

BRIEFING NOTE

An overview of Adani Enterprises' Corporate Restructuring



**Institute for Energy Economics
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In this briefing paper, the Institute for Energy Economics and Financial Analysis (IEEFA) provides an overview of Adani Enterprise's corporate restructuring, announced at the start of 2015 and approved by the board and shareholders in April 2015.

Adani Enterprises proposes a scheme for the demerger of Adani Ports & SEZ (Adani Ports) and Adani Power Ltd (Adani Power) to simplify the Adani Group structure and to improve the transparency and free float of the three listed entities. The scheme also involves Adani Enterprises listing Adani Transmissions Ltd (Adani Transmissions) on the Bombay Stock Exchange (BSE).

IEEFA views this restructuring as a positive strategic move by Adani Enterprises, which enhances overall shareholder wealth while serving to better align the Adani Group with the new opportunities emerging in the proposed transformation of the Indian electricity sector. IEEFA asserts also that the Adani Enterprises restructure has the unintended consequence of further undermining financing for the proposed Carmichael coal, rail and port project in the Galilee basin, in Queensland, Australia. IEEFA views the Carmichael proposal as [commercially unviable](#) and no longer consistent with the financial interests of the Adani Group, as it restructures to align with changes in Indian energy policy.

Executive Summary

The Adani Group [announced](#) a major restructuring at the start of 2015. Adani Enterprises proposed a scheme of arrangement (Scheme) for the demerger of its two subsidiaries, Adani Ports and Adani Power. The Scheme simplifies the Adani Group structure, improves transparency and lifts the free float¹ in three of the listed entities. The Scheme also involves listing Adani Transmissions on the BSE by an *in specie*² pro-rata distribution to Adani Enterprise shareholders.

The Scheme unwinds Adani Enterprises' shareholdings of Adani Ports and Adani Power and separately lists Adani Transmissions. IEEFA views the increased free float, transparency and simplicity as positives in terms of enhancing the equity market value. Adani Enterprises' collective equity market value has been enhanced by the removal of the "Holding Company" discount.³

The Government of India (GoI) is pursuing a radical transformation of the Indian coal mining, renewable energy, power generation and electricity distribution sectors. Energy Minister Piyush Goyal has set extremely ambitious targets in regard to increasing Indian energy supply, including 175 gigawatts (GW) of additional renewable energy installation by 2022, a US\$50 billion (bn) modernization and expansion of the electricity grid and a possible trebling of India's domestic coal production to 1,500 million tonnes per annum (Mtpa).

The Adani Group strategy is moving to better align with the GoI's new policy. The Adani Group's rapid expansion plans into solar module manufacturing, solar project installation, domestic Indian coal mining and grid transmission are entirely consistent with the GoI electricity transformation.

IEEFA's Indian electricity sector model illustrates that even with strong economic growth, the GoI's plans for a rapid deployment of wind, solar, hydro, gas and nuclear power, plus increased domestic coal production will combine with a significant improvement in energy and grid efficiency to lead to a cessation of Indian thermal coal imports by around 2020. Energy Minister Goyal seeks to build India's energy security through system diversity utilizing domestic resources.

Energy Minister Goyal has also made it clear that India's reliance on thermal coal imports is not sustainable for the economy, nor commercially viable for the coal-fired power plants involved.

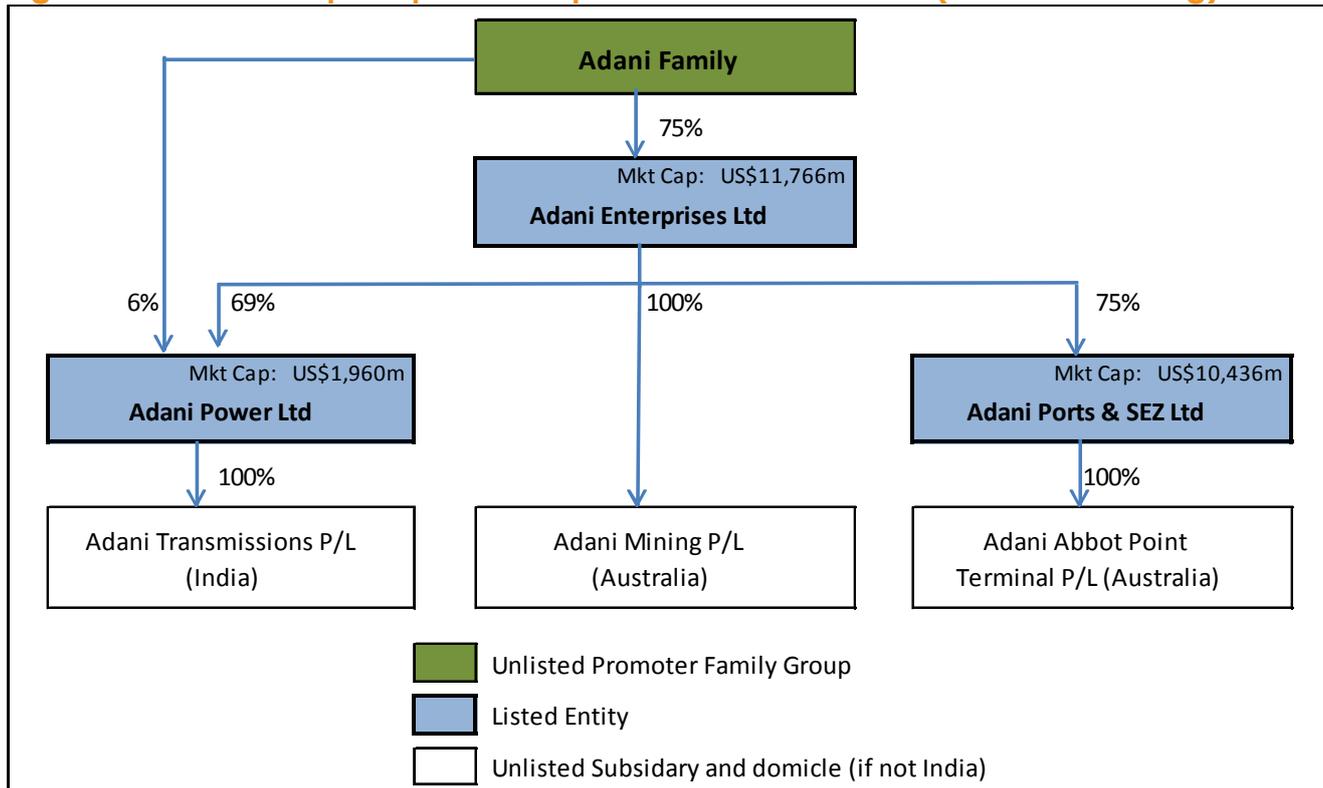
IEEFA views Adani Enterprise's Galilee coal mine, rail and port proposal as a stranded asset, left financially unviable by the structural changes in both the Indian electricity market and the global seaborne thermal coal sector, in a pattern similar to a number of other Indian companies with failed overseas coal expansions since 2010. This Scheme further marginalizes the Carmichael proposal.

¹ "Free Float" is a financial markets term that defines the percentage of a listed company's issued capital that is not held by the controlling shareholders (in India, this group is legally defined as the "Promoters"), in this case, the family of Mr. Gautam Adani.

