# Carmichael Briefing Note:

## Are Australian Taxpayers About to Subsidise a Chinese State Owned Enterprise?

Institute for Energy Economics and Financial Analysis
IEEFA.org

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# Table of Contents



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# Executive Summary

Adani Group's controversial Carmichael coal mine and rail proposal in Queensland is targeting financial close by March 2018. After seven years of delays, the probability of this latest target being achieved has risen materially over 2017.

IEEFA remains of the view the Carmichael proposal carries reputational and stranded asset risk plus is both commercially unviable and unbankable absent major government subsidies. Private financing has proven problematic for the Carmichael proposal, acquired seven years ago by the Adani Group, and seven years behind schedule.

The world's largest private financial institutions are increasingly redirecting their investment focus into renewables and specifically ruling out financing greenfield thermal coal mines.

However, the Australian government seems single-minded on ensuring the project goes ahead. Australia's High Commissioner to India, the Prime Minister, the Queensland Premier and various Cabinet Ministers have all made recent trips to Gujarat to voice their support.

Australian governments have also granted a range of  financial subsidies and capital support at all levels:  local ($31m), state ($320m) and Federal ($1bn). Additionally, the Federal Government has been using Cabinet Ministers and officials from the Department of Foreign Affairs and Trade (DFAT) to procure foreign government support, both from India and more recently China.

IEEFA views this as a clear public bailout of a stranded asset. This is in direct contradiction to Australia's stated Paris Climate Agreement commitment. Any such Chinese involvement would also appear contradictory to China's energy market and global climaleadership evident in the run-up to Bonn. Such subsidies are also unpopular with Australian taxpayers, not the least in the nature of a likely $1bn 30 year high risk, low return "quasi-equity investment" to a foreign tax haven based billionaire family that is under Indian government investigation for fraud, tax evasion, bribery and corruption.

In October 2017 Adani said it aims to secure additional Export Credit Agency (ECA) support and was hoping to sell minority equity stakes in the mine and railway to achieve financial close on the A$5bn stage I proposal to export 25 million tonnes per annum (Mtpa) of low energy, high ash thermal coal.

IEEFA has evaluated the foreign sources of additional subsidised public financing Adani is likely pursuing. According to various sources, the Chinese government state owned enterprise (SOE) China Machinery Engineering Corporation (**CMEC**) appears to be the leading contender, aiming to secure the engineering, procurement and construction (EPC) contracts for the mine and / or rail projects (similar to Downer EDI's $2bn non-binding Letter of Award won in 2014) in return for providing access to the Export Import Bank of China & /or China Construction Bank, both SOE.

The Chinese government is increasingly playing a prominent global leadership role in driving the Paris Climate Agreement into Bonn as well as in investing in the global energy market transformation, as illustrated by the phenomenal outcome of installing up to 50GW of solar in 2017 alone. As such, any contradictory move by a leading Chinese EPC firm to develop the largest new coal basin globally brings significant reputational risks for China.

With South Korean's EXIM Bank and POSCO pulling out in 2015, Chinese SOE investment would secure Chinese jobs for equipment and service supply. However, China is unlikely to be interested in importing Carmichael's low quality thermal coal. Considering this and the financial distress of Adani's US$4-5bn import coal Mundra power plant, this proposition raises the question of where the coal from the Carmichael mine will go? Pakistan appears to be one option, but this raises a range of challenging political issues of its own.

# Australian Taxpayer Subsidies

## Diminishing Private Finance for Coal

Back in 2010 at the time of the Adani Group acquisition of the A$16bn Carmichael coal proposal, first coal was expected by 2014 or 2015. With the world coal markets booming, private debt financing was readily available for almost any coal deal.

Fast forward to April 2016 and the bankruptcy of Peabody Energy[1] and most of its US listed coal mining peers, highlighted how dramatically financial markets perceptions of stranded asset risk had developed.

Many peak-cycle priced, debt funded acquisitions of coal assets proved to be disastrous for acquirers. Rio Tinto controversially acquired then wrote-off US$3.7bn on the acquisition of Riversdale Mining, selling the residual mess to Coal India Ltd in 2015 for US$50m, with the SEC laying fraud charges in October 2017.[2]

The world's largest private financial institutions are increasingly redirecting their focus onto investments in renewables and specifically ruling out financing greenfield thermal coal mines, associated infrastructure and coal fired power plants. October 2017 saw one the largest renewable energy capital market transactions ever announced, a US$5bn purchase of Equis Energy by Chinese and North American pension funds. The top five US banks have collectively committed to US$575bn of renewable energy financing by 2025.

In January 2017 Deutsche Bank announced it had revised its approach to coal financing and amended its guidelines governing coal power and mining. Deutsche Bank will not grant new financing for greenfield thermal coal mining and new coal-fired power plant construction. Acknowledging the Paris Climate Agreement commitments, the bank will gradually reduce its existing exposure to the thermal coal mining sector.[3]

In July 2017 SwissRe, one of the world's four largest re-insurance firms, announced a new policy that excludes any new investment in thermal coal or new power plants.[4]

In October 2017 Australia's financial press continues to report on the multibillion writedowns incurred and pending on the top-of-the-cycle $4bn Wiggins Island Coal Export Terminal (WICET) debacle.[5] This is proving problematic given the private Adani family needs to secure a $2bn refinancing of its own Abbot Point Coal Port over the next three years (of which $1.5bn is due by November 2018).[6] Deutsche Bank was the co-lead on the last Abbot Point refinancing, alongside Commonwealth Bank and Westpac Banking Group. The later in October 2017 ruled out any future involvement in the port, nor the mine or railway.[7]

Major shifts in finance sector thinking about the energy transition show why is it right to be anxious about large capital expenditure on the Carmichael thermal coal proposal. In October 2017, as a clear sign of the magnitude of financial markets thinking shift on the inevitability of a technology driven global energy market transformation, a consortium of

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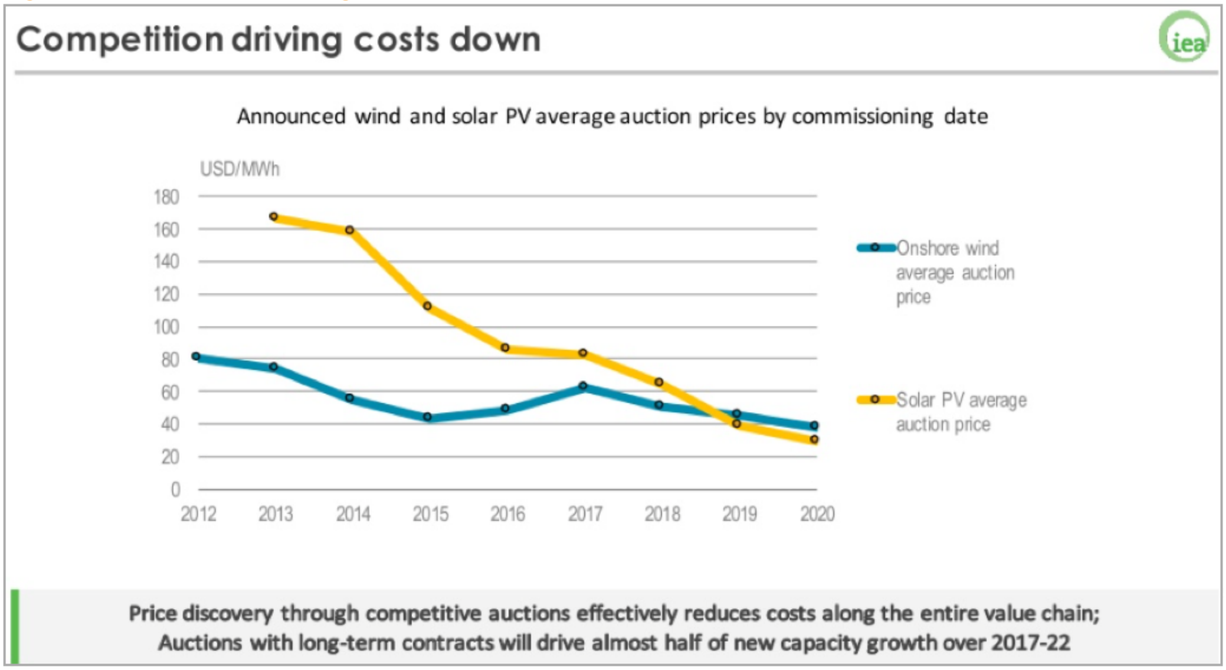
1 http://www.smh.com.au/business/energy/top-coal-miner-peabody-files-for-bankruptcy-20160413-go5jsn.html
2 https://www.ft.com/content/163f2e3c-b38a-11e7-a398-73d59db9e399?mhq5j=e6
3 https://www.db.com/newsroom_news/2017/medien/amended-guidelines-for-coal-financing-en-11466.htm
4 http://www.swissre.com/about_us/about_our_business/asset_management/responsible_investing_in_practice.html
5 http://www.afr.com/street-talk/wicet-gets-on-front-foot-in-restructure-talks-20171024-gz7k9m
6 http://ieefa.org/wp-content/uploads/2017/10/Escalating-Financial-Risk-of-Adanis-Abbot-Point-Coal-Terminal.pdf
7 https://www.theguardian.com/environment/2017/oct/12/abbot-point-coal-terminal-westpac-may-not-refinance-adani-loan

