

India

**Overweight** (no change)

**Highlighted Companies**

**GAIL India**

**ADD, TP Rs200, Rs184 close**

Gas transmission volume is poised to rise, given India's record-high gas usage across sectors, with a significant contribution from CGD & fertilizer sectors. Consol. EPS is likely to post a 26% CAGR over FY24F-26F. We have an ADD rating on the stock with a target price of Rs200.

**Indraprastha Gas**

**ADD, TP Rs539, Rs445 close**

Higher APM gas allocation to city gas distribution (CGD) companies presents a favorable scenario and brings potential benefits to the CGD sector. We currently have an ADD rating on the stock with a target price of Rs539.

**Gujarat Gas**

**ADD, TP Rs679, Rs581 close**

The CGD business is experiencing lower gas costs and higher margins, mainly driven by higher APM gas allocation & lower APM pricing (approx. 90% APM allocation). We currently have an ADD rating on the stock.

**Summary Valuation Metrics**

P/E (x)	Mar24-F	Mar25-F	Mar26-F
GAIL India	11.98	8.87	7.6
Indraprastha Gas	14.52	13.21	12.01
Gujarat Gas	22.64	19.79	17.33
P/BV (x)	Mar24-F	Mar25-F	Mar26-F
GAIL India	1.58	1.42	1.27
Indraprastha Gas	3.17	2.61	2.18
Gujarat Gas	4.62	3.79	3.15
Dividend Yield	Mar24-F	Mar25-F	Mar26-F
GAIL India	2.92%	4.51%	5.26%
Indraprastha Gas	0.81%	0.81%	0.81%
Gujarat Gas	0.34%	0.34%	0.34%

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# Oil & Gas - Retail

## LNG is falling - Indian demand to rebound

- A slew of new LNG capacities at US\$11-12/mmBtu capex, dry gas surplus in the US and slowing Chinese & European LNG demand bode well for India.
- India's regasification capacity of 93bcm (after an expansion spree) may not be enough as likely lower global LNG prices to boost consumption across sectors.
- LNG to be in oversupply for the next four-to-five years and hence, its prices will fall. In our view, LNG prices may settle ~US\$7-8/mmBtu.

### Global LNG prices to fall to US\$7-8mmBtu in coming quarters

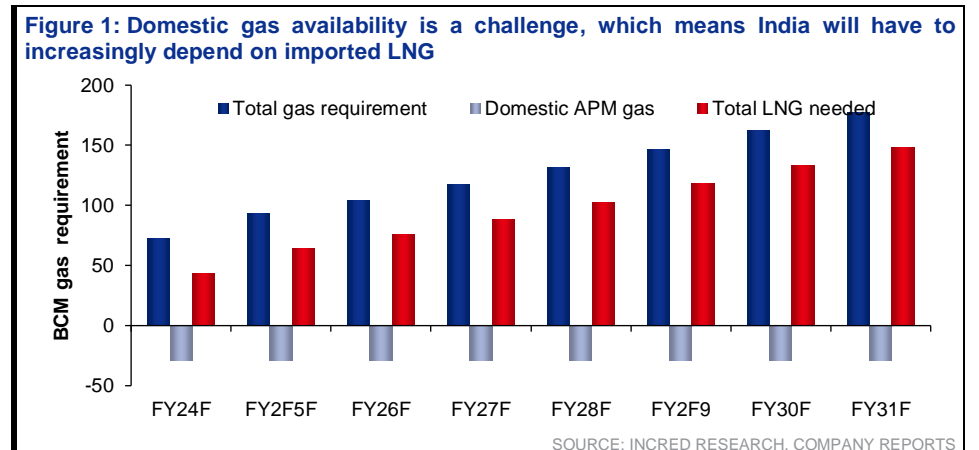
The world is going to witness commissioning of close to 215mt of LNG capacity in the next four years and at the same time, stagnating or declining Chinese+ European demand will lead to a surplus in the global market. India is likely to remain the only bright spot where lower LNG prices can lead to a big demand surge. Please note that the marginal cost of new LNG capacity is in the range of US\$11.5/mmBtu while the liquefaction costs are in the range of US\$2-2.2/mmBtu. Hence, even at US\$5.5/mmBtu (assuming Henry Hub rises to US\$3/mmBtu), cash cost of LNG can be recovered. It's likely that LNG prices will decline to the US\$7-8/mmBtu range, where RoCE of new capacity will be at 20%+ and old plants will still be making much better returns. Also, note that historical netbacks for big exporters like Qatar has been in the range of US\$5-6/mmBtu, which will remain in the same range if LNG prices fall to US\$7-8/mmBtu.