² "*In specie*" is a financial markets term, Latin for "in its actual form." Adani Enterprises will distribute to all existing shareholders by way of a 'dividend' or 'capital return' all the shares it holds in Adani Ports and Adani Power for 'free;'

³ "Holding Company" discount in the financial markets is valuing the listed, controlling parent entity at a material discount (often cited at between 5-15%) to the implied sum-of-the-parts value of the various subsidiaries and assets owned. This is applied to conglomerates, particularly with multiple listed subsidiaries. This reflects a combination of dis-economies of scale, lack of transparency, excessive head office corporate costs, lack of full control of subsidiary cash flows and the inclusion of unwanted 'assets.' Adani Enterprises is the listed parent, and historically has been valued at a discount to the sum of its equity share of the Adani Ports and Adani Power listed and hence not fully owned subsidiaries.

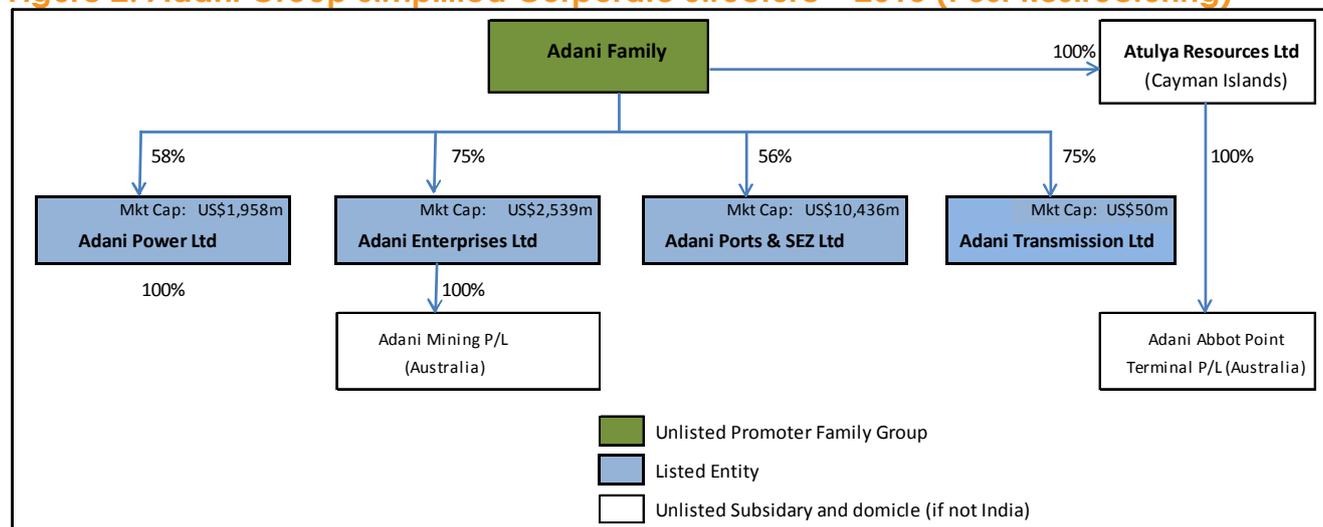
Figure 1: Adani Group Simplified Corporate Structure – 2015 (Pre Restructuring)



Source: Adani Enterprises 2014 Annual Report, Adani Restructuring notice to BSE (30/1/15), IEEFA estimates.

Note: Only selected major subsidiaries are presented in this simplified corporate structure. Market capitalization of equity calculations are as at 30 April, 2015; for more detail please refer Figures 6 & 7.

Figure 2: Adani Group Simplified Corporate Structure – 2015 (Post Restructuring)



Source: Adani Enterprises 2014 Annual Report, Adani Restructuring notice to BSE (30/1/15), IEEFA estimates

Note: Adani Enterprises shareholders voted 100% in favor of this Scheme on April 20, 2015. The Scheme is effective as of April 1, 2015, but completion is not due till the end of 2015.⁴

⁴ http://www.bseindia.com/stockinfo/AnnPdfOpen.aspx?Pname=Adani_Enterprises_Ltd_200415.pdf

Section 1 - The Indian Electricity Sector Transition

Under the leadership of Prime Minister Narendra Modi, the GoI is looking to implement a transformation of India's electricity sector. This is driven by a need to both reform the currently crippled finances of India's power generation and electricity distribution sectors. If effective, the transformation program would reduce the financial burden on the electricity sector and ultimately all Indian consumers. However, the program must overcome a history of bureaucratic inertia that has caused massive underperformance in the domestic coal mining and rail freight industries, plus excessive financial leverage and largely unfunded electricity system subsidies.

IEEFA would summarize the objectives as aiming to: sustainably deliver significantly higher electricity supply to all of India in order to facilitate a period of sustained high economic growth (targeted at 7-8% pa); improve grid efficiency significantly while also resolving the loss-making profile of most Indian power utilities; lift infrastructure investment, creating higher-value jobs; extend electricity to 400 million Indians now living off the grid; and to rapidly diversify the electricity system away from coal-based power. The ambitions underpin a long-term economic growth transition strategy for India that builds in a lower-carbon, less pollution-intensive development.

India's Energy Minister Piyush Goyal is leading this reform and transformation. It involves a number of factors, including;

1. A tenfold lift in solar installation rates to 100GW by 2022, a fivefold increase to 60GW of new wind farms, 10GW of biomass and 5GW of small scale, run-of-river hydro— a total of 175GW additional renewable energy installations, requiring an investment of well over US\$200bn.
2. Opening up access to international debt and equity markets to assist in the funding of solar and potentially wind projects, with a proposal to price power purchase agreements (PPAs) in U.S. dollars to access low-cost, long-duration loans and undertake centralized currency hedging, potentially halving the rupee cost of debt.
3. A US\$50bn investment to upgrade the capacity and efficiency of the electricity transmission and distribution grid, and to significantly reduce the 23-25% transmission and distribution loss rate and to drive a 6% energy efficiency saving by the end of 2015 and reduce the frequency of blackouts.
4. A target to double Coal India Ltd's production output to 1,000Mtpa by 2019, with a focus on greater integration and co-ordination with India Railways to reduce logistical bottlenecks.
5. A tender process for 204 coal deposits that commenced in February 2015, aimed at encouraging private industry to vertically integrate their fuel supply needs for industry and power generation, with a target of expanding private domestic coal mining capacity to up to 500Mtpa.
6. Reducing railway inefficiencies and aligning coal mine-mouth power plants to reduce coal transportation distances.
7. Lifting utilization rates of existing power plants to reduce the need for more capacity.
8. Phasing out old, inefficient coal-fired power capacity and moving to a position where any new coal-fired power capacity installed is of the latest, highest-efficiency standards.
9. Re-evaluating the merits of pursuing the now stalled Ultra Mega Power Project (UMPP) plan.
10. Pursuing an accelerated distributed energy solution for the large portion of India that is off-grid.

Reduced reliance on thermal coal imports is a commercial necessity in terms of the low wholesale price of electricity in India. Reduced import reliance also avoids the negative

implications of widening the current account deficit and adding to devaluation pressures on the Indian currency.

Given Prime Minister Modi's focus on growing GDP by a sustained 7-8% pa, IEEFA views the Gol's announcements as signaling a wave of ambitious reforms that will fundamentally restructure the failing Indian coal mining, power generation and electricity sectors.