Chinese and North American pension funds acquired for US$5bn the Equis Energy portfolio of 11GW of renewable energy infrastructure assets.[8]

One key reason underpinning escalating global investment in renewable infrastructure is the dramatic cost reductions achieved across both wind and solar projects, with the required electricity tariffs declining 10-20% annually in recent years, with the rate of deflation accelerating in 2016 and 2017 – refer Figure 1.

**Figure 1: Renewable Energy Deflation Accelerates**




Source: International Energy Agency (IEA), Renewable Energy Outlook 2017[9]

In 2015 when Coal Minister Piyush Goyal expressed the Government of India's target to virtually cease thermal coal imports by the end of this decade, his reasoning was clear – reducing imports would reduce the current account deficit drain on the Indian economy, thereby supporting India's exchange rate and reducing imported inflation. A second related rationale was to build energy security by diversifying India's electricity generation fleet to incorporate a much greater share of hydro, wind and solar. India has set an exceptionally ambitious target of 275GW of renewables by 2027. With wind and solar tariffs dropping 50% over the last two years to record lows in 2017 of Rs2.44/kWh (US$38/MWh),[10] renewables are now immediately 10-20% lower cost than existing domestic thermal power generation. With zero tariff indexation over the 25 year power purchase agreements, this also puts in place a long term deflationary force in India's electricity market, making thermal power generation assets increasingly uncompetitive and financially stranded.[11] In October 2017 Energy Minister R.K.Singh reinforced the government's target to build renewables to 40% share by 2027.

[8] https://www.ft.com/content/02875bc2-b942-11e7-9bfb-4a9c83ffa852?ftcamp=crm/email/_2017___10___20171025__/emailalerts/Keyword_alert/product

[9] https://www.iea.org/renewables/#section-1-2A

[10] https://www.ft.com/content/1d24c928-94b3-11e7-83ab-f4624cccbabe?mhq5j=e5

[11] http://www.financialexpress.com/industry/axis-bank-npas-essar-jindal-steel-power-lanco-ballarpur-on-list/906940/?utm_source=Mailer&utm_medium=ET_batch&utm_campaign=etenergy_news_2017-10-26

India's thermal coal imports peaked in 2014/15, declined 6% in 2015/16, declined another 6% in 2016/17 and the rate of decline has accelerated to-date in 2017/18.[12] This highlights the stranded asset risk of the Carmichael proposal, a strategy that was government sanctioned and sensible in 2010 is now a legacy, unviable proposition in 2017.

# Subsidised Public Finance for Carmichael

As private finance has progressively moved away from financing greenfield thermal coal projects, getting to financial close has progressively harder[13] and Adani Enterprises has repeatedly had to defer their Carmichael proposal. The less likely this proposal has become, the more desperate certain coal boosters have become. The result has been a series of  new government subsidies to entice Adani to continue with this proposal.

## $1bn subsidised NAIF rail loan

In October 2017, Adani is understood to have formally requested a heavily subsidised loan of up to A$1bn from the North Australia Infrastructure Facility (NAIF). The Australia Institute's March 2017 report "Don't be so naif" highlights a lack of transparency in how NAIF operates and serious questions over poor governance and undue political pressures.[14] To-date no loan commitment has been made.[15] The loan tenor is up to a maximum of 30 years, the interest charged as low as the Federal government bond rate (currently 2.75%), fees are discounted and the risk profile of the "loan" likely to be heavily subordinated repayment terms. NAIF has a mandate that is extremely flexible, with the 2016/17 annual report stating:

> ***"NAIF's product offering can be structured across the spectrum of finance from senior debt to quasi equity using NAIF's concessional lending options."[16]***

## $600m coal royalty holiday

Adani put its Carmichael development plans on hold early in 2017 in protest that the Queensland Government was unwilling to provide a multi-year royalty holiday for the Carmichael proposal.[17] In response, the Queensland Premier Annastacia Palaszczuk granted a royalty holiday for any new greenfield coal mine. While government transparency on this massive new subsidy is absent, IEEFA estimates this loan is worth around A$600m.[18] The net present value has been reported at estimates of A$320m.[19]

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[12] http://energy.economictimes.indiatimes.com/news/coal/indias-august-coal-shipments-fall-14-percent-government-says/60948532

[13] https://www.ft.com/content/c158fc18-51b4-11e7-bfb8-997009366969

[14] http://www.tai.org.au/sites/defualt/files/P318%20Dont%20be%20so%20naif%20FINAL.pdf

[15] https://www.theguardian.com/environment/2017/oct/26/australian-ministers-write-to-china-to-confirm-approval-of-carmichael-mine?CMP=Share_iOSApp_Other

[16] page 3, NAIF 2016/17 Annual Report https://naif-gov-au.industry.slicedtech.com.au/wp-content/uploads/2017/10/NAIF-Annual-Report-2016-17-FINAL.pdf

[17] http://www.abc.net.au/news/2017-05-22/adani-indefinitely-postpones-final-carmichael-coal-mine-decision/8548164

[18] 25Mtpa for 5-7 years using a Newcastle benchmark thermal coal export price of US$75/t (less a 30% discount for low energy (4,950kcal) and the high 25% ash content) converted at US$0.80 and using a coal royalty of 7%, possibly less a $5pm pa payment.

[19] https://www.theguardian.com/environment/2017/sep/03/adan-queensland-dispute-mine-royalties

## $31m airport subsidy from local governments

In October 2017 it was widely reported that two Queensland local councils had committed $31m of ratepayer funds to the construction of a regional airport for Adani's Carmichael fly-in, fly-out (FIFO) workforce.

Ironically, this comes on the back of new laws passed in August 2017 by the Queensland government to try to curb the use of FIFO workers in the coal mining sector, given the adverse family and community implications.[20]

## Australian Government Supports Adani's bid for Chinese finance

In October 2017 it was confirmed in the Australian Senate Estimates hearings that two senior Federal government ministers, the ex-deputy Prime Minister Barnaby Joyce and the Minister for Trade Steve Ciobo, had written a letter to the Chinese government's National Development and Reform Commission confirming that the Carmichael project had all the necessary environmental approvals.[21] The Secretary to the Department of Foreign Affairs and Trade (DFAT) stated that the letter was probably written upon a request from Adani to help in their search for Chinese funding for the project in the absence of private finance availability.

This follows the Australia's High Commissioner to India, Australia's Prime Minister, the Queensland Premier and various Cabinet Ministers making visits during 2017 to Gujarat and Delhi to voice their support for the Carmichael proposal.

The idea of parts of the Australian government asking for Chinese government involvement in a stranded asset proposal risks dragging China into a very controversial and high-risk project in the face of significant community resistance and the continued inability of Adani to reach financial close using private firms in the global financial market.

[20] http://www.abc.net.au/news/2017-08-25/queensland-mines-ban-100-per-cent-fifo-fly-in-fly-out-workforce/8841180
[21] https://www.theguardian.com/environment/2017/oct/26/australian-ministers-write-to-china-to-confirm-approval-of-carmichael-mine?CMP=Share_iOSApp_Other

# China Machinery Engineering Corp

China Machinery Engineering Corporation (**CMEC**) is a 78% controlled listed subsidiary of **China National Machinery Industry Corporation** (better known as **SINOMACH**) which is managed directly by the central government of China[22]. SINOMACH employs 160,000 staff and has 12 listed subsidiaries, and has a market presence in 170 countries. Contracting and finance are detailed as two of SINOMACH's four core areas of focus (alongside mechanical equipment and services). Accelerating the pace of "going global," is a stated objective. SINOMACH claims a 70% share of China's total power plant exports.