### LNG prices at US\$7-8/mmBtu to spur consumption boom in India

India has invested a lot in city gas distribution or CGD networks, industrial usage is also on the rise, CNG consumption has not been rising for the past 1.5 years primarily because of high LNG prices but lower prices will be a big tailwind to CNG demand, as renewable power rises the grid's peak load management requirement will also rise and hence, gas turbines need to work on a higher plant load factor or PLF (please note that at US\$7/mmBtu, they are viable to operate), India has stated its objective of becoming self-dependent in fertilizers and so urea production needs to be ~37mt (new~7mt capacity is coming online) and all of the 7.3mt DAP fertilizer capacity needs to be fully utilized. All these developments will mean that the current regasification capacity of 90bcm (under construction and operational) will be fully utilized in only three-to-four years (more so when domestic gas production is not rising). We believe that more new LNG import terminal capex will be announced by Indian companies.

### We remain overweight on the sector; GAIL is our top stock pick

We remain overweight on the oil and gas sector, and GAIL remains our top stock pick. Indian CGD companies have underperformed the broader market in the last two-to-three years but as LNG prices fall (they have already started falling to some extent), alpha will be generated by these companies. GAIL remains our top stock pick followed by Gujarat Gas, Mahanagar Gas, and Indraprastha Gas. Downside risks: Geo-strategic instability in the Middle East region can lead to soaring crude oil prices, which can have an impact on LNG prices as well. Higher LNG prices are the biggest risk to our thesis.



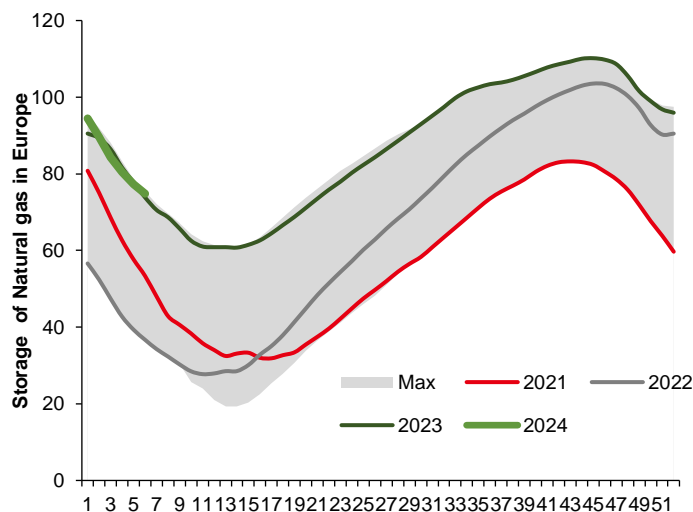
## LNG is falling - Indian demand to rebound

India's LNG purchases were at a multi-year low in FY23, as the rise in global LNG prices had made LNG usage in India unviable. We saw a significant decline in LNG usage by city gas distribution and power companies while LNG demand for urea as well as DAP production fell. Indian companies have installed multiple ammonia plants for fertilizer as well as industrial usage which get their feed from the international LNG market. The new contracts are being signed on a delivered basis, which is a clear change in the historical practice and is positive for gasifiers and users of imported LNG. A slew of global liquefaction capacities and demand moderation in China as well as Europe is exerting pressure on global LNG prices. While we do not know the exact details of the recent contract signed by Petronet LNG and GAIL, we believe these contracts will be at a 100bp lower slope than the previous contracts.