However, any growth plan predicated on more coal-fired power generation will inevitably cause a rapid escalation of air and water pollution and will meet continued community resistance to relocations and loss of traditional farmlands and forests.

The current near-crippled state of the electricity market is demonstrated by the inability to deliver reliable and consistent power to Indian households and industry, plus the reliance on unfunded electricity subsidies for a large part of the Indian market. The generally state-owned power utilities lack commercial viability, given excessive gearing and ongoing operating losses.

A key outcome of Goyal's proposed transformation is that India should no longer be reliant on imported thermal coal—a crucial requirement to prevent the buildup of excessive electricity system inflation and variability that will stem from a reliance on [imports](#). Energy Minister Goyal has repeatedly stated this objective, even if the global coal sector is yet to accept an India free of imported thermal coal free as an achievable outcome.

A greater reliance on energy efficiency and improved grid efficiency, plus plans to install 175GW of wind, solar, run-of-river hydro and biomass in the next eight years, combined with an acceleration in public and private domestic coal mining in India will all serve to facilitate a double transition; firstly away from imported coal, and then a diversification away from coal in its entirety, longer term.

This last assumption may seem contradictory. However, in IEEFA's view, any plan to treble domestic coal production would, almost by definition, see air and water pollution treble and is likely to exacerbate social unrest. According to the World Health Organization, India already has 13 of the 20 [most polluted cities](#) in the world, many far worse than China. Like China, the Gol will need to act to remedy air and water pollution. In April 2015 New Delhi started to introduce regulatory changes to deal with pollution, including [closing](#) old coal-fired power plants—a strategy similar to that of China.

We are optimistic that as momentum builds, the Indian electricity market will rapidly pivot toward a significantly higher reliance on renewable energy and energy efficiency. Our confidence is predicated on the fact that once built, renewable energy plants and energy efficiency initiatives have an almost zero marginal cost of production, hence immediately work to undermine coal-fired power plants that have a high marginal cost of production. Furthermore, Minister Goyal's plan to access global [debt capital markets](#) will significantly lower the cost of renewables in India and accelerate the transition.

As this technology revolution rapidly develops, a natural result is that many new 40+-year life thermal power plants will prove to be stranded assets in the making, unable to generate an economic return. India is likely to run into the same problem that Europe has faced over the last decade, with the major utilities like RWE and E.ON seeing unprecedented shareholder wealth destruction. The same is unexpectedly hitting China's coal-fired power sector now, with 2014 seeing record low coal power utilization rates of 53.7%, undermining [profitability](#) of even the newest coal-fired power plants.

Section 1.1 - A target for 175GW of new renewable energy by 2022

Finance Minister Arun Jaitley in the 2015/16 Indian budget referenced a tenfold lift in solar installation rates to 100GW by 2022, a fivefold increase to 60GW of new wind farms, 10GW of biomass and 5GW of small scale, run-of-river hydro.⁵ This is 175GW of additional renewable energy installations in total, requiring an investment of more than US\$200bn and representing a fivefold increase on the current installed total of 34GW of renewable energy (excluding large scale-hydro) — Figure 3.

Figure 3: India's Generating Capacity: Breakdown by Fuel Type (GW)

Capacity (GW)	Mar'1997	Mar'2002	Mar'2007	Mar'2012	Feb'2015	Feb'2015
Coal-fired	54.2	62.1	71.1	112.0	158.5	60.1%
Gas-fired	6.6	11.1	13.7	18.4	23.0	8.7%
Diesel	0.3	1.1	1.2	1.2	1.2	0.5%
Hydro	21.7	26.1	36.4	42.6	40.9	15.5%
Small hydro				3.4	3.8	1.4%
Nuclear	2.2	2.7	3.9	4.8	5.8	2.2%
Wind	0.4	0.8	4.1	16.5	22.5	8.5%
Solar	0.0	0.0	0.0	0.6	4.0	1.5%
Biomass & SMP	0.5	0.9	1.9	3.8	4.1	1.6%
Total	85.9	104.9	132.3	203.3	263.7	100.0%

Source: Central Electricity Authority, India, Feb'2015.

The 2015/16 GoI budget also doubles the Clean Energy Cess levied on coal from Rs100 to Rs200 per tonne, (following a doubling of this coal tax in the 2014/15 budget) to acknowledge coal's externalities and encourage the diversification away from coal-fired power.

This focus on renewables and its rationale was reiterated in March 2015 by [Minister Goyal](#):

"We have planned a 5X growth in renewable energy in the next five years. It is an article of faith for Prime Minister Narendra Modi. India is much more conscious today and all of us recognize that we have to leave behind a cleaner and greener country as we move forward."

Solar installations – 100GW by 2022

With a cumulative installed solar projects base of just 3-4GW at the end of 2014, the suggestion that a tenfold increase in annual installs to 10GW has met with significant skepticism even by key proponents for solar.⁶ However, the GoI's solar strategy is aiming to attract firms like SunEdison Inc. U.S. which in a single transaction signed a [memorandum of understanding](#) with the state government of Karnataka to develop 5GW of solar energy over the next five years. U.S. President Obama has offered US\$4bn of funding [support](#), and French President Hollande has [offered](#) €2bn.

IEEFA notes how China stepped up solar installs from 2GW in 2011 to 5GW in 2012 to 13GW in 2013, repeated that feat again in 2014 and with a new even higher national target of 17.8GW for [2015](#), with 5GW installed in 1Q2015 [alone](#).

Section 1.2 - Improving transmission grid capacity and efficiency

Energy Minister Goyal has outlined a US\$50bn investment program to upgrade the capacity and efficiency of the Indian electricity transmission and distribution grid. A key part of the upgrade is to permanently address the crippling loss rates of 23-25% on transmission, distribution and technical issues.⁷ Simply put, this means electricity generators have to produce four units of electricity for every three units they sell to their retail and industrial customers. A loss rate of this magnitude is financial suicide, particularly when coupled with subsidized retail electricity prices.

⁵ <http://indiabudget.nic.in/bspeecha.asp>

⁶ <http://www.bridgetoindia.com/blog/is-indias-national-solar-mission-becoming-even-more-ambitious/>

⁷ <http://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?page=3>

As a measure of the extent of this problem, Minister Goyal announced in March 2015 that distribution losses have incurred a staggering Rs 69,108 crore (US\$11bn) [net after tax loss to power utilities in 2012-13](#).

A more integrated national grid will also facilitate a greater [penetration](#) of renewable energy.

Section 1.3 - A target to double Coal India Ltd's production output to 1,000Mtpa by 2019

Energy Minister Goyal has set Coal India Ltd a target of 1,000Mtpa production by 2019, doubling [its 2014/15 production](#). This requires a compound annual growth rate of over 15%, an unrealistically optimistic target when put in perspective of the 1.5% compound annual growth rate (CAGR) of volumes seen in the last five years. In contrast, Coal India Ltd reported in April 2015 that coal production in 2014/15 increased by 6.9% year-on-year to 494Mt.⁸ Coal India Ltd then surprised again, [reporting](#) April 2015 monthly production of 41.5Mt, up a record 10.7% year-on-year.