CMEC is a China and Hong Kong listed (HKSE Code: 1829) Engineering, Procurement, Construction (EPC) contractor with several decades of experience working internationally.[23] In the first half of 2017 CMEC recorded a revenue of RMB9,375m (US$1.4bn) and operating profit of RMB906m (US$137m), with international activities contributing 54% of revenue.[24] CMEC is in the top three outbound EPC operators in China.

The power and energy sector contributed 68% of total international revenue. Projects in 2017 include grid transmission lines in Angola, FGD desulphurisation equipment into Serbia, hydro-electricity in the Congo, a US$1.6bn railway development in Argentina, a 484km US$1.1bn coal export railway and port contract in Mozambique (a 40% share of the total rail EPC contract of US$2.7bn), [25] [26] and 600MW thermal power turbines into both Venezuela and Indonesia. In 2016 CMEC completed the Thar coal power plant and the TENAGA wind projects in Pakistan.[27] In September 2017 CMEC signed a US$0.5bn contract to build a 1.26GW LNG fired power plant in Punjab, Pakistan.[28]

CMEC highlights that "investment-driven EPC models achieved substantial breakthroughs"[29] and the opportunities for leveraging Chinese government subsidised / directed export credit agency (ECA) finance.

CMEC reports its future involves "further developing and adjusting the strategic docking with countries along "the Belt and Road" (see below) route and following closely national strategies and relevant policies", as well as seeking new markets, new models and to expand the breadth of work focus, with a focus on developing countries. CMEC reports China signed US$124bn of new EPC outbound contracts in the first six months of 2017, +12% yoy. With the capital support of hundreds of billions of yuan provided by financial institutions such as Silk Road Fund, China Development Bank and the Export-Import Bank of China, the market in the countries along "the Belt and Road" region provide opportunities for further development of China's foreign engineering contracting industry.

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22 http://www.sinomach.com.cn/en/AboutUs/CompanyProfile/
23 http://www.cmec.cn/html/
24 http://www.hkexnews.hk/listedco/listconews/SEHK/2017/0928/LTN20170928175.pdf
25 http://www.hkexnews.hk/listedco/listconews/SEHK/2017/0613/LTN20170613787.pdf
26 http://clubofmozambique.com/news/moatize-macuse-project-to-begin-in-late-2018-govt/
27 http://www.hkexnews.hk/listedco/listconews/SEHK/2017/0427/LTN20170427625.pdf
28 http://www.hkexnews.hk/listedco/listconews/SEHK/2017/0929/LTN20170929731.pdf
29 2016 Annual Report, note 3, page 30.

# Is Adani looking to CMEC for EPC/ECA Financing?

In January 2017, CMEC disclosed that their President Zhang Chun had held an in-depth meeting with representatives of Adani Mining Pty Ltd (CFO Praveen Khandelwal) and Downer EDI's CEO David Overall in which the CMEC highlighted its involvement in previous railway construction projects. CMEC described Downer EDI as a strategic partner. CMEC also stated that it hoped to "take part in financing, construction and operation of relevant coal mines and railway projects"[30].

In 2014 Downer EDI signed a non-binding letter of award with Adani worth A$2bn covering:[31]

1. A five year mining service contract for the operation of the mine; and
2. Under the proposed mine infrastructure contract, Downer was to provide EPC of on-site and civil works for the mine.

A separate letter of award was reported to have been made to Downer EDI in August 2015 for the construction of a $420m coal handling and preparation plant (CHPP). Downer was to deliver this work in a joint venture with Korean firm POSCO Engineering, but this was reported as being subsequently suspended due to ongoing project delays.[32]

Of interest, Downer noted clear confidence in "first coal in 2017", a time-line looking to be four years behind schedule three years later. In June 2017 Downer EDI provided an ASX update saying it had received an updated but still non-binding letter of Award.[33]

This CMEC press release is telling in that it confirms Adani was looking to bring in Chinese finance and EPC capacity back in January 2017. IEEFA understands that discussions have progressed since January 2017 and that CMEC is still negotiating to be potentially involved as a contractor and financier for the proposed Carmichael Rail project.

In October 2017, Adani Australia CEO Jeyakumar Janakaraj said Adani were seeking to secure loans from export credit agencies (ECAs) and looking to sell minority stakes in the coal and rail projects.[34] As well as engineering expertise, CMEC could bring finance in two forms:

1. CMEC has a history of taking minority equity stakes in some of its EPC projects; and
2. CMEC has an in-house financing division and also a strong working relationship with the Export-Import Bank of China (a SOE).

CMEC has been involved since 2011 in a very troubled development of a US$1.35bn, 900MW import coal fired power plant in Sri Lanka, with the China Export-Import Bank providing a phase 1 US$450m heavily concessional loan to secure the EPC contract. Import coal power in Sri Lanka have been controversial, plagued by delays and mechanical troubles[35] such that Sri Lanka recently cancelled its latest coal-fired power plant proposal and decided to diversify into LNG and renewable generation to improve reliability and reduce pollution pressures.[36]

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30 http://en.cmec.com/xwzx/gsxw/201701/t20170118_136838.html
31 http://iminco.net/downer-edi-wins-2-billion-adani-carmichael-mine-contract/
32 http://www.miningmonthly.com/development/construction/downer-wins-680m-carmichael-contracts/
33 http://www.downergroup.com/Resources/Documents/Investors/ASX-Announcement-PDFs/2017/20170606-Update-on-Letter-of-Award-for-Carmichael-Coal-Mine-Contract.pdf
34 https://www.reuters.com/article/adani-ent-australia-mine/update-1-adani-aims-to-wrap-up-australia-project-funding-by-march-idUSL4N1ME308
35 http://reneweconomy.com.au/new-coal-power-station-coal-industry-wont-boast-16003/
36 http://endcoal.org/2017/08/once-bitten-twice-shy-sri-lanka-dumps-new-coal-plans/

# NAIF: An Australian Taxpayer Subsidy for a Chinese State Owned Enterprise?

The first Northern Australia Infrastructure Facility (NAIF) annual report states that its role is to "crowd in" potential investors by using the tax payer support to de-risk the project for potential private investors.[37] In the case of the Carmichael Rail project, it appears the principle investor may be a Chinese state owned enterprises (SOE) such as the CMEC (itself part of one of the biggest Chinese SOE) will bring access to Chinese state-owned banks to provide debt funding for the project. If CMEC takes a minority equity stake in the rail project then the subsidy to the Chinese government is even more overt.

# Social Licence Issue: Australian or Chinese Jobs?

Any Chinese banking involvement in the project is likely to be dependent on manufacturing jobs being created in China, most likely heavy equipment and machinery i.e. locomotives, coal rail wagons, heavy duty trucks and draglines etc. The creation of economic benefit for the home country is the essential role of Export Credit Agencies. ECA's like The Export-Import Bank of China and China Construction Bank would only be involved if there were benefit to China.

Mining projects are increasingly exposed to social licence risks that in turn can impact financial risk. A loss of social licence for the Carmichael project could potentially decrease the likelihood of it receiving Australian taxpayer largesse. Given that the NAIF Investment Mandate requires a project to be of an Australian public benefit to qualify for funding, any reduction in the number of jobs created for the people of Northern Australia could increase the financial risk of Adani not receiving its concessional, taxpayer funded NAIF loan. This is especially true given that much of the justification for the political support that the Carmichael Coal and Rail projects has rested on the local jobs it is suggested it will create. Adani has consistently advertised that its projects will create 10,000 Queensland jobs, yet Adani's own expert witness has revealed Adani has exaggerated the amount of jobs and royalties the mine project will create, after being forced to tell the truth under oath in Australian court.[38]

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37 https://naif-gov-au.industry.slicedtech.com.au/wp-content/uploads/2017/10/NAIF-Annual-Report-2016-17-FINAL.pdf

38 https://www.theguardian.com/australia-news/2015/apr/27/adani-coalmine-would-not-deliver-jobs-and-royalties-promised-land-court-hears

# Carmichael Coal Destination?

The increasingly likely involvement of Chinese state-owned engineering and banking enterprises raises questions about the strategic motive for China's involvement. Such questions extend to the proposed destination for coal produced at Carmichael. Adani has long claimed the coal is bound for India, where it is said the coal will "light up 100 million Indian homes".[39] Indian government policy and the financial crisis enveloping Adani's main import coal-fired power station at Mundra, which was set to receive Carmichael coal, make this seem increasingly less likely.