### Europe LNG demand to come down

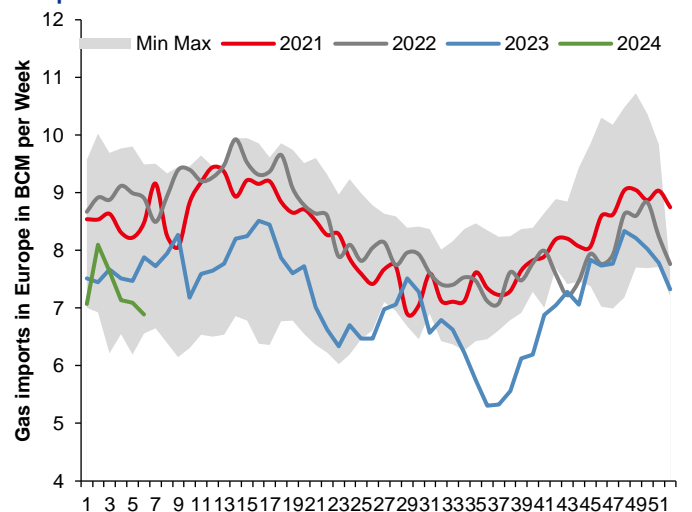
**Demand management by Europe has been exemplary and thus its LNG requirement; hence, prices in Europe are coming down ➤**

Figure 2: European gas reservoir is filled to the maximum level...



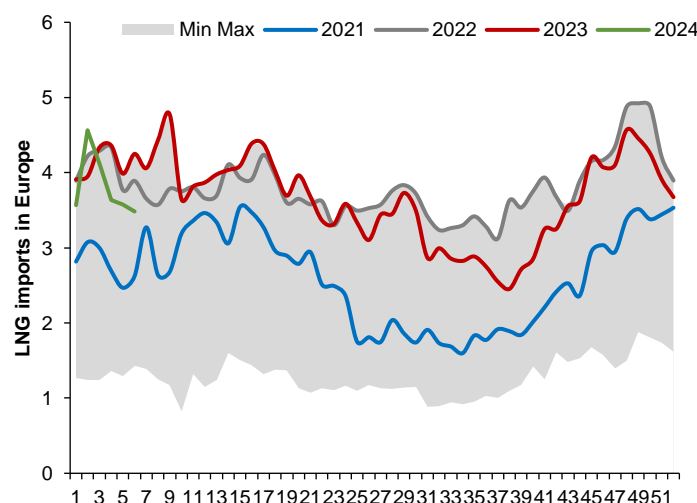
SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 3: ...and that's why gas imports are coming down in Europe



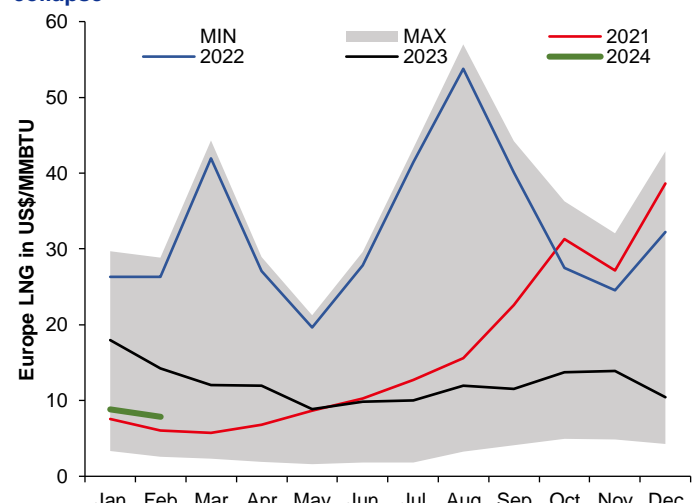
SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 4: The decline in LNG demand in Europe is much steeper



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 5: Consequently, LNG delivered prices to Europe collapse

