



The Carmichael Project

Lucas Dow – CEO Adani Mining
Major Projects Forum

8 November 2018

Today's Agenda

- Increasing global energy demand and the role for coal.
- Queensland's opportunity – the Galilee Basin.
- Delivering on Queensland's opportunity – The Carmichael Project.

We are 100% committed to delivering the Carmichael Project, providing benefits for all Queenslanders.

Increasing global energy demand and the role for coal

Myths vs Facts

Myth: Coal fired power generation is decreasing across the globe and is in structural decline.

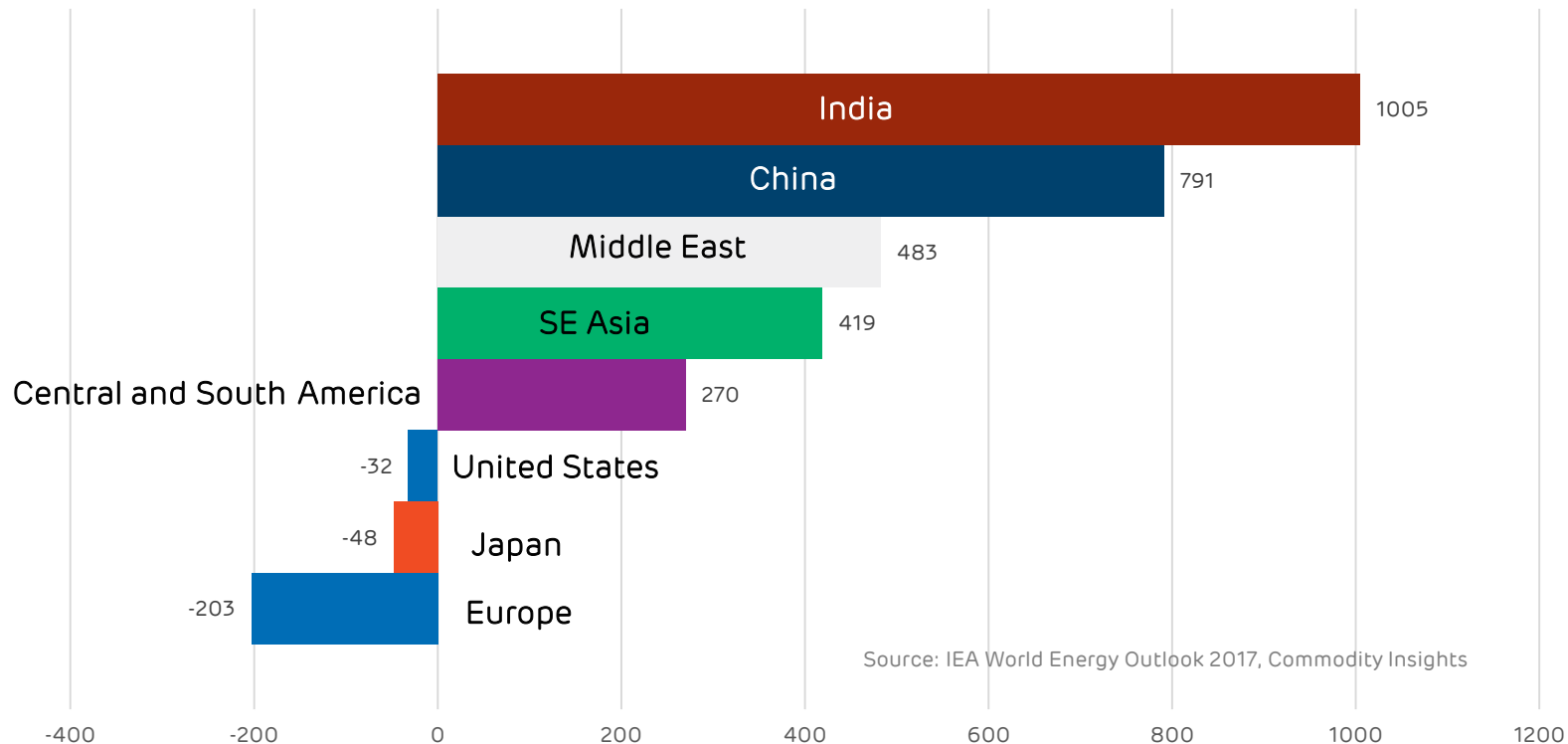
FACT: Global coal consumption rose by 1% in 2017, with India recording the fastest growth (4.8%).