Minister Goyal has subsequently articulated a target to double, then even [treble](#) India's domestic coal production to 1,500Mtpa. The coal block tenders that commenced in February 2015 have seen aggressive bidding and strong demand from numerous private companies, in both the industrial and coal-fired power sectors. The tenders will create a huge inflow for state government budgets; the auctions of the first 32 mines alone having [yielded Rs 2 lakh crore](#) (US\$32bn) payable over the next 30 years.

These auctions could see a lift in the medium term to some 200Mtpa from the acceleration of private development of coalmines that are currently producing at a rate 40-50Mtpa. It is worth noting again that this expansion in domestic coal production is likely to be highly contested by impacted communities and environmental groups in India.

Section 1.4 - Re-evaluating the rapid expansion of coal-fired power plants

India has experienced a coal- and gas-fired power plant [installation boom](#), with 46GW installed in from 2012 to 2015. However, many existing fully commissioned Indian coal-fired power plants are operating well below designed capacity and/or losing money due to excessive financial leverage. Despite excess demand for electricity, underutilization reflects an inability to source domestic coal, and indicates that imported coal is either too expensive to justify relative to the wholesale tariff of the plant and/or impractical to transport due to rail bottlenecks.

Since 2010, 79GW of new coal-fired capacity has been completed in India, taking the country's total installed coal-fired power plant capacity to 158GW. However, for every coal fired power plant that has been completed in India since mid-2012, six projects have been shelved or cancelled.⁹ This is no better illustrated by Reliance Power's [cancellation](#) of its proposed 4GW UMPP at Tilaiya in Jharkhand in April 2015, citing five years of land acquisition delays.

⁸ <https://www.coalindia.in/Manage/ViewNews.aspx>

⁹ "Boom and Bust: Tracking the global coal plant pipeline", March 2015, Ted Nace et al. http://action.sierraclub.org/site/DocServer/Coal_Tracker_report_final_3-9-15.pdf?docID=17381

Section 1.5 - India to potentially cease thermal coal imports into India within 2-3 years

India is currently the third largest thermal coal market in the world. In November 2014, Energy Minister Goyal caught the global coal industry by surprise with his announcement that:

"Possibly in the next two or three years we should be able to [stop](#) imports of thermal coal."

Energy Minister Goyal followed this statement in February 2015, with this:

"[At no point of time do I feel that imported coal will work](#) except at two or three plants that are in the coastal areas. While we had this major power requirement and shortage of coal, I did a study and found that there were very few plants dependent on imported coal or were situated on the coast."

India's power plants reliant on imported coal are loss-making

Tata Power is the prime case of note. One of the top two private electricity producers in India, Tata Power built a US\$4bn, 4.0GW UMPP at Mundra, Gujarat, with the aim of relying on what at the time were low-cost Indonesian thermal coal imports. In 2011 the Indonesian government changed coal export rules to ensure Indonesia received commercial prices for coal, and since then Tata Power has been loss-making. Despite a court-sanctioned PPA uplift in the 2014 electricity tariff for [Tata Power](#), this project is commercially unviable.

Similar to Tata Power, Adani Power continues to report a net loss after financing in its quarterly results, where its 4.6GW Mundra power plant (half the group's current total installed power capacity) is also materially reliant on imported coal.

Likewise, despite being designed and financed as an import-coal-fired power unit, Lanco Infratech's 1,200MW Udupi plant has a long-term PPA that is insufficient to cover its operating and financing costs; as a result, it too is loss-making.¹⁰ Adani Power is in the process of acquiring this business.

In March 2015 Minister Goyal questioned the merit of putting any new import-coal-based ultra mega power project (UMPP) up for tender, given the lack of [commercial value](#).

Strategic shift from imported coal

Energy Minister Goyal's stated goal of ceasing thermal coal imports represents a major strategic change in direction for India's electricity sector, IEEFA estimates over the last five years that imports doubled their share of India's thermal coal supply from 10% to more than 20% in calendar year 2014.

Given the consistent failure of Coal India Ltd to deliver on its production targets, until 2014 the Government of India was actively encouraging its power firms to seek overseas coal-mining investments. A number of Indian ventures that have expanded into international coal markets have been consistently unsuccessful, however, with delays, ongoing losses and [missed targets](#). The list includes:

1. International Coal Ventures Private Limited (ICVL), set up by the Gol in 2009 as a joint venture to acquire international coking, thermal coal deposits and mines as "a step towards security of supply."¹¹ The ICVL has been consistently unsuccessful in implementing this objective.

¹⁰ Lanco Infratech, Interim Result to September 2014, 14 November 2014.

¹¹ ICVL is owned by Steel Authority of India (SAIL), Coal India Ltd (CIL), Rashtriya Ispat Nigam Ltd (RINL), National Mineral Development Corp. and National Thermal Coal Corp (NTPC); refer <http://icvl.in/aboutus.php?tag=company-aboutus>

2. Tata Steel, a 35% shareholder alongside Rio Tinto Coal Mozambique in the Benga coal mine, initially expected to export 4.5Mtpa of coal. In July 2014 ICVL paid just US\$50m for Rio Tinto's 65% share of Benga, with Rio Tinto writing off close to [US\\$4bn](#) on this failed project. The Benga mine is [reported](#) to be losing US\$7.5m per month.
3. Coal India Ltd's own move in the Tete Province of Mozambique in 2009 has consistently failed to deliver on expectations, to the point where the company recently announced [the project didn't actually have coal](#).
4. Tata Power acquired a 26% stake in PT Baramulti Suksessarana (BSSR) in Indonesia in November 2012, securing a 10Mtpa [coal supply contract](#) for export to India. BSSR listed in Indonesia in November 2012 at Rs1, 950 per share, but the stock is trading 20% below this two and a half years later.
5. Essar Group's 2010 US\$600m [Trinity Coal Corp. \(US\) acquisition](#) went into Chapter 11 in 2013.
6. GVK's 2011 US\$1.26bn acquisition of Hancock Prospecting P/L's Galilee thermal coal proposal is [stalled](#) prior to financial close and has not completed the initial purchase [transaction](#).
7. Adani Enterprises has invested over A\$1bn since 2011 in the Carmichael coal and rail proposal for the Galilee basin, and four years on financial close [remains elusive](#).
8. Lanco Infratech's 2011 A\$740m acquisition of Griffin Coal is [losing money](#), and recently had its 15Mtpa coal export proposal revoked.
9. Gujarat NRE's failed ownership of ASX listed Wollongong Coal Pty Ltd (previously named Gujarat NRE Coking Coal), [bought out](#) by another Indian firm, Jindal Steel and Power, in 2013, who has reported a similar [lack](#) of progress.

Minister Goyal's strategic shift away from imported coal is economically sound in that it reduces India's exchange rate risk from an over-reliance on fossil fuel imports, a threat to energy security.

Should India be able to deliver on its 175GW renewable-energy target, reduce transmission and distribution losses, enhance energy efficiency and double domestic coal production, it would be very feasible for India's thermal coal imports to decline or cease through the end of this decade.

IEEFA thinks India's thermal coal imports have the potential to peak in 2015/16 and cease entirely around 2020. While this is an outlying forecast, the Indian coal-fired power industry is increasingly starting to factor this scenario into its core plans. IEEFA references the following statement as a clear sign that Minister Goyal's plans are gaining wider acceptance:

"Our aim is to have zero import of coal, and manage with the coal from Coal India sources or our own mines. You can say in the next five years."