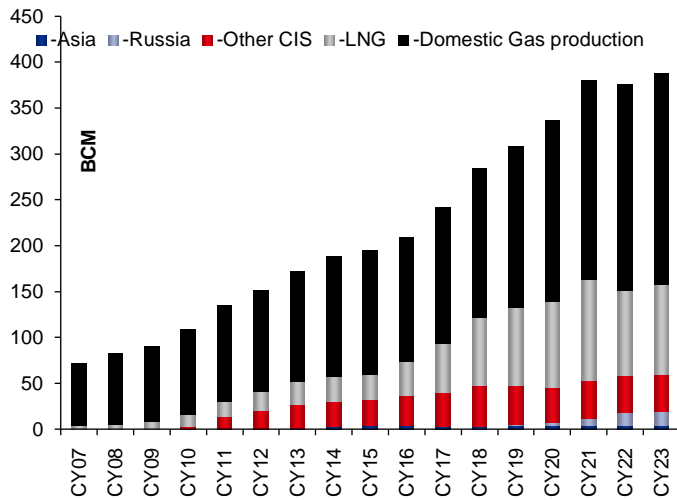


SOURCE: INCRED RESEARCH, COMPANY REPORTS

## China's LNG demand to remain stagnant

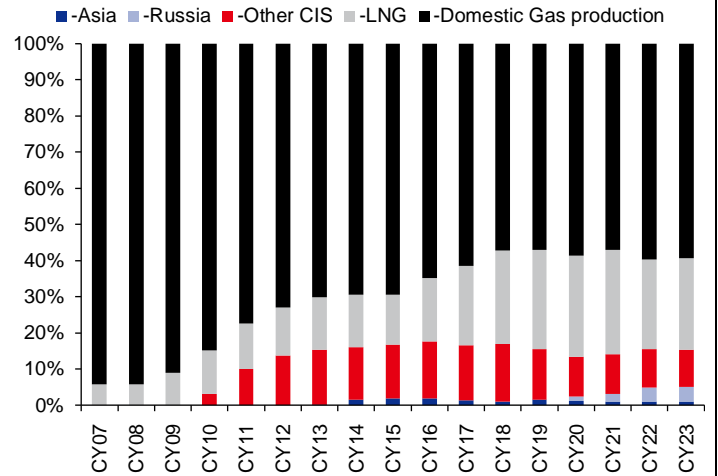
### China's LNG demand appears to have peaked in CY21 ➤

**Figure 6: Chinese LNG demand peaked in CY21; after coming down sharply in CY22, it has rebounded a bit in CY23**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 7: Russian piped gas supply has still not reached its full potential of 22bcm**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

## Russia's gas pipeline to China holds a lot of promise, but it has been unable to ramp up to full capacity ➤

**Figure 8: While the power of Siberia 1 pipeline is up and running, it has not been able to ramp up to full capacity of 22 BCM. China is still playing hardball for power of Siberia-2 pipeline**

### Power of Siberia

Where the natural gas pipelines run between Russia and China



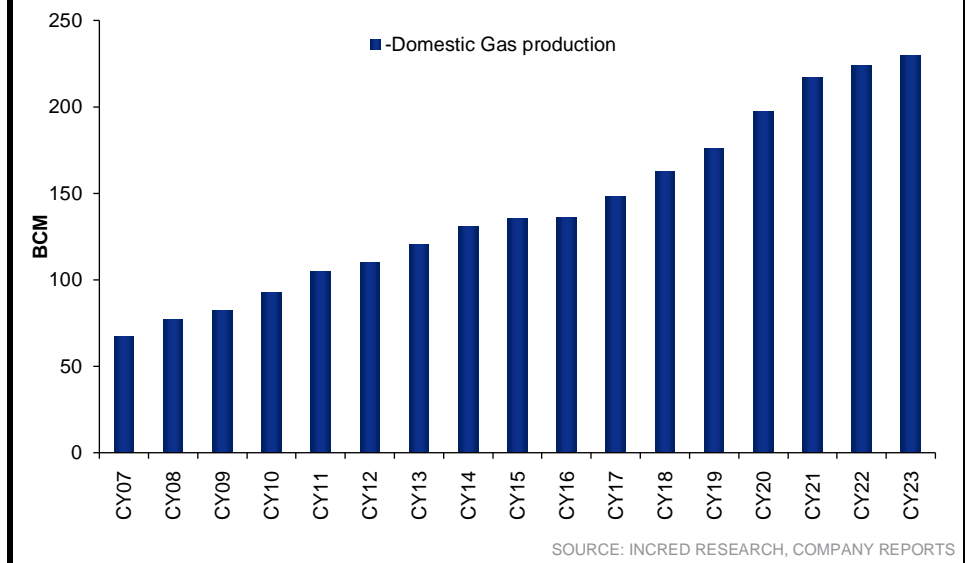
www.Table.Media

Source: Gazprom, Petroleum Economist, Financial Times, IISS

SOURCE: INCRED RESEARCH, [HTTPS://TABLE.MEDIA/EN/CHINA/FEATURE/POWER-OF-SIBERIA-2-DOES-NOT-PROGRESS/](https://table.media/en/china/feature/power-of-siberia-2-does-not-progress/)

