

Cooked by Coal: The Global Significance of Australia's Galilee Basin

Green Institute, March 2015

Australia's Galilee Basin, long eyed by coal miners but as yet un-mined, presents a globally important choice. If mining goes ahead, the destruction of its carbon stocks will account for more than 5% of the world's carbon budget. If protected, it will be a turning point on the path to a clean energy future.

What and where

The Galilee Basin is a vast geological basin covering about 250,000 km² in central Queensland, west of Mackay. The Basin straddles the Great Dividing Range with rivers on its north-eastern margin flowing to the Coral Sea (Great Barrier Reef) and those in the west and south flowing inland to Lake Eyre. The Great Artesian Basin (GAB) underlies most of the Galilee Basin and beneath the GAB lie huge coal deposits laid down when Australia was part of Gondwanaland.

Coal megamines

Companies have so far identified 27,750 million tonnes of coal.¹ Seven mines are in varying stages of environmental assessment or approval, together with three railway alignments, two coal-fired power stations and two massive port expansions. Other mines are in earlier stages and companies are also exploring for coal seam gas.

Mine/Project	Company	Stage
Alpha – mine and rail	Hancock Coal PL (Gina Rinehart and Indian company GVK)	All State and Federal approvals given. After objections were heard in the Qld Land Court, conditional approval was given but is being appealed in the Qld Supreme Court by CCQA. Scheduled to be heard around mid-April 2015.
Kevin's Corner - mine	Hancock Coal PL (Gina Rinehart and GVK)	State and Federal approvals given. Objections in the Qld Land Court will be heard around May 2015. This mine adjoins the Alpha mine and will use the Alpha rail line.
Carmichael (Adani) – mine and rail	Adani Mining PL (Indian company)	Approved by Qld Coordinator General May 2014. Objections will be heard in the Qld Land Court in April 2015. Judicial review of federal EPBC decision (to exclude climate considerations) will be heard in August 2015.
North Galilee Basin Rail	Adani Mining PL	Approved by Qld Coordinator General August 2014
China Stone - mine	Macmines Austasia PL (Chinese owned)	EIS being prepared
Waratah Galilee Coal - mine	Waratah Coal Ltd (China First) (Clive Palmer)	EIS approved by Qld Coordinator General August 2013. No rail infrastructure approved at this stage
Galilee Basin Power Station	Galilee Power PL (subsidiary of Waratah Coal Ltd)	EIS being prepared
Galilee Coal Project (Northern Export Facility) - mine	Waratah Coal Ltd	Approved by Qld Coordinator General August 2013
South Galilee Coal Project - mine	Joint Venture of Alpha Coal Pty Ltd and AMCI (Alpha) PL	Approved by Qld Coordinator General December 2014

¹ Resources identified to JORC (Joint Ore Resources Committee) standard – the standard required by the ASX. This is a fraction of the likely size of deposits.

Issues

Infrastructure. Galilee Basin coal is destined for export. A large initial investment would be needed to build 500+ km of railways and greatly expand port capacity (Abbot Point near Bowen is the preferred location for most of the mines). If railways and ports are built, it will be very difficult to stop the entire Galilee Basin being opened for mining (as long as markets exist).

Campaigns. Most are focusing on the World Heritage listed Great Barrier Reef and port developments and to a lesser extent on the Galilee Basin itself. Bimblebox Nature Refuge (in the Galilee Basin) will be destroyed if mining proceeds and is the basis of a strong campaign. Divestment from fossil fuel companies and opposition to financing of new coal mines are fast-growing campaigns.

Timing. The Adani Carmichael mine is the one closest to commencement and if it stays on schedule would start mining in 2017; it is reportedly still to finalise financial support for the mine and rail infrastructure.

Global significance. Galilee Basin is a new coal province. If opened for mining it signals that climate change is not to be tackled seriously. If protected, it signals the beginning of the end of the coal era.

Impacts of mining the Galilee Basin

Climate. The lifetime emissions of the mines currently being assessed are, conservatively, 24.7 billion t CO₂. Over 30 years they are 14.2 billion t CO₂. These are respectively 5% and 2.9% of the 485 billion t CO₂ global emissions budget from 2010 to 2050 which would give the world an 80% chance of keeping global warming less than 2°C.² If all the 27.75 billion t coal identified to JORC standard were burned, it would account for 12% of the global CO₂ budget.

World Heritage. The Great Barrier Reef will be endangered by huge increases in coal shipping as well as accelerating climate change.

Indigenous Heritage. The Traditional Owners of the land are the Wangan and Jagalingou People who have claimed Native Title for the area.

Water. The mines are in the headwaters of the Burdekin River as well as lying above the GAB. Sourcing water to process coal is problematic as is the disposal of polluted mine water. Building mines and infrastructure will require creeks to be moved, aquifers to be de-watered, and threatens GAB recharge areas.

Biodiversity. The mines are in the Desert Uplands bioregion of which only 3.1% (215,000 ha) is protected. Mine construction and operation will cause 75,000 ha to be cleared and additional areas will suffer subsidence and other disturbance. Threatened species include Koala, Black-throated Finch, Squatter Pigeon etc. On the coast, railway and port expansion will severely impact the Kaili (or Caley) Valley wetlands.

Bimblebox Nature Refuge. [Bimblebox](#) is a private 8000 ha sanctuary with never-cleared native woodlands. Half will be destroyed completely by the Waratah Galilee (China First) mine. Subsidence, aquifer de-watering and other indirect effects threaten the remainder.

Social. About 6000 people live in the region around the proposed mines. The mine workforce will be primarily fly-in fly-out, not local, with consequent social and community impacts.

² Climate Change Authority *Caps and Targets Review*.

<http://climatechangeauthority.gov.au/sites/climatechangeauthority.gov.au/files/files/caps/13-030-CATRIP.pdf>

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Galilee Basin in Pictures

Images: Sonya Duus



More information

Map of the Galilee Basin and other coal deposits

https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=74097

Map of mines currently subject to EIS or with EIS approved

<http://www.dlg.qld.gov.au/assessments-and-approvals/coordinated-projects-map.html>

Why the Galilee Basin is worth worrying about

<http://theconversation.com/why-the-galilee-basin-is-worth-worrying-about-10959>

Fossil Fuel economics - Institute for Energy Economics and Financial Analysis

<http://ieefa.org>

Subsidies to the mining industry – The Australia Institute

<http://www.tai.org.au>

Greenpeace: Cooking the climate, wrecking the reef

<https://p3-admin.greenpeace.org/australia/Global/australia/images/2012/Climate/Galilee%20Report%284.2MB%29.pdf>