- National Thermal Power Corp. Managing Director Arup Roy Choudhury, April 2015

Energy Minister Goyal on 16 March 2015 [flagged](#) that the rate of change will take the market by surprise, and that with the rapid improvement in Coal India Ltd's delivery of coal, and the economic recovery still being relatively patchy, India is moving from a structural deficit in electricity over the last decade to a possible position of surplus:

"The demand (for power) is being met. I'm now concerned that with this rate of growth, I could end up with surplus coal and surplus power... I don't know what to do with it,"

One recent [report](#) suggested that no major new power purchase agreements for coal-fired power plants had been signed in the last two years. This reflects the combined complexities of the forfeited coal deposits ("Coalgate"), the lack of viable power purchase agreement counterparties (due to Discom's lack of credit worthiness) and slower than expected growth in underlying demand for electricity.

Section 2 - Adani Aligns Structure and Energy Strategy with the Indian Government

The Indian energy sector must deliver an enormous transformation over the next five years if the Modi government is to achieve its many economic goals. For sustained, strong economic growth, the electricity sector must deliver on the order of a fifty percent expansion in net supply by the end of this decade. Many obstacles remain, particularly given India's history of inertia and excessive financial leverage.

A pre-requisite to the required investment is sustained confidence that the Gol is serious about concurrently reforming many aspects of the Indian electricity market. The banking sector remains saddled with significant non-performing loans associated with the companies that have tried to implement the previous Gol's subsidized and floundering electricity sector expansion. Also, public utilities continue to incur multi-billion dollar annual losses from grid losses and largely unfunded subsidies of retail electricity prices.

Having said this, IEEFA considers the signs and substance of policy change overall as promising.

Given that the investment required over the next five years is in the order of the US\$250bn referenced by Energy Minister Goyal, the investment must by necessity rely on international capital as well as continued investment from the leading Indian corporates, both state-owned enterprises like NTPC Ltd, Power Grid Corp and Coal India Ltd, plus the leading private firms of India. Buy-in from major firms like Reliance Power, Tata Group and Adani Enterprises is also key. IEEFA would note that these companies' interests are also leveraged to the successful implementation of the reforms proposed.

Under the leadership of Prime Minister Modi, the outlook for the Indian economy has improved materially. Significantly higher confidence in the equity market and real economy has emerged as retail inflation has halved, allowing for the prospect of further interest rate cuts in 2015. Given that India is the fourth largest importer of oil, the recent halving of oil prices has proven to be a huge boon, significantly improving India's trade balance. In turn, this has reduced foreign exchange rate volatility, and it is no coincidence that the Rupee is one of the few emerging market currencies to have appreciated against the US dollar in 2015. The oil price collapse has provided the Gol a once-in-a-decade opportunity to reduce fossil fuel subsidies in excess of US\$10bn per annum without any inflationary pressures resulting. This has materially helped stabilize the Gol's overall budget deficit. The 50% rally in the equity market since mid-2014 has also provided the opportunity for State Owned Enterprise (SOE) sell-downs and equity raisings to facilitate the banking sector's re-capitalization.

Turning specifically to the Adani Group, the equity market has significantly re-rated Adani Enterprises, since it reached a low point in September 2013 of Rs1.33 per share. The share price has trebled in the last two years, significantly outperforming the 50% gain in the overall Indian stock market (as measured by the S&P BSE SENSEX)—Figure 4. In particular, as the market saw an increased prospect for the election of Narendra Modi's Bharatiya Janata Party, Adani Enterprise's price rallied dramatically into the election, both in absolute terms and relative to the overall market.

Figure 4: Adani Enterprises share price relative to NSE since 2011 (Rs)



Source: Yahoo Finance

The outperformance evident in the first three months of 2015 reflects the equity market's positive endorsement of the announced restricting Scheme. This rerating sees the removal of the "holding company" valuation discount attributed to most conglomerates. Investors have endorsed the Adani Group's move to improve transparency and liquidity, and reduce corporate complexity.

IEEFA considers the Scheme and associated announcements to also reflect the Adani Group's move to better align its overall strategic direction with the new national energy plan of India.

Energy Minister Goyal's move to lift solar sector activity tenfold has been endorsed by Adani Enterprises, which has announced a move into upstream solar module manufacturing and also downstream into solar project development.

Adani Enterprise aims to separately list Adani Transmissions after several years of heavy capital investment. This strategic shift into the electricity distribution sector mirrors Energy Minister Goyal's clear strategic imperative to dramatically enhance the efficiency and scope of the Indian grid.

Adani Enterprises has been bidding in the current Gol coal deposit auctions and so far has [secured](#) one mine proposal, marking Adani's intention to move into domestic Indian coal mining.

Adani Ports have continued to invest heavily in its strongly performing Indian ports operation, undertaking a series of acquisitions and greenfield terminal developments to best position the group to take advantage of the expected acceleration in economic activity across India.

Minister Goyal's plan to cease thermal coal imports does, however, raise significant questions over the strategic rationale of the plan for Adani to invest US\$10bn in its Australian Carmichael coal project in the Galilee. India's Minister has made it clear India can't afford to solve energy poverty using expensive imported coal, and is seeking to increasingly diversify the electricity sector away from coal in total. This raises questions over the probability of Adani Enterprises continuing to pursue this proposal, given the lack of commercial viability and non-bankability.

Section 3 - An Overview of the Adani Restructuring

Section 3.1 - Restructuring

The Adani Group announced a major restructuring at the start of 2015. Adani Enterprises proposed a Scheme for the demerger of Adani Ports and Adani Power, to simplify the Adani Group structure and improve the transparency and free float of three of the listed entities. The Scheme also involves listing Adani Transmissions on the BSE by an *in specie* distribution to Adani Enterprise shareholders.

Section 3.2 - Asset Transfers

As part of the Scheme, the Adani Group is clearing up the corporate structure to fully align with the specific areas of focus for each of the four distinct listed groups. Assets transfers include:

- **40MW Solar:** This Gujarat solar farm will be transferred from Adani Enterprises to Adani Power for an agreed 64m Adani Power shares worth Rs3.2bn (US\$50m) at Rs50ps.
- **Belekeri Port:** This port will be transferred from Adani Enterprises to Adani Ports for 0.9m Adani Ports shares worth Rs276m (US\$4m) at the current share price of Rs307 per share (ps).
- **Adani Transmission (India):** This transmission unit is being transferred from Adani Power to Adani Enterprises in return for new Adani Power shares, prior to its *in specie* distribution to all Adani Enterprise shareholders. Adani Transmissions has over 5,000 circuit km of transmission lines across India. Management reports this unit has an enterprise value of Rs110bn (US\$1.8bn), the transfer of a 90.9% equity stake from Adani Power to Adani Enterprises was done at an agreed equity value of Rs3.2bn (US\$50m) implying a heavy level of financial leverage.

The Scheme has been fixed as effective on April 1, 2015. Completion of the transactions contemplated under the Scheme is scheduled for December 31, subject to all regulatory and statutory approvals. The Adani Group Boards have approved the Scheme and recommended it to shareholders, who voted overwhelmingly in favour in April 2015.

Section 3.3 - Net debt

Adani Enterprises has consolidated net debt of US\$10.9bn as at September 2014, plus the US\$2bn of net debt in AAPCT T1 that was erroneously deconsolidated two years ago. Net debt will rise to US\$14bn post the acquisition of the Udupi Power Station in 2015, everything else being equal.