However, the slowdown in China as well as a gradual rise in domestic production will keep LNG demand under control ➤

Figure 9: Domestic gas production is rising steadily in China



China’s focus on domestic gas production continued in 2022. Total domestic upstream investment touched a new record of US\$51.2bn (RMB 370bn), a year-on-year increase of 19 %. China’s exact investment in domestic gas is not known; the figures released in the report are for both oil and gas sectors. For six years in a row, China has increased domestic gas production by more than 10bcm. In 2022, China produced 220.1bcm of gas, an increase of 6% over 2021, which met 59 percent of its domestic demand and helped to reduce import dependence from 45% to 41%.

Figure 10: China is investing massively in the development of local gas fields and related infrastructure

	Investment (billion RMB)	Investment (billion USD)
Exploration	84	11.6
Development and production	286	39.6
<b>Total</b>	<b>370</b>	<b>51.2</b>

SOURCE: COMPANY REPORTS, [HTTPS://WWW.ENERGYPOLICY.COLUMBIA.EDU/INSIDE-CHINAS-2023-NATURAL-GAS-DEVELOPMENT-REPORT/](https://www.energypolicy.columbia.edu/inside-chinas-2023-natural-gas-development-report/)

Figure 11: As a result, its dependence on gas imports is gradually coming down

	2022	2021	Change
Domestic consumption (bcm)	364.6	369.0	-1.2%
Domestic production (bcm)	220.1	207.6	6.0%
Pipeline import (bcm)	62.7	59.1	6.1%
LNG import (bcm)	87.6	108.9	-19.6%
<b>Total supply (bcm)</b>	<b>370.4</b>	<b>375.6</b>	<b>-1.4%</b>
<b>Foreign Import dependency</b>	<b>41%</b>	<b>45%</b>	<b>4% point decrease</b>

SOURCE: COMPANY REPORTS, [HTTPS://WWW.ENERGYPOLICY.COLUMBIA.EDU/INSIDE-CHINAS-2023-NATURAL-GAS-DEVELOPMENT-REPORT/](https://www.energypolicy.columbia.edu/inside-chinas-2023-natural-gas-development-report/)

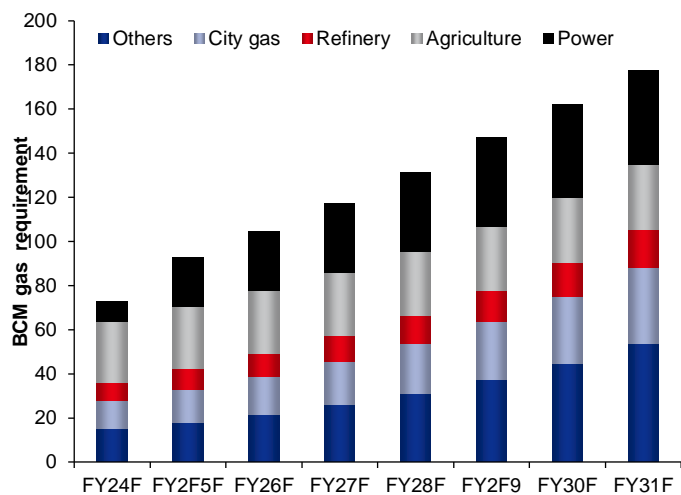
So, in all probability, China is unlikely to increase LNG imports significantly ➤

We believe that China imported 100bcm of natural gas in 2023. Given China’s emphasis on energy security, the gas pipeline from Russia as well as slowing domestic demand means it will be the main driver of stagnant LNG demand.

