal & coal + CCUS by country ($/MWh) 2H 2022
**Carbon Capture:** The Moonie Enhanced Oil Recovery involves injecting CO2 into an oil reserve, thereby increasing the amount of oil that may be extracted. As a consequence, this project will lead to five times more emissions produced, than sequestered.

### Table: Moonie EOR overview

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project schedule</strong></td>
<td>8 years</td>
</tr>
<tr>
<td><strong>Cumulative CO2 injection</strong></td>
<td>960,000 tonnes</td>
</tr>
<tr>
<td><strong>Cumulative CO2 sequestration</strong></td>
<td>768,000 tonnes</td>
</tr>
<tr>
<td><strong>Oil recovered</strong>*</td>
<td>1.73 MM$m^3$ = 1.3 Mt (@741 kg/m$^3$)</td>
</tr>
<tr>
<td><strong>Estimated emissions from recovered crude</strong></td>
<td>4.06 Mt CO2e - &gt;5x more than sequestered</td>
</tr>
</tbody>
</table>

*Mass of oil recovered estimated by multiplying injected volume by the relative substance density of Moonie crude oil.

Source: [Moonie Oil Field CO2 EOR Project Initial Injection Plan 2021](#)
Wandoan expansion and carbon capture - key takeaways

- **Surat Hydrogen Project:**
  - Hydrogen made from coal gasification is one of the most emissions intensive fuel sources.
  - CCS has not been proven on an industrial scale, and coupled with coal-based hydrogen will still produce similar amounts of greenhouse gas emissions as unabated fossil fuels.

- **CTSCo Project:**
  - CCS is costly, and will materially increase the LCOE of electricity generated from coal.
  - The Moonie Fields EOR project will result in more CO2 emitted than sequestered.
Glencore’s climate lobbying
Glencore’s lobbying and advocacy are not Paris-aligned: Glencore’s direct and indirect efforts, through industry associations, to shape policy and regulatory decisions are misaligned with the temperature goals of the Paris Agreement. This is despite Glencore’s formal support for the goals of the Paris Agreement.

- InfluenceMap (IM) rates **Glencore’s climate policy engagement “D–”**, meaning it is **misaligned with the Paris Agreement**. Its engagements both directly and indirectly through industry associations are misaligned.

- Glencore has **insufficient mechanisms in place to identify and correct** misalignment:
  - Although formally committed to the Paris Agreement, Glencore continues to take policy positions that are not aligned with the Agreement’s goals. Glencore has advocated for coal and gas; **opposed regulatory and carbon pricing changes in the EU and and South Africa** on cost grounds; and sought to weaken reforms to Australia’s climate policy, the **Safeguard Mechanism**.
  
  - Glencore’s most recent Industry Association Review (March 2023) showed **no improvement** on previous years; it received the low score of 36/100 from IM, as it has since 2020. IM’s methodology is aligned with the investment community-developed **Global Standard on Responsible Climate Lobbying**.
Lobbying and advocacy *lags* behind best practice and industry standards for Paris aligned lobbying.

- **Glencore** failed to identify association misalignment with the Paris Agreement in at least **seven** instances:

<table>
<thead>
<tr>
<th>Industry association</th>
<th>InfluenceMap rating <em>(D or below is misaligned with Paris)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Minerals Council</td>
<td>E−</td>
</tr>
<tr>
<td>Queensland Resources Council</td>
<td>E</td>
</tr>
<tr>
<td>Minerals Council of Australia</td>
<td>E+</td>
</tr>
<tr>
<td>Chamber of Minerals and Energy WA</td>
<td>D−</td>
</tr>
<tr>
<td>Eurometaux</td>
<td>D</td>
</tr>
<tr>
<td>Confindustria</td>
<td>D</td>
</tr>
<tr>
<td>German Chemical Industry Assoc.</td>
<td>D</td>
</tr>
</tbody>
</table>

*Glencore lags behind industry standards.* For instance, Rio Tinto, BHP and Origin have quit or suspended their relationships with QRC due to misalignment with the Paris Agreement. Shell found it to be misaligned.

- **Whereas numerous industry players welcomed reforms** to Australia’s key climate policy, the *Safeguard Mechanism*, that better aligns the country with the Paris Agreement, **Glencore opposed them**, lobbying in Australia in the final week of policy negotiations to warn reforms would harm Australia’s investment attractiveness. This further signals *misalignment* with the Paris Agreement.
Glencore has been lobbying for the expansion of its Glendell mine, despite the application already being rejected by the Independent Planning Commission. Glencore’s plans to push ahead with Glendell were not communicated to shareholders.