# Adani Power Ltd: Mundra Status Update

Adani has long argued that the Carmichael coal proposal in the Galilee is a key part of their "integrated pit-to-plug strategy".[40] The logic they attested is that the traded seaborne thermal coal price is irrelevant to the commercial viability of Carmichael because the coal will be used within the Adani family group of companies, so the venture needs to be viewed in the context of the overall profitability of the pit-to-plug strategy backed by the group as a whole. In addition, the provision of electricity to energy-poor Indians has often been invoked as a justification for the project in the face of the emissions that the coal would create.

With the forward price of thermal coal at around US$75/t, IEEFA estimates Carmichael is both unviable[41] and (absent the NAIF loan) unbankable, so this integrated strategy becomes even more important. Indian capacity for more coal related lending is especially limited.[42]

**Figure II.2: Adani Power's June 2017 Financial Results: Clear Financial Distress**

| US$ Million | 1QFY2017 | 1QFY2018 | YOY Chg |
|---|---|---|---|
| | | | |
| Revenues | 837.2 | 873.0 | 4% |
| Price of electicity (US$/MWh) | 59.97 | 63.86 | 6% |
| | | | |
| EBITDA | 271.3 | 250.1 | -8% |
| D&A | -92.4 | -102.9 | 11% |
| EBIT | 178.8 | 147.1 | -18% |
| Net interest | -224.3 | -217.3 | -3% |
| | | | |
| Net profit | -36.0 | -70.0 | 94% |
| | | | |
| EBIT / Net interest | 0.80 | 0.68 | |

Source: Adani Power Ltd 2017/18 First Quarter Report, IEEFA calculations

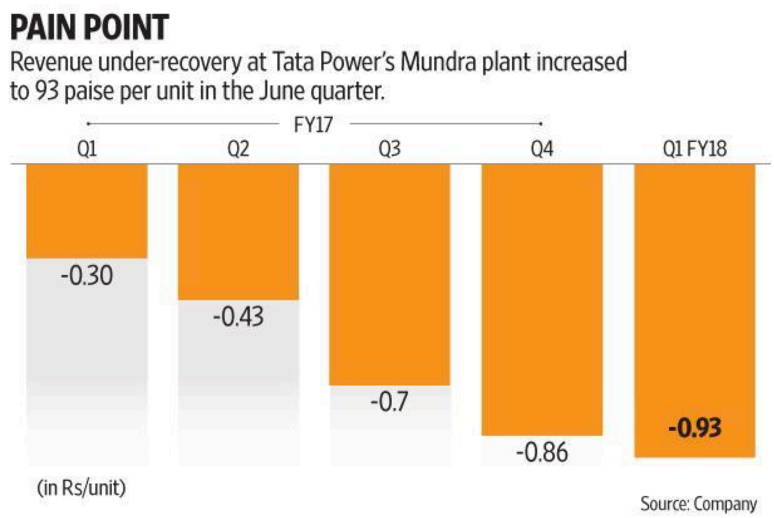
39 http://www.thehindubusinessline.com/companies/adani-group-to-begin-work-on-rail-link-to-carmichael-coal-mine-in-australia/article9924155.ece
40 http://www.livemint.com/Companies/0v3GPxrwuJA6gebfOMy7iN/We-aspire-to-be-world-leaders-with-our-integrated-pittoplu.html
41 http://ieefa.org/ieefa-update-increasingly-cursed-australian-coal-project/
42 http://www.livemint.com/Money/l1gLZbSwrke4EroGZ49m8N/Is-the-governments-bank-recapitalisation-plan-a-bailout.html?lipi=urn%3Ali%3Apage%3Ad_flagship3_feed%3B4C9v+oTgT%2FyFGV3yocUVnA==

Crucially, Adani Power Ltd (APL) has reported that its core asset at Mundra is no long viable.[43]

APL's 2016/17 net loss was US$954m, reflecting the implications of an Indian Supreme Court ruling that the Mundra power plant's contracts to supply electricity were valid and could not be adjusted to reflect the company's failure to hedge against the rising cost of imported coal. APL's result briefing included the statement that APL would undertake negotiations with the government over allocation linkages that "will allow us (APL Mundra) to access domestic coal" which is cheaper than imported coal, an effort to try and make the plant viable. APL's losses have increased in the current financial year.

Adani's 4.6GW power plant at Mundra is not alone. Tata Power's 4.0GW import coal-fired plant reported record losses in the June 2017 quarter. Figure II.3 highlights why the two largest import coal fired power plants in India are both loss-making – the cost of fuel and generation exceeds the agreed tariff set in the 25 year PPA. The Boards of both companies have put the equity in each of these coal plants up for sale for Rs1 each, notwithstanding the multi-billion dollar capital investment undertaken over the last decade at each plant.

**Figure II.3: Tata Power's June 2017 Financial Results Shows Financial Distress at Mundra**




**Revenue under-recovery at Tata Power's Mundra plant increased to 93 paise per unit in the June quarter from 30 paise a year ago. Graphic: Mint**

Source: Tata Power, Mint

APL's average electricity tariff realisation in 2016/17 was Rs3.85/kWh. This is well above the cost of new Indian wind and solar which is down 30% year-on-year (yoy) to the recent record low of Rs2.44/kWh. Huge financial leverage adds to significant downward electricity tariff pressures.

Indian press reports say a corporate restructuring is the prelude to the potential sale of a 51% stake in Adani Power (Mundra) Ltd to the Gujarat government[44]. It is hard to see a scenario where the Gujarat government would not then seek a domestic coal supply deal with Coal India Ltd to lower fuel costs and restore profitability. Adani Power (Mundra) has US$3.5bn debt attached to it. Costing almost US$5bn to build, APL reports the plant is just

[43] http://energy.economictimes.indiatimes.com/news/power/gujarat-writes-to-centre-over-electricity-crisis-as-adani-says-mundra-project-becoming-unviable/58603194

[44] http://economictimes.indiatimes.com/industry/energy/power/adani-power-urges-gujarat-government-to-bail-out-mundra-power-plant/articleshow/59008598.cms

covering its financing costs, and as such IEEFA estimates a US$1.0-1.5bn write-down is pending, but this would be problematic as it would more than wipe out APL's US$464m book value of equity.[45]

A third Gujurat coal power plant is also in financial difficulty: Essar Power relinquished its 1.2GW import coal fired power plant to its banking consortium in October 2017 as lenders agreed to invoke the strategic debt-restructuring (SDR) plan.[46]

**Figure 11.4: Adani Power's March 2017 Balance Sheet Shows Financial Distress**

| | | |
|---|---|---|
| Share price | 30.65 | Rs |
| Issued shares | 3,857 | m |
| Market capitalisation | 118,214 | Rp million |
| Market capitalisation | 1,827 | US$m |
| | | |
| Promotor Shares | 2,626 | m |
| Promotor shareholding | 68.1% | |
| Promotor shareholding | 1,788 | US$m |
| | | |
| Net Debt | 7,597 | US$m |
| Net debt to mkt cap of equity | 4.2 | times |
| Shareholders equity | 464 | US$m |
| Net debt to book equity | 16.4 | times |
| | | |
| Five year high - Feb 2012 | 82 | Rs |
| Shar price decline | -63% | |
| | | |
| Shareholders equity | 30,000.0 | Rs M |

Source: Adani Power Ltd 2016/17 annual report, IEEFA calculations

India's Coal Minister Piyush Goyal has repeatedly re-iterated his target for India to cease thermal coal imports this decade. Goyal targets for Public Sector Undertakings to cut imports to zero in FY2018[47]. Following the peak of coal imports at 212Mt in FY2015, a steady decline has continued. India's thermal coal imports for the first seven months of 2017 fell 13% yoy.[48]

The Indian government's clear policy drive to diversify the electricity grid into less emissions-intensive generation combines with the rapid renewable energy deflation to materially undermine the viability of coal-fired power generation. Reports highlight $15bn of coal power plants for sale with no buyers[49]. Thermal power sector financial distress in the Indian banking sector is a major obstacle to sustainable growth in India. This pressure was clearly evident in the 95% year-on-year decline in State Bank of India (SBI)'s 2016/17 consolidated results due to a trebling of bad debt provisions. This also further undermines the Adani Group's ability to get SBI to stump up its 2014 announcement of a $1bn Adani Australia loan commitment.