Figure 5: The Adani Group Net Debt by listed Entity

Adani Group: Net Debt By Listed Entity			
US\$m	FY2013	FY2014	1H FY2015
Net Debt in AEL - consolidated	10,055	10,222	10,889
Net Debt in Adani Power	6,587	6,498	6,582
Net Debt in Adani Ports	1,639	1,444	2,182
Net Debt in AEL ex listed units	1,830	2,279	2,125

Source: Adani Enterprises, Adani Ports and Adani Power annual 2013/14 and interim 2014/15 accounts

The purpose of the Adani Enterprises restructuring is to deconsolidate/separate out the operations of Adani Ports and Adani Power as free standing listed groups.

Post deconsolidation, Adani Ports will continue to have net debt of US\$2.2bn (US\$4.2bn if the AAPCT T1 divestiture is not completed). Adani Power will have an estimated net debt of US\$5.8bn after deconsolidating Adani Transmissions and acquiring the Udupi power plant (refer section 3.6). Adani Enterprises will have net debt of an estimated US\$2.1bn post deconsolidation.

Section 3.4 - Market value of equity and free float

Adani Enterprises free float will remain at the current level of 25.0% — figure 6. However, Adani Enterprises market capitalization of equity is currently at US\$11.8bn, but will decline to an estimated US\$2.5bn post deconsolidation (subject to change as the share prices across the group change).

Figure 7 details IEEFA's estimates of the issued capital structure, post Scheme completion.

Adani Power currently has a market capitalization of equity of US\$2.0bn, which will remain unchanged post the Scheme, while the free float will rise from 25.0% to 41.9%.

The market capitalization of Adani Ports is currently US\$10.4bn with a free float of only 25.0%. Post the scheme, the market capitalization will remain as is, but the free float will rise to 43.8%.

Figure 6: The Adani Group Issued capital and cross-shareholdings (end 2014)

	AEL		Adani Power		Adani Ports		Adani Transmission	
Adani Family	824.9	75.0%	172.3	6.0%	0.0	0.0%	0.0	0.0%
Adani Enterprises Ltd	n.a.	n.a.	1,981.6	69.0%	1,552.5	75.0%	1,099.8	100.0%
Public	275.0	25.0%	718.0	25.0%	517.5	25.0%	0.0	0.0%
Total Shares (m)	1,099.8		2,871.9		2,070.1		1,099.8	

Source: Adani Enterprises, Adani Ports and Adani Power annual 2013/14 and interim 2014/15 accounts

Figure 7: The estimated Adani Group Issued capital and cross-shareholdings (post Scheme)

	AEL		Adani Power		Adani Ports		Adani Transmission	
Adani Family	824.9	75.0%	1,706.5	58.1%	1,164.4	56.3%	824.9	75.0%
Adani Enterprises Ltd	n.a.	n.a.	0.0	0.0%	0.0	0.0%	0.0	0.0%
Public	274.9	25.0%	1,229.4	41.9%	905.6	43.8%	274.9	25.0%
Total Shares (m)	1,099.8		2,935.9		2,070.1		1,099.8	
Share price (Rs)	Rs674		Rs43		Rs318			
Market Capitalisation pre distribution (Rs m)	Rs741,265 m		Rs126,098 m		Rs657,448 m			
Market Capitalisation pre distribution (US\$m)	\$11,766 m		\$2,002 m		\$10,436 m			
Market Capitalisation post distribution (Rs m)	Rs159,951 m		Rs126,098 m		Rs657,448 m		Rs3,120 m	
Market Capitalisation post distribution (US\$m)	\$2,539 m		\$2,002 m		\$10,436 m		\$50 m	

Source: IEEFA estimates

Section 3.5 - Adani Enterprises post deconsolidation

Post restructuring, Adani Enterprises will become a standalone company with an equity capitalization of US\$2.5bn (as implied by the 30 April 2015 share prices of the three listed groups). Against this will be an estimated US\$2.1bn of net debt (or higher if some debt is transferred out of Adani Transmissions prior to its initial public offering (IPO)).

It will operate a trading division, with revenues of US\$5.5bn, and EBIT averaging of US\$190m in the last three years. Additionally there is an Agro products division with revenues of US\$1.7bn and EBIT averaging US\$25m in the last three years – refer Appendix B. There is also a gas distribution unit.

The Carmichael coal mine proposal and the 3-4Mtpa Indonesian coal mine are the only other substantial business units within Adani Enterprises. Note the Abbot Point port project proposal for Terminal 0 is held by the unlisted Adani family group.

IEEFA estimates Adani Enterprises has already outlaid A\$1.0bn on the Carmichael project (excluding Abbot Point Port T1). IEEFA estimates Adani Enterprises still has to fund a further A\$3.6bn (US\$2.8bn) for stage I of the Carmichael coal mine, equipment and 150MW power station, plus A\$3.5bn (US\$2.7bn) for the rail line and locomotives. IEEFA assumes the T0 40Mtpa port stage I is built by the private family companies, at a cost of US\$2.5bn.

Adani Enterprises has also been named as the vehicle that will undertake the two new proposed expansions into solar (refer Section 3.8). How all these expansions could be financed concurrently post Scheme is not at all evident, given the transfer of some 80% of Adani Enterprise's market capitalization across into direct shareholder stakes in Adani Ports and Adani Power. An 80% reduction in market capitalization will reduce Adani Enterprises' debt-borrowing capacity by a commensurate amount.

Section 3.6 - Adani Power

Adani Power's issued capital is unaffected by the Scheme so its market capitalization of equity will remain unchanged at US\$2.0bn post scheme completion (subject to future share price moves).

Against this, Adani Power will have US\$6.6bn of net debt, rising by US\$1.0bn to US\$7.6bn post completion of the 1.2GW Udipi coal-fired power station acquisition from Lanco Infratech.¹² IEEFA notes that as recently as April 2015 Adani Power was reported to have utilized the Reserve Bank of India's 5/25 scheme to gain a repayment moratorium and push out terms on various debts in loss-making power subsidiaries to avoid them being reported as non-performing.¹³

The Transfer of Adani Transmission from Adani Power to Adani Enterprises will serve to lower the net debt of Adani Power by the yet-to-be confirmed external value ascribed to this asset. If this is the Rs110bn (US\$1.8bn) referenced by management, this will materially lower the excess financial leverage currently in Adani Power to US\$5.8bn. This is a materially positive outcome.

The transfer of the 40MW solar project from Adani Enterprises to Adani Power is being funded by the issues of new shares of an estimated US\$50m (64m shares at Rs50ps).