To put things in perspective...

- World coal production increased by 3.2% driven by notable increases in both Chinese (3.6%) and US (6.9%) output; and
- Coal fired power generation continues to represent the largest source of global power generation capacity.

The world's energy demand is growing

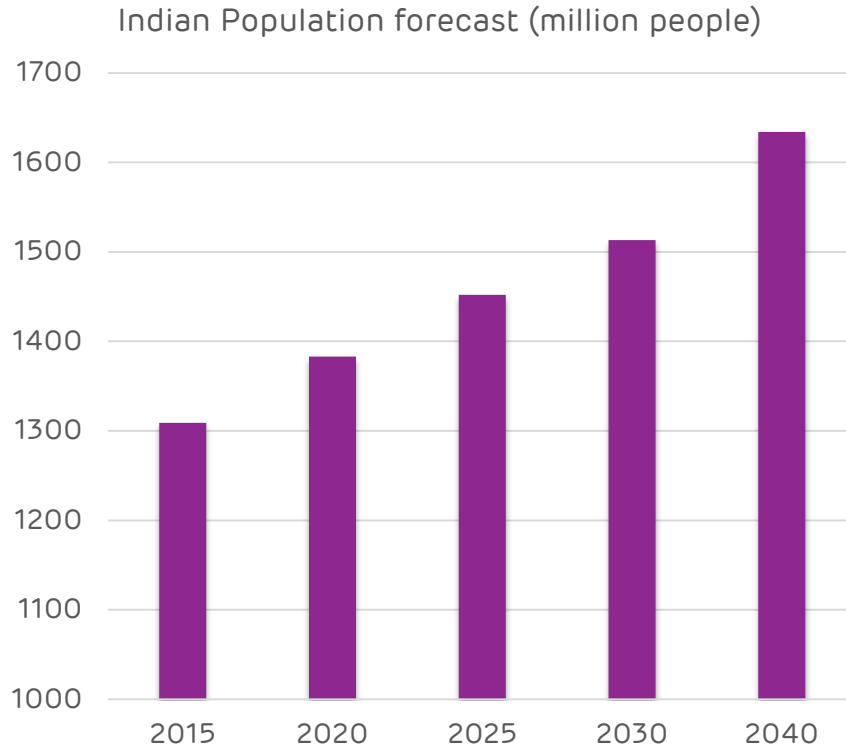
Change in primary energy demand, 2016 -2040 (Mtoe), IEA New Policies Scenario