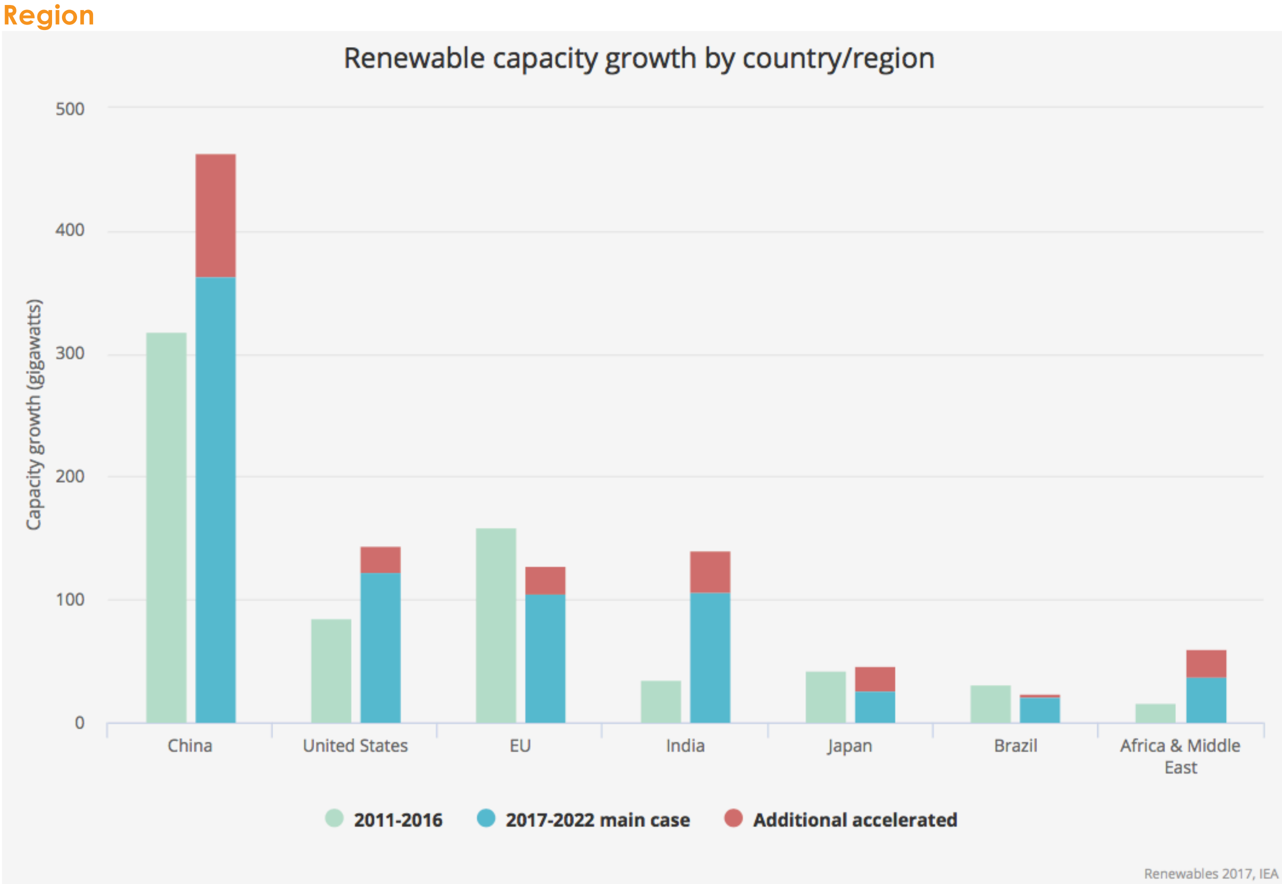
[45] https://www.bloombergquint.com/business/2017/09/04/adani-loses-entire-investment-in-mundra-indias-biggest-thermal-power-plant
[46] http://www.business-standard.com/article/companies/gujarat-may-take-over-tata-adani-essar-power-plants-117101100029_1.html
[47] http://www.livemint.com/Industry/vwT7Kru9jsF0dUEDtLKOrL/Govt-plans-to-cut-coal-imports-for-power-PSUs-to-zero-in-FY1.html
[48] https://www.theguardian.com/environment/2017/aug/25/coal-in-decline-adani-in-question-and-australia-out-of-step
[49] https://qz.com/1000602/15-billion-worth-of-coal-power-plants-are-on-sale-in-india-but-nobody-wants-to-buy-them/

# Reputational Risks for China

There are considerable reputational risks that China is likely to have to consider in evaluating any SOE involvement in the Carmichael thermal coal proposal.

Firstly, with the more isolationist political stance of America, China has stepped up into the global leadership role in addressing climate change, and ensuring the Paris Climate Agreement remains on target. China has a history of leading by doing, and their likely record renewable energy installs in 2017 (including 50GW of new solar[50]) is testimony to their continued capacity to surprise even the most optimistic energy analysts. This is creating a real shift in global geo-politics. With respect to foreign policy generally, and the renewable energy sector in particular, there is a real capacity for China to lead and build on increased support for renewables in India and Europe, accelerating the inevitable global energy market transition. Having a Chinese SOE like CMEC instrumental in facilitating the development of the world's largest new thermal coal development globally is diametrically opposed to China's critically important new global climate change leadership. Community opposition to the project means that the role of Chinese companies in the project would be widely publicised in Australia and around the world.

**Figure III.1: China is leading by Example: Global Renewable Capacity Expansions by Region**




Source: IEA Renewable Energy Outlook 2017

[50] http://reneweconomy.com.au/china-set-add-50gw-new-solar-pv-2017/

China would also need to assess the merits of its banks becoming a key financial enabler for the Carmichael project, including the reputational risks of being involved in a controversial project. According to an October 2017 ReachTEL survey, 55.6% of respondents oppose or strongly oppose the project[51]. Stripping out respondents without a view leaves 68.1% of Australians against the project. This civil opposition to the Adani coal project (including 20,000 Australians coming together last month to take part in a National Day of Action at 60 locations [52]) is reminiscent of the Franklin Dam campaign starting in 1978, which placed significant pressure on the then Australian Government and saw the subsequent cancellation of the project in 1983.

The reputational risks of involvement in the Carmichael proposal were clearly evidenced in the Editorial Board of the New York Times column carrying the title: [53] ***"The Last Thing Australia or Our Planet Need."***

China has also instigated a energy policy to stabilise the traded coal sector in order to protect its domestic coal mining sector, along with the 5.5 million miners directly employed in the sector, to effect avoid a disorderly transition. Having referenced a likely US$70-80/t banding for internationally traded thermal coal, a focus on enabling the largest new thermal coal basin globally will increase supply and drive prices down materially. This is particularly pertinent given the low Carmichael coal quality in terms of its very high ash and very low energy content (relative to current Australian coal export standards).

[51] https://www.theguardian.com/environment/2017/oct/07/most-australians-oppose-adani-mine-poll-shows-amid-national-protests
[52] http://www.stopadani.com/actionday
[53] https://www.nytimes.com/2017/10/25/opinion/the-last-thing-australia-and-our-planet-need.html

# China's Belt & Road: Controversial in South Asia

China's Belt and Road Initiative (BRI) aims to help a wide range of developing nations economic growth and facilitating their access to global export markets by instigating an extensive infrastructure investment program along ancient land and sea silk trading routes.[54] The plan, whose further details were unveiled at a June 2017 meeting comprising 28 countries, reaches out to nations comprising 4.4bn of the world's population.[55] Perhaps $1tn of investment will be mobilized by the initiative. At the 2017 Communist Party Conference, the Belt and Road Initiative (BRI) was enshrined within the Communist Party constitution, giving the initiative even greater prominence.[56] Along with this will come even greater pressure for the plan to succeed.