- In 2022, the NSW Independent Planning Commission rejected Glencore’s proposed Glendell coal mine expansion due to “significant, irreversible and unjustified” impacts on heritage, relating to colonial and Indigenous history.
- In 2023, Glencore lobbied against the heritage nomination of the site, in pursuit of the mine expansion, attracting significant negative attention in media and local community.

**Glencore**

Climate report 2022 - published March 23, 2023

During 2022, there were developments regarding our Glendell, Valeria and Sukunka projects:

- the New South Wales Independent Planning Commission (IPC) rejected our existing application to extend mining at our existing Glendell open cut operations;

**The Sydney Morning Herald**

March 13, 2023 – 5:00am

Glencore said it remained committed to the mine expansion, and said there was no way it could do this without shifting the homestead and its outbuildings, which date from 1832.

Glencore told the *Herald* it will fight the proposed listing, saying the heritage council “does not present a balanced or factual assessment of the significance of the homestead and its surrounding landscape.”
Glencore’s capex
UPDATE: Glencore has recently announced that it plans to allocate $1.3bn per year between 2023-25 to coal and oil. The 2021 Climate Report stated there would be no expansionary capex for energy products - yet there was no such commitment in the 2022 Climate Report. No guidance has been provided for capex beyond 2025. More transparency on Paris alignment is needed.

Chart: Glencore energy products capex (Industrials segment, $US million)

Source: Glencore annual reports, Glencore Investor Update 2022
Proposed Teck Resources merger
The reaction to Glencore’s merger/demerger bid highlights how thermal coal is the biggest risk to Glencore’s mergers and acquisitions (M&A) opportunities and ambitions.

**Thermal coal exposure continues to be a material risk to Glencore and its ambition to drive long term shareholder value.** This is summed up in comments made by Teck, rejecting the proposal from Glencore:

“Significant execution risks and uncertainty ... No clear plan by Glencore to exit coal; Teck shareholders could remain exposed to thermal coal for an uncertain period of time.” **Statement from Teck Resources, on behalf of the Board and independent Special Committee, 13th April 2023.**

“The spun-out business envisioned by Glencore would be a majority thermal coal business of an unprecedented scale. Thermal coal mines are contrary to the global decarbonization agenda. The Glencore proposal would force Teck shareholders to hold massive thermal coal exposure, which would be value destructive, drive away current and future investors who cannot hold thermal coal assets, and result in Teck’s world-class steelmaking coal business trading at a discount.” **Statement from Teck Resources, on behalf of the Board and independent Special Committee, 3rd April 2023**

“The Glencore proposal would expose Teck shareholders to a large thermal coal business, an oil trading business and significant jurisdictional risk, all of which would negatively impact the value potential of Teck’s business, is contrary to our ESG commitments and would transfer significant value to Glencore at the expense of Teck shareholders.” **Jonathan Price, CEO, Teck, 3rd April 2023**

**References:**
Teck proposed merger: CoalCo merger still strongly Glencore and thermal coal biased, with no proposed changes to the Climate Plan. The deal does not improve the climate outcome.

<table>
<thead>
<tr>
<th>Production 2022 (Mt)</th>
<th>Thermal</th>
<th>Coking</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glencore</td>
<td>97</td>
<td>13</td>
<td>110</td>
<td>84%</td>
</tr>
<tr>
<td>Teck</td>
<td>-</td>
<td>21.5</td>
<td>21.5</td>
<td>16%</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>34.5</td>
<td>131.5</td>
<td>100%</td>
</tr>
<tr>
<td>% of Total</td>
<td>74%</td>
<td>26%</td>
<td>100%</td>
<td>-</td>
</tr>
</tbody>
</table>
Proposed Teck merger - key takeaways

- Thermal coal exposure continues to be a material risk to Glencore and its ambition to drive long term shareholder value.

- Glencore has not satisfied its current or potential future shareholders that its coal production is Paris-aligned. There is a persistent lack of trust in Glencore’s comments that it is running down the coal business in line with Net Zero.

- Investors must have the ability to evaluate exposure to financially material risks in the energy transition. The Teck proposals have not changed the thermal coal pathway or the need for these disclosures.

- Whatever happens next for Glencore’s coal business, voting for the thermal coal resolution is one way investors can signal the need for clear and reputable information to demonstrate genuine alignment of forward thermal coal production with the goals of the Paris Agreement.
The co-filed shareholder resolution on thermal coal
In our view, the Teck proposal makes the thermal coal shareholder resolution even more supportable and timely.

Enhanced disclosure is a priority, particularly considering thermal coal is overwhelmingly responsible for Glencore’s disclosed emissions.

This resolution asks Glencore to outline:

- how its forward thermal coal production is Paris aligned;
- how its CAPEX for thermal coal is Paris aligned;
- if its thermal coal production aligns with the IEA NZE timelines for the phase out of unabated thermal coal for electricity.