Source: IEA World Energy Outlook 2017, Commodity Insights

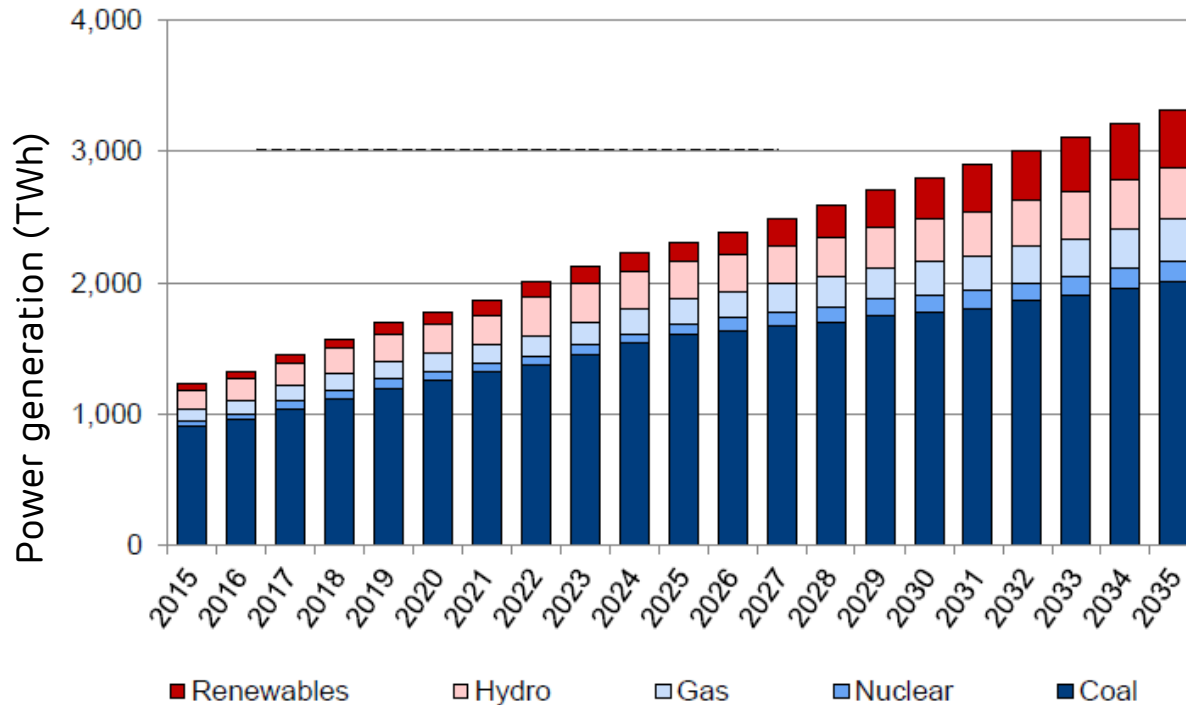
Developing countries are driving this growth – population growth and urbanisation

Population growth and development is driving demand



- India's population forecast to increase by 13 times the current population of Australia within the next 22 years.
- India electricity consumption per capita (kWh) currently 800 and forecast to increase to 1,800kWh per capita (2030).
- China is already at 4,000 kWh per capita and forecast to increase to 6,000 (2030).

Coal power generation in India will double



- India's projected power generation growth is ~5% p/a.
- All forms of power will be required however the heavy lifting will be done by coal.

Asian demand outlook for energy coal is strong

Country (Imports Mt)	2017	2020f	2025f	2030f	Growth
China	188	175	188	194	6
India	137	155	201	268	131
Japan	144	153	157	141	-3
Korea	116	131	140	131	15
Taiwan	58	65	67	68	10
Malaysia	26	33	38	45	19
Philippines	21	40	58	74	53
Vietnam	15	33	71	85	70
Thailand	22	26	40	54	32
Other Asia	12	30	60	88	76
Total	740	841	1,020	1,147	407