One of the key developments of the initiative is the China-Pakistan Economic Corridor (CPEC), a chain of road, rail and port projects linking Western China with Pakistani ports on the Arabian Sea. Power developments by Chinese state-owned power utilities and engineering contractors are also underway to provide energy to these developments and to power the economic growth they are expected to generate. Total investments being evaluated exceed US$62bn, but come with geo-political risks given separatist issues by some local groups creating military tensions on part of the Pakistan-India-China border.[57]

The strategic benefit to China of having direct access to the Arabian Sea, bypassing India and the narrow Malacca Strait near Singapore is clear. Some nations have concerns that the motive of BRI is to cement Chinese power and influence over poorer nations in the region. This is seen in some quarters to be a possible national security risk for India which has so far declined to join the initiative. Tensions have been high between India and China over a recent border dispute[58]. The fact that the CPEC passes through Pakistan-occupied Kashmir has added to tensions between India and Pakistan.[59] [60] Meanwhile, Chinese efforts to woo Bangladesh with BRI projects[61] could see India surrounded by countries that are under increasing Chinese influence. Nepal and Sri Lanka are already part of the Belt and Road Initiative.

The U.S. appears to see increased ties with India as a potential counterweight to growing Chinese influence in the region.[62] Further to this, in October 2017 it was reported that Japanese Prime Minister Shinzo Abe is expected to propose the idea of a new four-party dialogue (including India, the United States and Australia) to U.S. President Donald Trump. The strategic dialogue will consider the building of ports and transport networks across Asia to Africa, a plan aimed at countering China's Belt and Road plan. The Japanese proposal will be significant for India. Building cross-border infrastructure with friendly

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[54] https://www.theatlantic.com/international/archive/2017/10/china-belt-and-road/542667/
[55] http://www.smh.com.au/world/chinas-new-silk-road-the-one-belt-one-road-explained-20170512-gw3ntx.html
[56] http://www.reuters.com/article/us-china-congress-silkroad/pressure-on-as-xis-belt-and-road-enshrined-in-chinese-party-charter-idUSKBN1CT1IW?il=0
[57] http://www.scmp.com/week-asia/geopolitics/article/2117351/what-do-you-get-if-you-cross-pakistans-game-thrones-and-chinas
[58] http://www.independent.co.uk/news/world/asia/india-china-military-bhutan-armed-conflict-doklam-plateau-himalayas-troops-withdraw-a7893866.html
[59] https://timesofindia.indiatimes.com/world/china/concern-for-india-as-chinas-communist-party-includes-belt-and-road-in-constitution/articleshow/61207872.cms
[60] http://www.atimes.com/new-cold-war-china-india/
[61] http://www.thehindu.com/news/national/dhaka-defends-beijings-belt-and-road-project/article19803372.ece
[62] https://economictimes.indiatimes.com/news/defence/rex-tillerson-starts-talks-in-india-dominated-by-china/articleshow/61216439.cms

countries could help New Delhi blunt the Chinese initiative which it sees as an influence-securing project that also runs through Pakistan-Occupied Kashmir.[63]

India in particular has demonstrated major concerns[64] about the BRI and Australia has also distanced itself from the initiative. Earlier in 2017, the Australian heads of the immigration and defence departments were amongst those that advised the Australian government not to join BRI.[65] By funding an infrastructure project that has heavy Chinese involvement, Australia may inadvertently become effectively part of the initiative, especially if the destination for Carmichael coal turns out to be a Chinese-built coal-fired power station within the Belt and Road program in Pakistan.

The Belt & Road Initiative is at the centre of China's foreign policy, and having India onside is a key objective of President Xi Jinping.[66]

# Risk of Reputational Damage key for NAIF

The China's Belt and Road Initiative (BRI) clearly reflects China's growing global financial and political ledership, involving a re-ordering of the very western centric state of affairs evident in previous decades. However, as was evident with the statements by the Japanese Prime Minister in October 2017, this is giving rise to some political push back by America, Japan and India. This creates some reputational damage risk should the Australian government provide a $1bn subsidised funding for an infrastructure project seen to be a brought into the Belt and Road program orbit.

In addition to India, the U.S. has also raised significant concerns about BRI. [67] [68] This pushback by the increasingly isolationist American Federal Government to BRI may require the Australian government to reassess funding of a globally significant greenfield thermal coal project via NAIF due to a clause in the NAIF Investment Mandate which states that it:

> ***"must not act in a way that is likely to cause damage to the commonwealth government's reputation, or that of a relevant state or territory government".***

It has previously been suggested by the former head of the Clean Energy Finance Corporation (which has a clause in its own mandate that was essentially the same), that the reputation clause makes it impossible for NAIF to lend to the Carmichael projects[69]. Reputational risks noted at that time included the fact that the project was not aligned with Australia's Paris carbon emission commitments and the fact that the proponent was linked with environmental and corruption investigations, some of which remained unresolved.

If Carmichael effectively becomes part of China's Belt and Road Initiative, the suspicion with which the initiative is viewed by some of Australia's key allies would only add to the risk of reputational damage.

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63 http://www.hindustantimes.com/india-news/japan-to-propose-obor-like-project-with-india-us-to-counter-china/story-A3jsZBRAuQ5yM8pEPYEDPP.html
64 http://indiatoday.intoday.in/story/with-obor-in-china-constitution-rift-with-india-could-widen/1/1074063.html
65 http://www.abc.net.au/news/2017-10-22/australian-concerns-over-beijing-one-belt-one-road-trade-bid/9074602
66 http://www.wionews.com/world/india-welcome-to-join-belt-and-road-initiative-says-china-22994
67 http://www.reuters.com/article/us-tillerson-asia/tillerson-to-meet-indias-modi-amid-chinas-rising-influence-in-asia-idUSKBN1CU0IE?il=0
68 https://thediplomat.com/2017/10/is-the-trump-administration-about-to-take-on-chinas-belt-and-road-initiative/
69 https://www.theguardian.com/environment/2017/jul/06/loan-to-adani-by-infrastructure-fund-could-be-unlawful-says-former-clean-energy-head

# China does not need Carmichael coal

The possibility of Chinese involvement in the Carmichael project leading to the coal produced by Adani heading to China seems unlikely. After a 40% decline over 2015 and 2016, China's coal imports has recovered somewhat in 2017 following a government order to reduce the production of China's domestic coal mines, this is likely to prove temporary.

Thermal seaborne coal prices have been higher since Chinese domestic production curtailment required increased imports. Weather and strike action issues in Australia have also played a role in pushing prices higher. However, in September 2017 China's domestic production was 7.6% higher than the same month in the prior year after relaxed production limitations allowed domestic producers to ramp up output and take advantage of the higher prices.[70] For the first nine months of 2017, China's domestic production is 5.7% higher than for the same period in 2016. Medium term, China's need for coal imports looks set to continue to decline.

In the longer term, this trend looks like it will continue as China is already reorganizing its electricity system to be less dependent on coal. August 2017 saw the announcement that China's top coal miner was to be merged with one of the nation's 'big five' power utilities. The absorption of China Guodian Corp by miner and coal-fired power plant operator Shenhua Group Corp creates the world's largest power company by installed capacity, around 225GW. By absorbing China Guodian, Shenhua is no longer so reliant on coal as Guodian brings significant clean energy assets with it.

Further mergers involving the large power generators are expected. China Huaneng Group is reported to be in talks with State Power Investment Corporation (SPIC)[71]. In addition, SPIC is to sell seven Chinese clean energy companies to its indirectly held HK listed subsidiary China Power International Development.[72] Like the Shenhua-Guodian merger, this can be seen as a strategic move to give state-owned power utilities a more diversified asset mix with a growing renewables portfolio. The role of coal is being de-emphasized, and utility balance sheets improved, allowing capital redeployment towards renewable energy infrastructure.

There seems to be little strategic need to secure Australian thermal coal sources for import to back to China as the nation prepares its energy system for a world powered increasingly with Chinese-manufactured renewable energy technology[73].

This comes as South Korea has announced a US$40bn new investment in 33GW of renewable energy in October 2017, a clear shift away from excessive pollution from coal power.[74]

[70] https://energy.economictimes.indiatimes.com/news/coal/china-september-coal-output-rises-as-miners-return-from-safety-checks/61142541
[71] https://www.bloomberg.com/news/articles/2017-08-28/china-approves-guodian-shenhua-group-to-merge
[72] https://theasset.com/belt-road-online/33584/china-power-international-development-acquires-renewable-energy-assets--news-961-o
[73] http://ieefa.org/ieefa-report-china-set-dominate- global-renewable-energy-boom-expands-lead-u-s/
[74] https://asia.nikkei.com/Politics-Economy/Policy-Politics/South-Korea-looks-to-turbocharge-renewable-power

# Annexure I: Imported Coal at US$129/t Does Nothing to Solve Energy Poverty in Pakistan

CMEC's involvement with the Carmichael Rail project may hint at a potential alternative destination for Carmichael coal; Pakistan. This is an alternative with the potential to provoke considerable controversy.

