

Adani's Carmichael Coal Mine and Rail Project: factsheet

Overview

Indian conglomerate, the Adani Group, propose to build an integrated coal mine, rail and port project in Queensland. Adani's proposed Carmichael coal mine in Queensland's Galilee Basin would be the biggest coal mine ever to be built in Australia and would be among the biggest in the world. The company states that it intends to mainly ship the coal to India for use in power generation. Adani owns very large coal power stations and transmission infrastructure in India and, to some extent, the company is planning to own all aspects of the power infrastructure from "pit to plug".

The Coal Mine

- The Carmichael Coal Mine is proposed for the Galilee Basin. The proposal includes six open cut pits and five underground mines over an area 30km long.¹
- Adani have initial approval to mine up to 60 million tonnes per annum (Mtpa) of coal from the site for 30 years.
- The size of the coal resource on site is vast (over 10 billion tonnes).²
- Adani have plans to operate the mine for at least 60 years, mining an estimated 2.3 billion tonnes of product coal in the process.

The Carmichael Rail Project

- The Carmichael mine is remote. To transport the coal to its port on the coast, Adani propose to build the North Galilee Basin Rail Project.
- This 388 km long standard gauge, greenfield rail line will have a capacity of up to 100Mtpa - enough for the Carmichael mine and more. The rail line will connect the mine to the Port of Abbot Point, near Bowen, Queensland.

The Port - Abbot Point

- Adani already own and operate the existing 50Mtpa coal export terminal at Abbot Point (Terminal 1). This is currently used by multiple existing coal mines in the north of the Bowen Basin. Adani plan to use at least some of the capacity of this terminal to export coal from Carmichael – at least initially.
- In addition, Adani have approval for a new coal terminal, Terminal 0, at Abbot Point. This would have a capacity of up to 70Mtpa and would be required if the Carmichael mine were to operate at peak capacity. Whether the development is required if the Carmichael mine were to proceed and operate at a reduced capacity is unclear and largely depends on whether Take or Pay contracts with existing users of Terminal 1 are renewed.
- Building Terminal 0 would increase Adani's port's coal export capacity to 120Mtpa, all of which would be shipped through the Great Barrier Reef Marine Park and World Heritage Area.

The Issues

Galilee Basin: why it matters.

- Located in central Queensland, this vast basin of thermal coal has so far remained unexploited (largely due to its remoteness).
- It contains an estimated 29 billion tonnes of coal.³
- For the sake of our climate, it is imperative that all of this coal remains in the ground.⁴

- If the Carmichael mine were built, it would enable further mines in the Galilee Basin, potentially resulting in hundreds of millions of tonnes per annum of additional coal mining capacity. In total, at least 9 mines have been proposed for the Galilee Basin with a combined production capacity of over 300 million tonnes per annum.

Impacts of the mine

- The proposed Carmichael mine will be vast, bigger than any coal mine ever built in Australia and amongst **the biggest in the world**.
- In addition to its climate significance, the mine will have other very significant environmental impacts.

Habitat

- The mine would impact 28,000 hectares of land,⁵ an area more than five times that of Sydney Harbour.⁶
- Of this, 20,200 ha would be cleared,⁷ equivalent to over 28,000 soccer fields or 200,000 quarter-acre blocks. Most of the remaining area would be impacted by subsidence from the proposed underground mines.
- Over half of the land that would be cleared is mature woodland and bushland (remnant vegetation). This is important habitat for many animals including threatened species such as koalas and echidnas and endangered birds.⁸
- Critical habitat for the largest (of just two) significant populations of the endangered Southern Black-Throated Finch would be destroyed.⁹
- Habitat for other endangered species such as the Ornamental Snake and the Yakka skink as well as migratory birds would be destroyed.¹⁰

Water

- The mine will suck up to 9.5 billion litres of water a year from groundwater sources.¹¹
- Billions of litres of precious local groundwater, including some from the Great Artesian Basin, will be extracted over the life of the mine.
- The water table is expected to drop by up to 300m within the mine site, and between 20m and 50m further from the mine. Even ten kilometres away, water tables are expected to drop by over one metre.¹²
- Two groups of rare natural springs are found close to the mine site. The Doongmabulla Springs¹³ would suffer irreversible impacts due to the loss of water from underground aquifers and its nationally important¹⁴ flora and fauna will perish. The Mellaluka Springs are expected to dry up completely.
- When the mine closes, Adani don't propose to fill in the pits. Instead, they plan to leave voids up to 200 metres deep that will act as permanent sinks for groundwater as Adani don't plan to fill the pits to above the local aquifers.¹⁵ In other words, groundwater will permanently flow into the pits and evaporate, acting as drain of this vital resource forever.
- In addition, the mine will require up to 12 billion litres of water a year from off-site sources.¹⁶ Adani plan to take this from nearby rivers through flood water harvesting depriving downstream users and the environment of these flows.