¹² http://www.moneycontrol.com/stocks/stock_market/corp_notices.php?autono=903974

¹³ <http://www.financialexpress.com/article/economy/companies/adani-power-in-line-for-525-model-relief/62004/>

Section 3.7 - Adani's move into electricity transmission

The January 2015 Scheme announcement will see a new listed company, Adani Transmissions Ltd, own the Adani Group's electricity transmission assets, stated to already exceed 5,000 circuit km of transmission lines across India. As of March 2014, three transmission lines are operational, including:

1. The 500kv 990km line from Mundra, Gujarat, to Mohindergarh, Haryana.
2. The 400kv 434km line from Mundra, Gujarat, to Dehgam, Gujarat.
3. The 400kv 434km line from Tiroda, Maharashtra, to Warora, Maharashtra.¹⁴

The Scheme involves the sale of Adani Transmission from Adani Power to Adani Enterprises. Following this, an *in specie* distribution of Adani Transmission shares will be made pro-rata to all Adani Enterprise shareholders. The transfer from Adani Power to Adani Enterprises is to be put to shareholders at an agreed Rs312 crore (US\$50m) equity value. Transmission revenues for 2014/15 are running at an annualized US\$108m, up over 100% year-on-year, although the division is running at a net loss after interest and tax.¹⁵ This division is reported by management to have an enterprise value (equity plus net debt) of Rs110bn (US\$1.8bn),¹⁶ implying a heavy level of financial leverage.

While the 60% government owned, BSE-listed Power Grid Corp of India Ltd currently holds a 99% national market share in the Indian electricity grid, the Gol has been gradually opening up private industry presence in this sector since 2010 by awarding the contract for the western regional system's strengthening to Reliance Infra and the east-north Interconnection line to Sterlite Energy.

The Gol has introduced a new Tariff-based [competitive bidding program](#) with Rs.26,000 crore (US\$4bn) of new projects expected to be awarded in 2015 alone.

IEEFA views the formation and listing of Adani Transmissions as a key insight into the strategic direction of the Adani Group. Consistent with the rapid expansion into solar manufacturing and solar parks (refer section 3.8), the expansion in transmission represents a strategic alignment of the Adani Group with the wider electricity [transformation plans](#) being announced by Energy Minister Piyush Goyal.¹⁷ Adani is positioned as a [key bidder](#) into the tender of 204 domestic Indian coal blocks. Adani is moving rapidly into solar at a time when Minister Goyal has announced a 100GW/US\$100bn solar program. Now Adani Transmissions is being positioned and structured to participate in Energy Minister Goyal's US\$50bn modernization of the Indian transmission grid as part of a wider US\$250bn [electricity sector transformation](#).

¹⁴ Adani Power 2013/14 Annual Report, page 3.

¹⁵ Adani Power Nine months to December 20134 Results, notes 5 and 6.

¹⁶ Morgan Stanley, Akshay Soni, Adani Enterprises Ltd, "F3Q15 – Strong Numbers, but Overshadowed by Demerger Announcement", 31 January 2015.

¹⁷ http://pmindia.gov.in/en/news_updates/pms-address-at-the-inauguration-of-re-invest-2015-the-first-renewable-energy-global-investors-meet-and-expo/

Section 3.8 - Adani Enterprises' move into solar

Adani Enterprises announced in early 2015 a major new business initiative involving a rapid investment in solar, involving two new business streams:

1. The proposed US\$4bn solar manufacturing joint venture with Sun Edison.
2. A proposed 10GW solar park in Rajasthan in joint venture with the Rajasthan government.

Gujarat Solar Manufacturing Joint Venture

In January 2015, Adani Enterprises announced a new memorandum of understanding to develop a joint venture with Sun Edison Inc. (US) for a US\$4bn [integrated solar photovoltaic manufacturing plant](#) in Mundra, Gujarat.

Rajasthan Solar Park Joint Venture

Adani Enterprises announced in February 2015 a new memorandum of understanding to develop a joint venture proposal with the Rajasthan government's Rajasthan Renewable Energy Corp to set up [a new solar park facility](#) with scope to warehouse up to 10GW of solar with a potential investment totaling up to Rs70,000 crore (US\$11bn or US\$1.1m per MW of new solar capacity).

Adani Power is also reported to be planning to set up a [1 GW solar power project](#) in Tamil Nadu state of India.

"India has embarked on an ambitious program to become a world leader in power generation from renewable technologies, and sees solar as a key part in realizing that goal,"

- Mr Vneet S Jaain, Chief Executive Officer, Adani Power

Section 4 Adani Group's Expansions

Beyond the A\$17bn (US\$13bn) Carmichael and Abbot Point Port projects in Queensland, Australia, Adani Group has numerous other major expansions under way. Following on from the Adani Ports' acquisition of the Dhamra port in Odisha for US\$0.9bn in June 2014, details on other expansions include:

1. A multibillion dollar capex program to expand the [Dhamra port](#) from its 14Mt of throughput in 2013/14 to a target of 100Mtpa capacity by 2020.
2. Adani Ports February 2015 commissioning of a 20Mtpa [bulk terminal](#) at Tuna Tekra, Kandla Port.
3. Adani Ports won a concession in February 2014 to develop a new US\$0.2bn [Container Handling Terminal](#) at Ennore Port in Tamil Nadu, with US\$1.2bn capex [plans](#) to expand to 80Mtpa.
4. Adani Ports is said to be talking about acquiring operating port assets of [Esser Ports Ltd](#), one of the largest listed port owners in India.
5. Adani Ports is developing a Special Economic Zone Industrial Park at Mundra.
6. Adani Enterprises aims to lift production from 2-4Mtpa to 11Mtpa at its Bunyu Island, Indonesia coal mine.
7. Adani Enterprises has [multiple tender bids](#) outstanding for domestic Indian coal deposits to vertically integrate Adani Power's coal-fired power plants, although to date the group has only secured a [single deposit](#) in [Jharkhand](#) with a potential 2.5Mtpa capacity.
8. Adani Enterprises has proposed a US\$11bn, 10GW Rajasthan Solar Park Joint Venture.
9. Adani Enterprises has proposed a US\$4bn Gujarat Solar Manufacturing Joint Venture.
10. Adani Power in August 2014 made a US\$1bn bid to [acquire](#) Lanco Infratech's 1,200MW Udupi imported-coal fired power plant (this transaction was [closed](#) April 2015).
11. Adani Power in November 2014 entered a binding agreement to [acquire](#) the 600MW coal-fired Korba West power plant in Chhattisgarh from Avantha Group for US\$0.7bn.
12. Adani Power was reported in March 2015 to be aiming to buy [Adhunik Power](#) in a deal valued at 3500-4000 Crore (US\$0.5-0.6bn). Adani denied any deal has been done.¹⁸⁾
13. Adani Power is due to [commission](#) the fifth 660MW coal fired supercritical power plant unit at Tiroda during the June 2015 quarter.
14. The Adani Group in March 2015 [proposed](#) a US\$3bn Sindri coal-based substitute natural gas plant and associated 1.5Mtpa urea plant and 400MW captive power plant.
15. Adani Transmissions is reported to be [one of three private Indian firms](#) set to bid on a tender for the estimated Rs6,000 crore (US\$1bn) Gadarwara A&B transmission line development, run by the wholly owned subsidiary of the Ministry of Power, the Rural Electrification Corporation.

The Adani Group is financially and operationally leveraged to the expansion of a multitude of sectors across the Indian economy. Numerous new projects are under way. Some will be viable and will proceed, others will see regulatory, market and financing changes that leave the proposals uncommercial.

¹⁸ http://www.bseindia.com/xml-data/corpfiling/AttachLive/adani_power_ltd_110315.pdf

IEEFA views the Galilee proposal as falling into the latter category. The halving of coal prices and structural decline in seaborne thermal coal markets combine with the change in the GoI strategy toward the development of the Indian electricity sector. If Minister Goyal's hope to cease thermal coal imports within two to three years is even directionally correct, this leaves the Galilee a likely stranded asset. As such, IEEFA views it as likely that Adani Enterprises will cancel this project proposal in order to pursue significantly more viable expansion strategies in home markets where it has a competitive advantage, particularly where this expansion is aligned with the goals of the GoI.