In light of Glencore’s aspirations to spin out the coal business – having on the record disclosure of the alignment of the coal business with the Paris Agreement is more crucial than ever.

2023 Shareholder Resolution to Glencore PLC on thermal coal production

Ordinary Resolution - Projected thermal coal production

That the Climate Action Transition Plan to be presented for a vote (by whatever name called) at the 2024 Glencore plc Annual General Meeting includes:

a. Disclosure of how the Company’s projected thermal coal production aligns with the Paris Agreement’s objective to pursue efforts to limit the global temperature increase to 1.5°C;

b. Details of how the Company’s capital expenditure allocated to thermal coal production will align with the disclosure in a. above; and

c. The extent of any inconsistency between the disclosure in a. above with the IEA Net Zero Scenario timelines for the phase out of unabated thermal coal for electricity generation in (i) advanced economies, and (ii) developing economies.

FOR: Co-filed thermal coal disclosure resolution

AGAINST: Glencore’s 2022 Climate Report

AGAINST: Directors, due to governance and thermal coal concerns, in line with each investors’ climate voting policy

NB: This research is based on public information and company disclosures available on 18 April 2023.

Evidence suggests shareholders would benefit from enhanced disclosure from Glencore to step out how thermal coal production aligns with the Paris Agreement going forward.

ACCR’s view has only been strengthened by the Teck merger proposal and calls for coal spin out.
Appendix
The slide shows Glencore reports 280 Mt of emissions, of which 254 are scope 3.

Total Cat.11 emissions are 237 Mt. Cat.11 from thermal/coking is estimated to be 234 Mt, with the remainder attributed to oil (included in the 15 Mt of ‘Scope 3 other’).

The total scope 1, 2 and 3 emissions from coal equate to 245 Mt.

Glencore reports Category 11 emissions on both an operational basis (237 Mt) and an equity basis (258 Mt). These are two different ways of calculating category 11 emissions. ACCR has used Category 11 on an operational basis as that is what is reported in Glencore’s Climate Change report, and what Glencore will likely use going forward to track its targets.

Emissions from ‘marketing oil/coal (pink bars on slide 5) are estimated as the emissions from selected marketing sales of coal and oil reported by Glencore. This is calculated by multiplying sales volumes of energy products by industry standard emissions factors.

It is unclear whether there is any crossover between Glencore’s reported Industrials production and marketing sales. However, reconciliation of revenues using realised commodity prices, coupled with immaterial intersegment eliminations within ‘energy product’ revenues, suggests that any possible crossover is marginal at best.
Paris agreement consistent (1.5C) scenarios: coal decline is rapid

Baseline: '19/’20

<table>
<thead>
<tr>
<th>Decline in coal use by 2030 (%)</th>
<th>IEA WEO 2022 (NZE)</th>
<th>IPCC AR6 median</th>
<th>IPCC AR6 filtered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030</td>
<td>-49</td>
<td>-75 [-65–80]</td>
<td>-68</td>
</tr>
<tr>
<td>2035</td>
<td>-73</td>
<td></td>
<td>-80</td>
</tr>
<tr>
<td>IEA WEO 2022 (APS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td>-20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- IEA, IPCC: system models
  - IEA NZE: updated in 2022
  - IPCC: pre-Covid
- IPCC database include scenarios with assumptions using speculative ranges
- Coal use needs to decline fast
- Existing NDCs show 20% decline

Source: IEA, IPCC, ACCR modeling
### Japan’s coal demand

<table>
<thead>
<tr>
<th>Energy mix for electricity grid (%)</th>
<th>2019</th>
<th>2030 (5th SEP)</th>
<th>2030 (6th SEP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>32</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>Gas/LNG</td>
<td>37</td>
<td>27</td>
<td>20</td>
</tr>
<tr>
<td>Nuclear</td>
<td>6</td>
<td>20-22</td>
<td>20-22</td>
</tr>
<tr>
<td>Renewables (Total)</td>
<td>18</td>
<td>22-24</td>
<td>36-38</td>
</tr>
<tr>
<td>Solar</td>
<td>6.7</td>
<td>7</td>
<td>14-16</td>
</tr>
<tr>
<td>Wind</td>
<td>0.7</td>
<td>1.7</td>
<td>5</td>
</tr>
</tbody>
</table>

**Japan’s Strategic Energy Plan (SEP)**

- 2021 much more confident and ambitious in renewable generation
- Emission reduction by 2030: -46%, ambition to reach 50% (2013 base)
- Strong emphasis on self sufficiency

Source: Japan Strategic Energy Plan 2021
## India's 2030 NDC ambitions

- 45% reduction on 2005 emission intensity
- 50% from non-fossil electricity generation
- 500GW non-fossil generation capacity
- Not aligned with Paris Agreement