Minister for North Australia Senator Matt Canavan disingenuously cites that the Carmichael coal proposal would help protect the Great Barrier Reef from climate change, in that the coal quality of Carmichael is better than domestic Indian coal supplies. IEEFA would note that the Carmichael coal mine is an export coalmine targeting coastal import coal fired power plants. Carmichael seeks to displace existing imported thermal coal in India, not domestic coal. IEEFA mentions this because Carmichael is worse quality coal that the current imported coal used in India sourced from Indonesia and South Africa.

Senator Canavan has also cited his ambition to help solve energy poverty for a hundred million of people in India, using this to justify the NAIF making a $1bn subsidy available to the Adani Group's rail proposal, not withstanding the railway is ultimately owned by private family entities spanning numerous tax havens (Singapore, Cayman Islands and the British Virgin Islands).

Should the sale of the financially distressed Adani Mundra power plant proceed for the proposed Rs1, IEEFA would expect the State government of Gujarat would then avail itself of lower cost domestic Indian coal (new domestic coal linkages are available for state governments, but not for private industry). As such, the logic of building Carmichael to supply expensive imported coal to Adani Power's import power plant in India is no longer valid.

IEEFA has therefore been examining alternative end markets for the proposed Carmichael coal. Pakistan is one such destination.

Our analysis of existing imported coal supply contracts shows this to be anything but a source of cheap new electricity supply for the poor of Pakistan. Even with heavily subsidised Chinese SOE bank and insurance funding, the import coal supply terms evident in the tariff detailed in the 11 August 2016 contract of the 900MW Datang Pakistan Karachi Power Generation Ltd references a **delivered cost of thermal imported coal of US$129/t**, including US$20/t of ocean freight, US$9.46/t of port unloading costs and US$10/t of "other" costs (unexplained – but corruption in coal is a known risk?). This results in a government endorsed contract to supply import coal fired power at US$80/MWh.[75] This is double the price that India can deliver new solar and wind electricity. So Carmichael coal would be anything but a low cost source of power for the poor of Pakistan.[76]

[75] http://www.nepra.org.pk/Tariff/IPPs/003%20Coal/Datang%20Pakistan%20Karachi%20Power%20Generation%20(Pvt.)%20Limited/TRF-364%20DPKPG%20Approval%20Datang%20Pak%20Karachi%20Power%2011-08-2016%2011068-11070.PDF

[76] http://www.nepra.org.pk/Licences/Generation/other%20IPPs/Datang%20Pakistan%20Karachi%20Power%20Generation%20(Private)%20Limited%20(DPKPG)/LAG-353%20GL%20DATANG%20PAKISTAN%2023-05-2017.pdf

# Annexure II: Chinese Built Coal Power Projects in Pakistan

## Port Qasim coal port

The Pakistan International Bulk Terminal[77] opened in July 2017, built at a total cost of US$285m.[78] It has capacity to off-load up to 12Mtpa of Coal and 4Mtpa of Cement & Clinker. The World Bank provided 11% of the equity (total equity US$148m) and 20% of the debt, OPEC Fund for International Development provided a further 19% of the debt (total debt US$135m).

## Datang Pakistan Karachi Power Generation

K-Electric Limited (KEL) is a vertically integrated power utility providing electricity to Karachi.[79] It has over 2.2 GW of installed generation capacity and PPAs for a further 1,057MW.

KEL is working on a proposed 700MW (350 x 2) ultra-supercritical coal power station in Port Qasim (Near Karachi). The project is being developed in partnership with Chinese companies. A binding Joint Development Agreement (JDA) was signed with China Datang Overseas Investment Co. Ltd (CDOIC) and China Machinery Engineering Corporation (CMEC) in September 2015.[80] Under this JDA, CDTO will take a 51% equity share in the project, CMEC will take 25% and KEL will take the remaining 24% equity.[81] The project will be developed by a special purpose company: Datang Pakistan Karachi Power Generation Limited. The project will reportedly cost US$967m comprising 30% equity and 70% debt.[82] According to the project's generation licence application document, China Development Bank had issued a term sheet of "around US$750m" to the sponsors in 2016. Sinosure (China Export and Credit Insurance Corporation) has also issued a preliminary letter of intent but the proponents were concerned that their timelines could be too tight to wait for Sinosure's final approval. In parallel a consortium of local Pakistani banks were also being approached.

The project appears to be proceeding with a tender for an EPC contractor for the coal unloading jetting advertised in October 2017.[83] KEL state that financial close on the project is expected during FY2018[84] and generation is expected by the start of calendar year 2022.

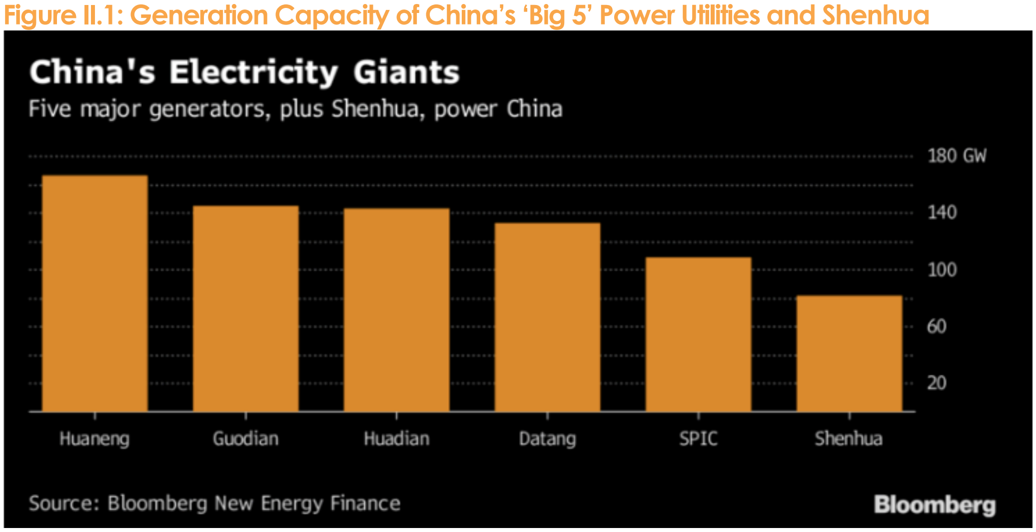
The proposal plans run on imported thermal coal directly off-loaded from ships at a jetty next to the power station "as there is no firm commitment for the availability of the

77 http://www.pibt.com.pk/index.aspx
78 https://www.dawn.com/news/1363785
79 K-Electric Limited (2017) Who we are webpage https://www.ke.com.pk/our-company/who-we-are/
80 K-Electric Limited (2015) Material Information – Signing of binding JDA for the development of 700 MW (2x350MW) coal-fired power project at Port Qasim, 11 September 2015 https://www.ke.com.pk/download/Investor-Information/Material-Information-E28093-Signing-of-binding-JDA.pdf
81 Generation License for Datang Pakistan Karachi Power Generation (Private) Limited (DPKPG) http://www.nepra.org.pk/Licences/Generation/other%20IPPs/Datang%20Pakistan%20Karachi%20Power%20Generation%20(Private)%20Limited%20(DPKPG)/LAG-353%20GL%20DATANG%20PAKISTAN%2023-05-2017.pdf
82 https://tribune.com.pk/story/1168767/nepra-accepts-request-power-generation-licence-sought-700mw-plant/
83 http://www.tendersinfo.com/freetenderdetails?tiref=41955870
84 K-Electric Limited (2017) Our Business- Generation, https://www.ke.com.pk/our-business/generation/

indigenous fossil fuels including natural gas and local coal."[85] The EIS states the plant will run on coal imported from Indonesia, South Africa or Australia, with expected calorific value of 20.14 MJ/kg.[86] It also states that China Datang Overseas Investment Company Limited will supply the coal.