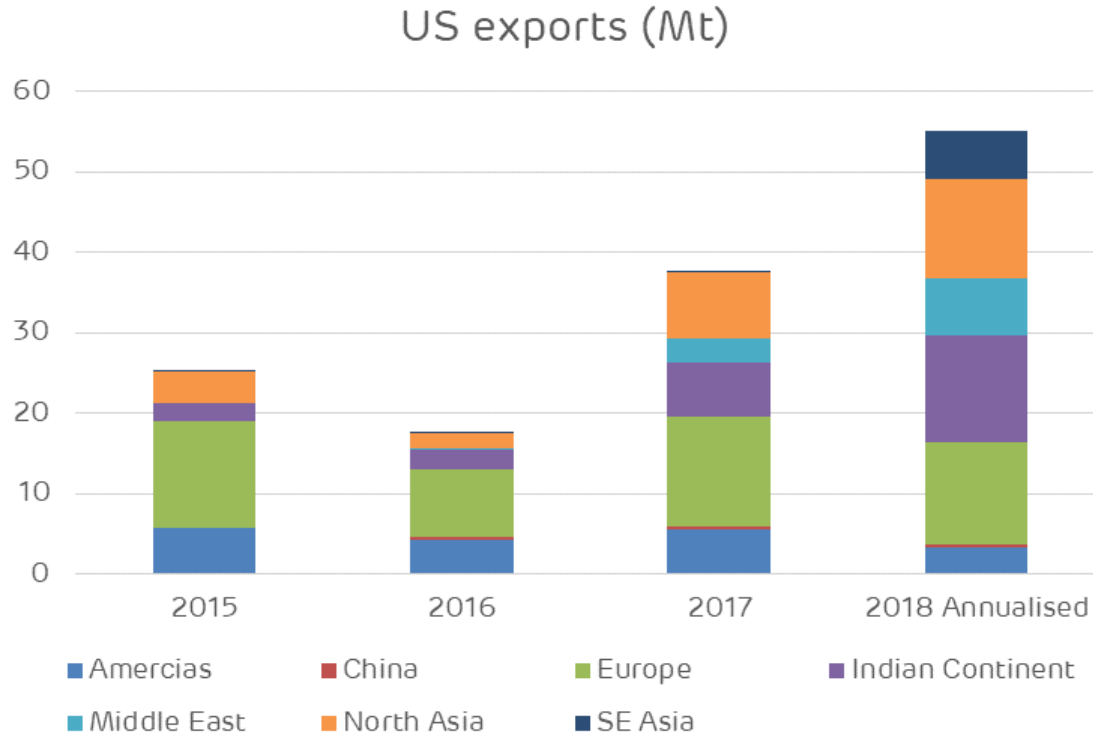
Who is and will take advantage of this opportunity?

Queensland's Opportunity – the Galilee Basin

Is Australia taking advantage of the demand opportunity?

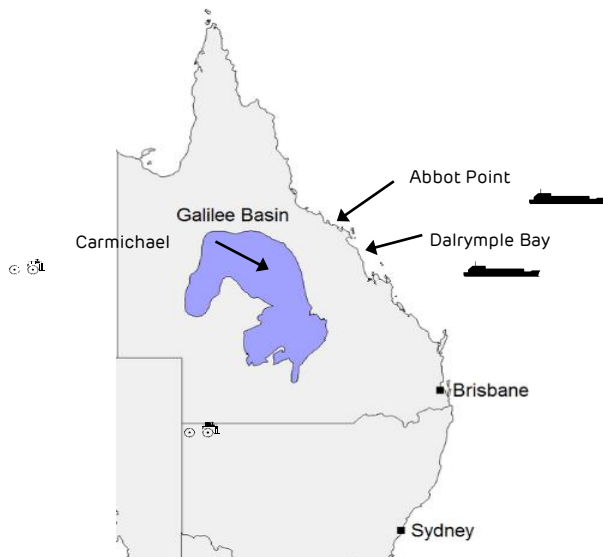
Country (Imports Mt)	Total Imports 2017	Imported from Australia 2017	Proportion of Australian coals in import market
China	188	42	22%
India	137	3	2%
Japan	144	82	57%
Korea	116	31	27%
Taiwan	58	23	40%
Malaysia	26	6	23%
Philippines	21	2	10%
Vietnam	15	2	13%
Thailand	22	4	18%
Other Asia	12	0	0%
Total	740	195	26%

Other countries are benefiting at Australia's expense



- Other countries have moved to occupy the growth markets.
- Galilee Basin can displace them on cost and quality.
- New capacity has to be created to take advantage of the demand opportunity.