### Energy mix for electricity grid (GW)

<table>
<thead>
<tr>
<th>Energy mix for electricity grid (GW)</th>
<th>2022</th>
<th>2026-27</th>
<th>2031-2032</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>203</td>
<td>240</td>
<td>249</td>
</tr>
<tr>
<td>Gas/LNG</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Nuclear</td>
<td>7</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>Solar</td>
<td>63</td>
<td>186</td>
<td>334</td>
</tr>
<tr>
<td>Wind</td>
<td>42</td>
<td>81</td>
<td>134</td>
</tr>
<tr>
<td>Hydro</td>
<td>52</td>
<td>57</td>
<td>68</td>
</tr>
</tbody>
</table>

### Coal imports (Mtpa)

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th>2026-27</th>
<th>2031-2032</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal imports (Mtpa)</td>
<td>27</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

### Source

- CEA (2022), UNFCCC (2022), IRENA (2022)
- CEA National 2030 electricity plan (2022)
- India is tracking behind on solar and wind installations.
- Coal imports remain stable at 40Mtpa
Glencore’s Surat Basin Carbon Capture and Storage project (CTSCo) in QLD

Map: Location of Millmerran power station and test injection side

Millmerran Power station (Intergen, 850MW)

- Coal demand: 3.6 Mt/y
  (currently Intergen Commodore mine)
- Annual emissions: 5.1 MtCO2/y
- Capture technology: Post combustion plant
- CO2 transportation & injection:
  - 260 km by truck from Millmerran to transport facility
  - 9 km via flowline to injection site
  - Injected 2.3 km underground

Source: Glencore CTSCo, OpenNEM, Queensland Government
Glencore’s Surat Basin Carbon Capture and Storage project (CTSCo) in QLD

Queensland Energy and jobs plan:
- By 2035: No regular reliance on coal fired power generation
- By 2037: Coal phased out of the electricity grid

AEMO ISP 2022:
- <2C scenario: Millmerran phased out by 2042
- 1.5C scenario: Millmerran phased out by 2030

Source: Queensland government, AEMO 2022 ISP
Cerrejón Coal Mine Update: Environmental and human rights impacts continue to lead to blockade of roads, the rail line and other Cerrejón facilities.

- A report by a delegation of parliamentarians to Colombia, who visited the mine in 2022, notes that as a result of Cerrejón's mining, roughly 40% of the water courses belonging to the critical Rancheria River have been depleted or lost.

- The Catholic Agency for Overseas Development describes the lack of water in La Guajira, exacerbated by the Cerrejón mine, as an 'existential threat' to local people.

- An international delegation of parliamentarians, who visited and spoke with affected communities, report that, “the constant expansion of the mine over almost five decades has led to severe environmental degradation with serious human rights impacts.”

- International legal disputes over these issues are ongoing, and as recently as April 2023 the mine's operations were affected by local blockades.

- Reuters reports that, “Blockades of roads, the rail line and other Cerrejón facilities are common and regularly result in losses for the company.”

References:
Teck merger: overview as at 18 April 2023

- **Deal structure:**
  - Initial proposal was an all-share merger of Glencore with Teck and a subsequent demerger of the coal business, Teck’s coal business and Glencore ferroalloys business.
  - 76/24 Glencore/Teck if successful
  - Revised proposal, offered a cash consideration alternative in lieu of shares in the proposed CoalCo.
  - MetalCo (to be named Glenteck) listed in London, CoalCo listed in NY
  - ‘Two truly standalone companies’

- **Business proposition:**
  - Coal business will combine Glencore production (97 thermal / 13 coking Mtpa) with Teck coking coal (21.5 Mtpa) - total 131.4 Mtpa.
  - CoalCo pitched as 100% final cash flow payout back to shareholders. Zero net debt business

- **Glencore’s comments on climate strategy for Teck:**
  - “[W]e don’t ignore climate, and we fully intend for the coal company to respect the net zero climate strategy Teck has announced in the spec of its coking coal business and to also continue to oversee the responsible decline of the thermal coal business currently in Glencore’s portfolio.”
Questions for Glencore on the proposed CoalCo spin off

Questions for the company:

1. Is expansionary capex excluded from the cash flow definition?
2. Will the balance sheet maintain net-zero debt or is the plan to increase net debt levels over time?
3. Will CoalCo pursue any greenfield developments? If so, how is this consistent with a 100% cash flow payout? (i.e. Glencore’s approved Wandoan development has estimated capex of up to US$5 billion, new coal to hydrogen proposal costs highly uncertain)
4. Beyond the merger, Glencore’s current coal portfolio can get closer to Paris alignment if they further abandon brownfield extensions. Is this a current consideration for the CoalCo?
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