The generation licence application states "CDTO, the majority sponsor of this Project, having 80% of its power generation portfolio (120,000 MW) in China on coal, also has vast experience in the supply of coal both domestically in China and internationally. CDTO has its own strategic coal mining interests in Indonesia, and is already supplying coal to most of its plants across the region and in China. Therefore, the Sponsors agreed to use CDTO's vast experience in coal mining and supply and take over as coal supplier for this Project as well. This not only gives direct access to mines in Indonesia, it also protects the long term supply of fuel for this large scale project."[87]

**Figure II.1: Generation Capacity of China's 'Big 5' Power Utilities and Shenhua**




Source: Bloomberg New Energy Finance

The project had an upfront coal tariff of US$80/MWh approved by the Pakistani National Electric Power Regulatory Authority in 2016[88] - refer Annexure I.

In 2016, it was announced that Shanghai Electric Power had entered into an agreement to acquire a 66.4% stake in KEL for US$1.77billion.[89] Closure for the deal has been protracted.[90]

China Datang Overseas Investment Co. proposed a US$500m acquisition of a coal mine in Australia but the acquisition did not proceed after due diligence.[91] (Date unknown)

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[85] Generation Licence for Datang Pakistan Karachi Power Generation (Private) Limited (DPKPG) http://www.nepra.org.pk/Licences/Generation/other%20IPPs/Datang%20Pakistan%20Karachi%20Power%20Generation%20(Private)%20Limited%20(DPKPG)/LAG-353%20GL%20DATANG%20PAKISTAN%2023-05-2017.pdf

[86] http://shehri.org/eia-reports/DATANG%20EIA%20REPORT.pdf

[87] Generation Licence Application for Datang Pakistan Karachi Power Generation (Private) Limited (DPKPG) http://www.nepra.org.pk/Licences/Licence%20Application/2016/DPKPG%20Generation%20License%20Appliation.pdf

[88] http://www.nepra.org.pk/Tariff/IPPs/003%20Coal/Datang%20Pakistan%20Karachi%20Power%20Generation%20(Pvt.)%20Limited/TRF-364%20DPKPG%20Approval%20Datang%20Pak%20Karachi%20Power%2011-08-2016%2011068-11070.PDF

[89] https://www.dawn.com/news/1293340

[90] https://tribune.com.pk/story/1518859/defence-ministry-clears-sale-k-electric-chinese-firm/

# Pakistan Port Qasim Power Project

The power station will consist of two 660MW supercritical units delivering a design capacity of 1,320MW of power.[92] The project was granted an upfront coal tariff in 2015.[93]

It is designed to be fuelled by imported sub-bituminous coal imported via a private jetty adjacent to the power station. The application documents associated with the project list Indonesia, South Africa and Australia as possible coal source countries but the coal specification presented in the documents clearly matches Indonesian coal. Coal supplied by Apex Dragon Holdings Limited.[94]

The project is collaboration between by Sinohydro Resources Ltd[95] (SHR), a subsidiary of Power China (Power Construction Corporation of China)[96] and Al Mirqab Group (AMG) a subsidiary of QInvest, Qatar. SHR and AMG have established a joint venture with the shareholding of 51% and 49% respectively. SHR is responsible for the project implementation and will conduct financing from Chinese financial institutions

The project reported cost approximately US $2.085 billion. The equity/debt ratio of the project was reportedly 25%:75%. The Import-Export Bank of China (China EXIM Bank) is reported to have provided the debt finance.[97]

The power station is due to be fully operational by March 2018[98] or late 2017[99] depending on differing media reports.

# Hubco new 1320 MW coal power station

In District Hub, Baluchistan, a 1,320MW (2X660MW) supercritical coal-fired power station began construction in March 2017.[100] It is a project of China Power Hub Generation Company (Pvt.) Limited (CPHGC) a joint venture of China Power International Holdings Limited (CPIH) with Pakistan's Hub Power Company (HUBCO) with the partners providing 51% and 49% of the equity respectively.[101]

GE is supplying the supercritical steam turbines, boilers and generators.[102]

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91 https://www.dlapiper.com/~/media/Files/Service%20and%20sector%20recommended/Global%20Services%20for%20Chinese%20Companies%20%20ENG.pdf

92 Generation licence application http://www.nepra.org.pk/Licences/Licence%20Application/2014/Generation%20License%20Application%20of%20Port%20Qasim.pdf

Generation Licence http://www.nepra.org.pk/Licences/Generation/IPP-2002/LAG-273%20PORT%20QASIM%20EPCPL%20GENERATION%20LIC%2003-02-2015%201450-55.PDF

93 Upfront coal tariff http://www.nepra.org.pk/Tariff/IPPs/003%20Coal/Port%20Qasim/TRF-299%20Port%20Qasim%20Upfront%20Coal%20Determination%2013-02-2015%201839-41.PDF

94 I've found companies of this name registered in both Hong Kong and the British Virgin Islands but have not been able to determine its owner with certainty – I assume it's linked to Power China somehow.

95 http://eng.sinohydro.com/

96 en.powerchina.cn

97 https://www.pakistantoday.com.pk/2016/03/07/port-qasim-coal-fired-power-project-cpecs-first-project-witnesses-emphatic-progress-on-ground/

98 https://fp.brecorder.com/2017/08/20170815208909/

99 http://www.cpecinfo.com/cpec-news-detail?id=MzE0Mg

100 https://www.dawn.com/news/1321768

101 Generation licence application http://www.nepra.org.pk/Licences/Licence%20Application/2015/HUBCO%20APPLICATION%20FOR%20GENERATION%20LIC%20OF%201320-MW.PDF

102 http://www.genewsroom.com/press-releases/ge-equips-new-1320-mw-cphgc-power-plant-help-pakistan-meet-growing-energy-needs

It is planned that the plant will run on a blend of 50% Indonesian NAR4700 and 50% South African RB-3. It is proposed that coal will be supplied by Mercuria and Uniper.[103]

# Other projects

There are plans to convert two of the four units at the Bin Qasim oil-fired power station to coal. Apparently the plan has stalled when a proposed power tariff was rejected.[104]

Approximately 100km from Karachi at Keti Bander, another 2x660MW coal power station is proposed. It is planned that this would also run on imported coal. There are also speculative plans for a further six 660MW units at the site that would run on domestically-sources lignite from the Thar coal deposits.[105]

In April 2017 CMEC was awarded the US$282m EPC contract for a project called ThalNova Power Thar, a 330MW mine-mouth lignite coal fired power project in Sindh, Pakistan.[106]

In September 2017 CMEC signed a US$0.52bn contract to build a 1.26GW LNG fired power plant in Punjab, Pakistan.[107]

Despite the political tensions between India on the one side and China and Pakistan on the other, Pakistan was reportedly one of the possible destinations for Carmichael coal reported in a recent press article.[108]

Unrelated to Pakistan, but in October 2017 CEMC and General Electric were reported to be looking to join together to take a combined 60% equity stake in Ncondezi Energy's 300MW coal-fired power development after Shanghai Electric Power dropped out of the Mozambican project earlier in 2017. IJGlobal reports the project has a total cost of approximately $1 billion including construction of a 92km transmission line.

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[103] Generation Licence http://www.nepra.org.pk/Licences/Generation/IPP-2002/China%20Power%20Hub%20Generation%20Company/Generation%20License%20LAG-314%20CPHGCPL%2007-09-2016%2012577-82.PDF

[104] https://www.sourcewatch.org/index.php/Bin_Qasim_power_station

[105] http://www.sindhcoal.gos.pk/Docs/im-for-power-project-at-keti-bandar.pdf

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# Institute for Energy Economics and Financial Analysis

The Institute for Energy Economics and Financial Analysis (IEEFA) conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy and to reduce dependence on coal and other non-renewable energy resources. More can be found at www.ieefa.org.

# About the Authors

## Tim Buckley

Tim Buckley, IEEFA's director of energy finance research, Australasia, has 25 years of financial market experience covering the Australian, Asian and global equity markets from both a buy and sell side perspective. Tim was a top-rated Equity Research Analyst and has covered most sectors of the Australian economy. Tim was a Managing Director, Head of Equity Research at Citigroup for many years, as well as co-Managing Director of Arkx Investment Management P/L, a global listed clean energy investment company that was jointly owned by management and Westpac Banking Group.

## Simon Nicholas

Simon Nicholas is a research analyst with IEEFA in Australia. Simon holds an honours degree from Imperial College, London and is a Fellow of the Institute of Chartered Accountants of England and Wales and has 16 years' experience working within the finance sector in both London and Sydney at ABN Amro, Macquarie Bank and Commonwealth Bank of Australia.

# Important Information