The Galilee Basin is a globally significant resource



- Galilee Basin is a **large geological basin** in Western Queensland covering ~247,000km²
- It has 15 reported thermal coal deposits and **48 granted mining leases** but currently no operating mines
- **Carmichael Project** is the most promising near-term development

Key advantages of Galilee Basin

Large resource base

- Galilee Basin has an estimated ~100bn tonnes of coal, with Phase 1 of Carmichael mine alone containing 2.3bn tonnes

High quality coal

- Sample testing demonstrates premium quality low sulphur and low ash thermal washed coal
- CO₂ emissions from Galilee Basin coal are competitive with international benchmarks

Low cost

- Favourable geology and strip ratios
- Reliable logistic chains
- Geographical proximity to key markets

Strategic location

- Within an established mining region
- Queensland is near high coal demand countries of South Asia
- Pathway for Queensland and Australia to new markets

Delivering Queensland's Opportunity - The Carmichael Project

New rail and mine design to accelerate delivery **adani**

New rail network design



Fact	Previous rail design	New rail design
Route Length	388km	Approx 200km
Gauge	Standard Gauge (1435mm)	Narrow Gauge (1067mm)
Stage 1 capability	40mtpa	40mtpa
Maximum Speed	Loaded – 80km/hr Unloaded – 100km/hr	Loaded – 80km/hr Unloaded – 80km/hr
Design Life	Rail Track – 50 years Drainage Structures – 50 years Bridge Structures – 100 years	Rail Track – 50 years Drainage Structures – 50 years Bridge Structures – 100 years

"By ramping up to 27.5mtpa of coal production more gradually we can reduce the investment needed up front in plant, equipment and infrastructure."

"Importantly, we are not seeking any State or Federal money to kick off construction of the Carmichael Project."

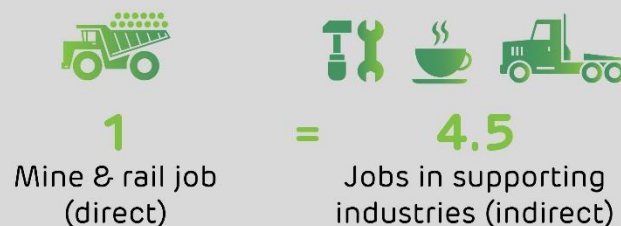
– Lucas Dow, CEO Adani Mining.

CARMICHAEL PROJECT JOBS

During the initial construction and ramp-up of the Carmichael Project there will be:



Queensland Resources Council's economic modelling states for every 1 direct job, 4.5 additional indirect jobs are supported.



Note that previous figures stating 10,000 jobs (direct and indirect) were based on construction and production of the mine delivering 60 million tonnes per annum and included the development of an additional port terminal.

Myths vs Facts

Myth: The Carmichael Mine will drain the Suttor River, taking 12 GL of water a year away from farmers at a time of drought.

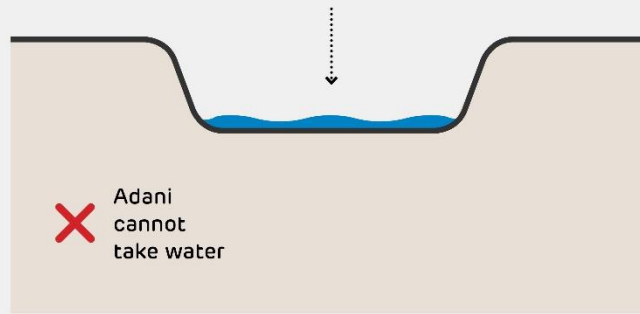
FACT: The Carmichael Project has a water licence to take a maximum of 12.5GL of water – but only when the river system is in flood and other water users, like farmers, have first taken their share.

The Carmichael Project's water take represents less than 1% of the annual water flow available in the Suttor/Belyando River System. We pay the same price for the water as other industrial users.

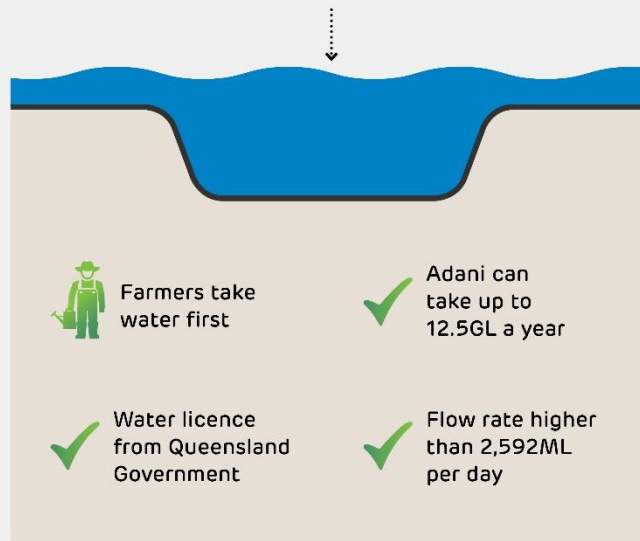
To put things in perspective...