Appendix A - Adani Ports and Adani Power Share performance

Adani Ports has significantly outperformed the BSE over the past 12 months, having doubled in price relative to the 40% rise in the BSE. Adani Power has materially underperformed, reflecting the excessive financial leverage and resulting ongoing losses being incurred.

Figure A1: Adani Ports & SEZ share price relative to NSE over the last four years (Rs)



Source: Yahoo Finance

Figure A2: Adani Power share price relative to NSE over the last four years (Rs)



Source: Yahoo Finance

Appendix B - Sales, EBIT and margins of Adani Enterprises

Adani Enterprises details the performance of its Coal Trading and Agro divisions in its segmental accounts on a pre-corporate overheads basis. Post the Scheme completion, the equity market will get a more transparent view of the individual performance of these divisions. Pre the Scheme documents, IEEFA details our estimated value to suggest a rough guide of the contribution each division would make to the Enterprise Value of this company. The selection of 10x is a guide only (based on a pre tax current year return on investment of 10%), the market may value each division at a significantly higher or lower multiple depending in part on the perceptions of growth and hence returns going forward.

Figure B1: Adani Enterprises: Trading and Agro divisions Sales, EBIT and EBIT margins

Trading	2014/15	2013/14	2012/13	Agro	2014/15	2013/14	2012/13
Rs Crore	9mths			Rs Crore			
	Annualised						
Sales		33,068	28,459	Sales	9128	9,312	9,888
EBIT	1,169	526	1,609	EBIT	104	136	199
Gross Assets		37,509	31,129	Gross Assets		5,535	5,392
Rs Mn				Rs Mn			
Sales		330,680	284,590	Sales	91,280	93,120	98,880
EBIT	11,693	5,260	16,090	EBIT	1,040	1,365	1,987
Gross Assets		375,090	311,290	Gross Assets		55,350	53,920
Forex - USD/Rs	63.0	59.9	54.4	Forex - USD/Rs	63.0	59.9	54.4
US\$m				US\$m			
Sales		5,519	5,232	Sales	1,449	1,554	1,818
EBIT	186	88	296	EBIT	17	23	37
EBIT Margin		1.6%	5.7%	EBIT Margin	1.1%	1.5%	2.0%
Gross Assets		6,260	5,723	Gross Assets		924	991
Average EBIT (US\$m)			190 m	Average EBIT (US\$m)			25 m
EBIT Multiple			10 x	EBIT Multiple			10 x
			1,897 m				253 m

Source: Adani Enterprises, Adani Ports and Adani Power annual 2013/14 and interim 2014/15 accounts

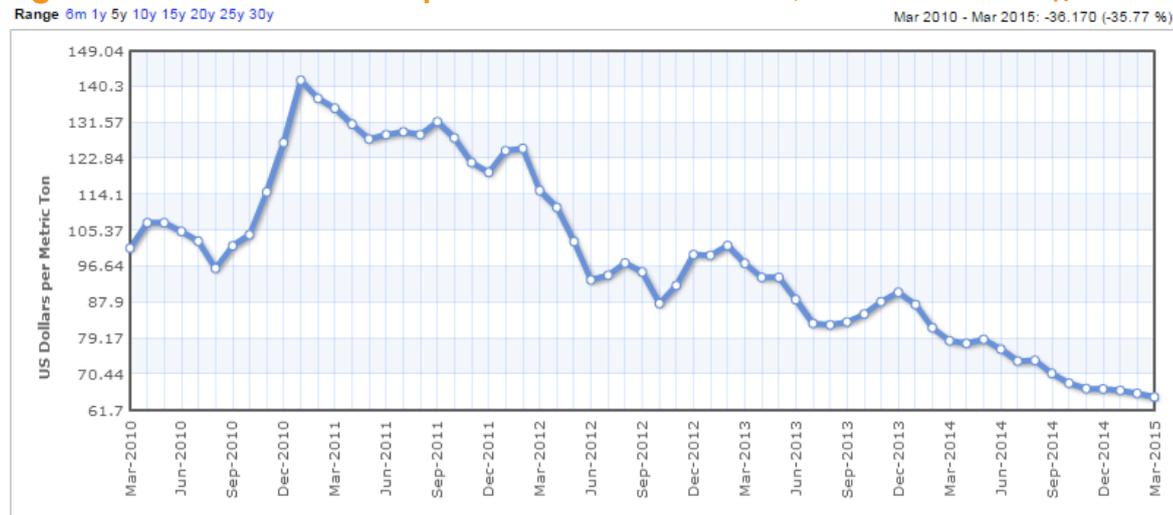
Appendix C - Structural Decline of Seaborne Thermal Coal

IEEFA views the thermal seaborne coal market as having entered structural decline. This reflects IEEFA's forecast that seaborne thermal coal demand will decline from its 2013 peak of almost 1,000Mt to below a 850Mtpa level over 2020-2025. Figure C1 details the 50% decline in coal prices since 2011.

The key driver of this forecast is that China represents 50% of world coal consumption, and in 2014 China's coal consumption declined by 2.9%.¹⁹ China rapidly moved to protect its domestic coal mining operations, resulting in an 11% decline to 290Mt in coal imports in 2014 (of which 224Mt was thermal). The decline in China's seaborne coal imports has **accelerated** to-date in 2015. First quarter 2015 coal consumption was down 4.7% year-on-year (yoy) in China, with coal imports down a staggering 42% yoy. Declining coal consumption reflects economic transition towards less electricity intensive sectors, greater energy efficiency and a rapid diversification of electricity generation. Considerably more hydro, gas, nuclear, wind and solar capacity has been installed than coal-fired power plants in the last three years, and this trend is accelerating. A structural transition is in progress.

India imported close to 200Mt of coal in 2014/15 (this includes coking and thermal coal imports), up 18% yoy. While many commodity forecasters have assumed Indian imports will continue to grow, rising to upwards of 400Mt in the next decade, IEEFA forecasts a peak in Indian thermal coal imports in 2015/16, with a rapid ~20% pa decline thereafter. This is directionally consistent, but more conservative, than Energy Minister Goyal's aim for zero thermal coal imports by around 2017.

Figure C1: Thermal Coal Export Price - Newcastle 6,000kcal NAR US\$/t



Description: Coal, Australian thermal coal, 12000- btu/pound, less than 1% sulfur, 14% ash, FOB Newcastle/Port Kembla, US Dollars per Metric Ton

Source: *Index Mundi, Australian thermal coal Monthly Price - US Dollars per Metric Tonne*

¹⁹ China Shenhua Energy Company, 2014 Annual Report, page 65.

Important Information

This report is for information and educational purposes only. It is for the sole use of its intended recipient. It is intended solely as a discussion piece focused on the topics of the Indian electricity sector, the Adani Group's involvement in the Australian coal industry and the risks of stranded assets. Under no circumstance is it to be considered as a financial promotion. It is not an offer to sell or a solicitation to buy any investment even indirectly referred to in this document; nor is it an offer to provide any form of general nor personal investment service.

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