## India - significant rise in LNG demand

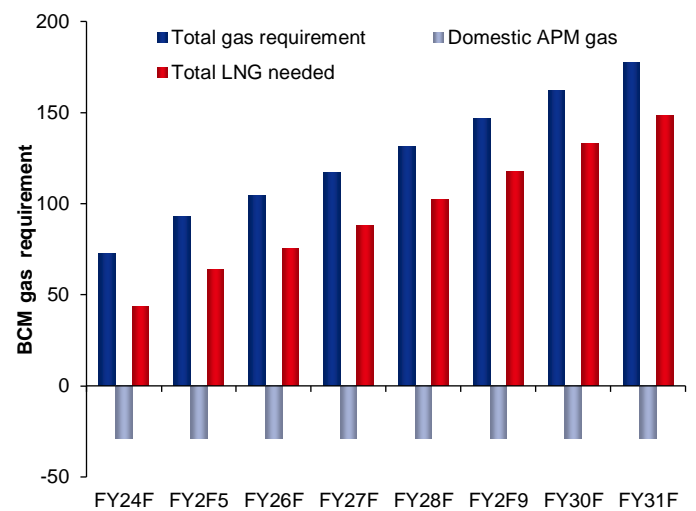
India's LNG demand was suppressed because of high prices. As LNG prices come down, compressed natural gas or CNG as well as piped natural gas or PNG demand will come back with a vengeance. With more renewable power in the grid, peak demand management has become a challenge and hence, gas turbines are needed. Lower LNG prices will bring them back in the reckoning. India has a stated objective to become self-sufficient in urea and DAP production, which is also a key driver for LNG demand in the coming years. Against this huge demand backdrop, domestic gas production is not rising but rising regasification capacity/import terminals are a respite. Indian can import cheap gas from international market, courtesy its burgeoning regasification capacity.

**Figure 12: India's gas requirement will rise at a faster pace as gas power plants, fertilizer and CGD-led demand will rise**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

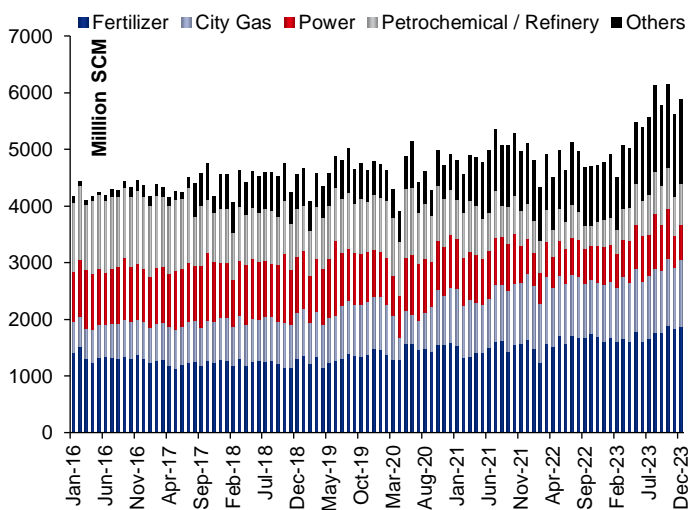
**Figure 13: Domestic gas availability is a challenge, which means India will have to increasingly depend on imported LNG**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

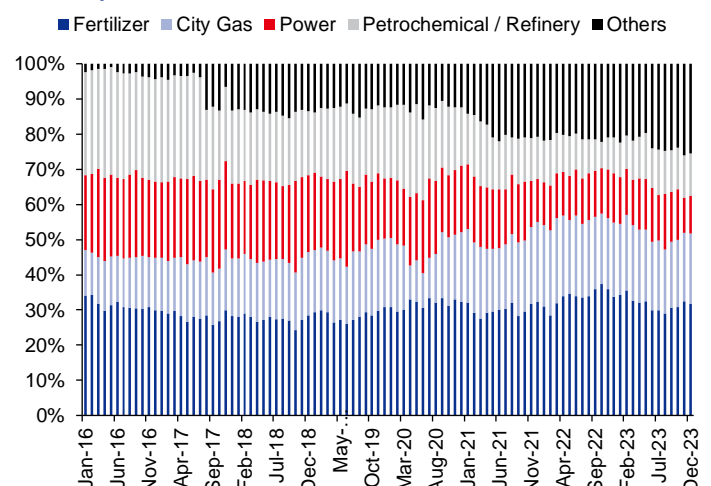
## India's gas demand has been stagnant in 2023 as high prices led to lower consumption ➔