- The Department of Natural Resources, Mines and Energy spent near 2 years assessing the Carmichael Mine's water licence.
- There are more than 200 conditions on this project to protect the natural environment, interests of landholders and traditional owners, many of which relate to the mine's use of water.

Suttor River in drought



Suttor River in flood



How can you get involved?



We will take a hands-on approach to ensure we oversee local engagement and benefits for the regions.

We will operate the mine, directly engaging contractors and employees.



Mine

- Initial accommodation
- Airport
- Quarries/Water
- Communications
- Access Road
- Main Accommodation
- Onsite Civils and Earthworks
- Waste Management Facilities
- Coal Handling and Preparation Plant

Rail



- Tracks
- Sleepers
- Detailed Design
- Earthworks
- Signalling
- Camp Construction
- Security

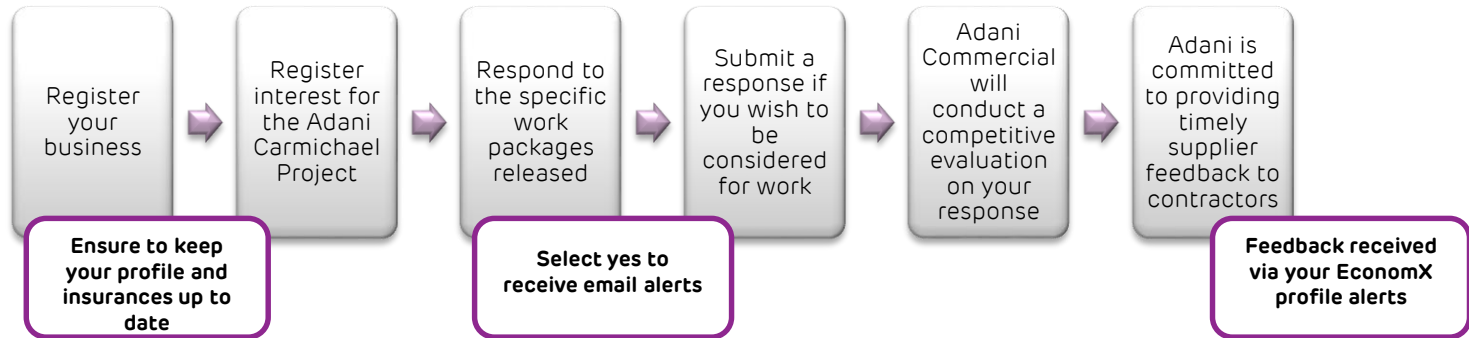
Upcoming Work

- Civil works
- Land clearing / mine area clearing / top soil removal
- Minor design requirements

Getting local regions involved

Supporting local

- Full, Fair and Reasonable work opportunities
- Competitive evaluation
- Supplier development and training
- Supplier feedback
- All work packages released to the supply market



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**ALL CARMICHAEL
PROJECT JOBS ARE
NEW JOBS FOR
QUEENSLANDERS**





No automation



Office
workers



Food
preparation



Waste
removalists



Scientists



Truck drivers



Engineering
companies



Miners



Cafés



Petrol
stations

In Summary

- Queensland's opportunity – the Galilee Basin is perfectly positioned to meet the increasing demand for seaborne coal from South East Asia.
- If Queensland does not meet the global demand, other countries are ready to take market share and the economic benefits for their own nations.
- The Carmichael Project will seize and secure this global economic opportunity for Queenslanders.

We are 100% committed to delivering the Carmichael Project, providing benefits for all Queenslanders.

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Resources



Logistics



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