Impacts of the rail

- The North Galilee Basin Railway would use trains 4km long, each carrying around 25,000 tonnes of coal in 240 wagons.¹⁷
- Property owners along the line can expect to see nine of these fully loaded monster trains a day, plus the same number of empty trains returning from port.¹⁸
- If other Galilee Basin mines also use the railway this number could increase to 14 trains heading each way a day.
- This rail route would cut through over 60 properties. Landholders could be impacted by coal dust from the trains, difficulties moving their cattle across the line, and in particular, as the route of the railway is highly flood prone,¹⁹ the increased risk of flooding due to flood water flows being impeded.

Impacts of the port

The area surrounding the Abbot Point coal terminal is home to dugongs, endangered turtles, snubfin dolphins and the nationally significant Caley Valley Wetlands.

The traditional Aboriginal owners of Abbot Point are the Juru people: the dunes surrounding Abbot Point contain shell middens and gravesites of their ancestors.²⁰

If Adani were to go ahead with the Terminal 0 expansion of Abbot Point, the project:

- Would result in Abbot Point becoming one of the biggest coal export ports in the world.
- Would require dredging of previously undisturbed seabed within the Great Barrier Reef World Heritage Area resulting in water contamination and the destruction of vast areas of seagrass meadows - essential habitat for dugong.
- Would disturb Green and Flatback turtles which nest on the beach right next to the Terminal 0 site.
- Risks polluting the Caley Valley wetlands with coal dust and contaminated waste water. This wetland is home to:
 - 26 shorebird species, including 16 Migratory shorebird species;
 - 16 other Migratory bird species;
 - five threatened bird species and four near-threatened bird species;
 - total waterbird abundance of over 24,000 waterbirds;²¹
- Could result in over 500 extra coal ships travelling through the Great Barrier Reef World Heritage Area each year with all the associated risks of groundings and oil spills in the Reef.²²
- Significantly increase the risk of boat strike injury and death to the humpback whales and calves known to use the Abbot Point area.

Climate Impacts

There is essentially no carbon budget remaining for new sources of fossil fuels. At a time when we need to urgently reduce emissions of carbon dioxide, this mine takes us on the completely wrong trajectory.

The rate of coal burning must be rapidly reduced to zero and given existing, excessive coal mine capacity, constructing the Carmichael mine is totally incompatible with strong action on climate change.

Adani plan to mine 2.3 billion tonnes of coal over the mine's 60 year of operation. Burning this coal would result in the emission of 4.6 billion tonnes of CO₂.²³

The Carmichael mine could produce up to **60 million tonnes of thermal coal** for export per annum. This:

- would double Queensland's thermal coal exports,
- increase Australia's thermal coal exports by 30%,
- make the mine (if it were a country) the fourth largest coal supplier to the Asian market (ahead of South Africa).
- Burning the coal would release up to 120 million tonnes of CO₂ per annum.²⁴ This is:
 - more than all the black coal power stations in Australia (approx. 100Mtpa CO₂),²⁵
 - 80% of the emissions from burning coal for power generation in Australia,²⁶
 - equivalent to eight times the annual emissions from Hazelwood,²⁷
 - equivalent to Australia's planned GHG emissions reduction efforts between 2020 and 2030,²⁸
 - greater than the annual emissions from fossil fuel combustion of over 100 individual countries including Uzbekistan, Czech Republic, Philippines, Belgium, Kuwait, Qatar, Chile, Colombia, Romania, Turkmenistan, Greece, Israel, Bangladesh, Austria, Nigeria, Oman, Belarus and Morocco.²⁹

The Great Barrier Reef is already living on borrowed time. The burning of this coal will contribute to the death of the Great Barrier Reef.

Scientists estimate that in less than twenty years, parts of the Great Barrier Reef will experience serious bleaching every second year, this will effectively kill them.³⁰

References

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- 2 Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 9
- 3 [Geoscience Australia \(2016\) Australian Energy Resource Assessment, coal](#)
- 4 At current global emission rates, the carbon budget for having a 66% chance of staying below 1.5oC of warming will be completely exhausted by 2020, therefore the rate of coal burning must be rapidly reduced to zero.
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- 23 Joint Expert Report to the Land Court of Queensland on “Climate Change – Emissions”, Taylor & Meinshausen Available from <http://envlaw.com.au/wp-content/uploads/carmichael14.pdf>
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- 25 Australian National Greenhouse Inventory. In the latest year (2014), black coal burning for electricity generation resulted in the emission of 92 million tonnes of CO₂. Data extracted from [AGEIS](#)
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- 29 [Australia’s Emissions Target in 2030 is 440–452 MtCO₂-e.](#)
- 29 [CO₂ Emissions from Fuel Combustion, IEA, 2016](#)
- 30 [CoECSS \(ARC Centre of Excellence for Climate System Science\) \(2016\) Extreme coral bleaching may be new normal by 2034](#)

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