**Figure 14: India's fertilizer-led gas consumption has been rising**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

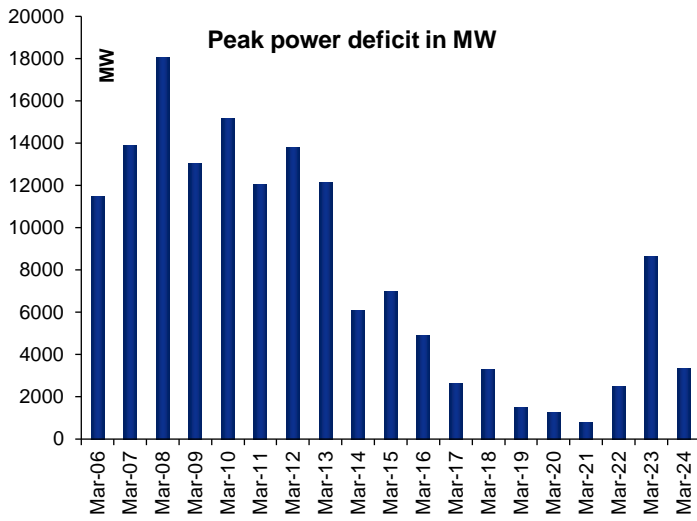
**Figure 15: However, overall usage remains at 30% of the overall consumption**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

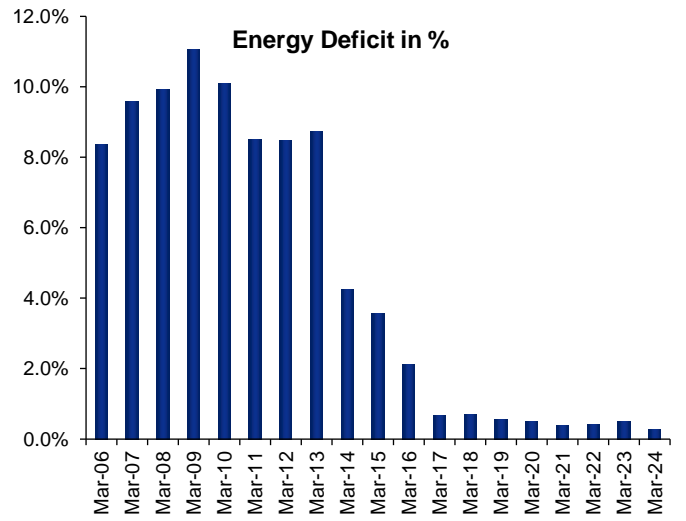
**India's peak power deficit has remained around 4GW**

**Figure 16: Peak power deficit has remained around 4GW**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 17: The energy deficit has been coming down**

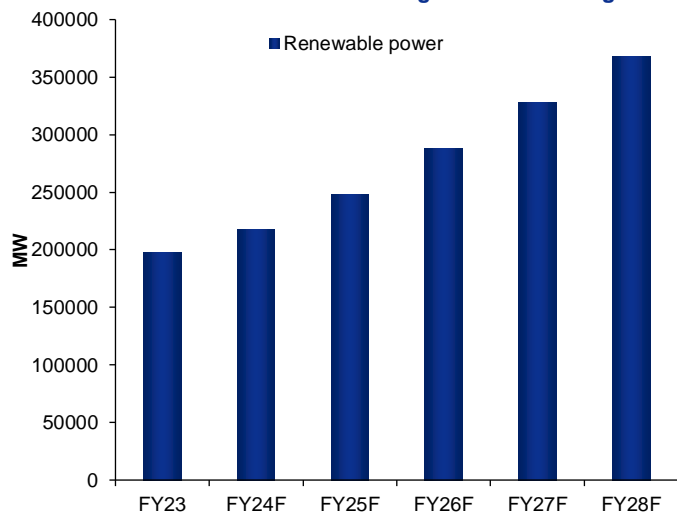


SOURCE: INCRED RESEARCH, COMPANY REPORTS

**At the same time, renewable power is increasing in the grid**

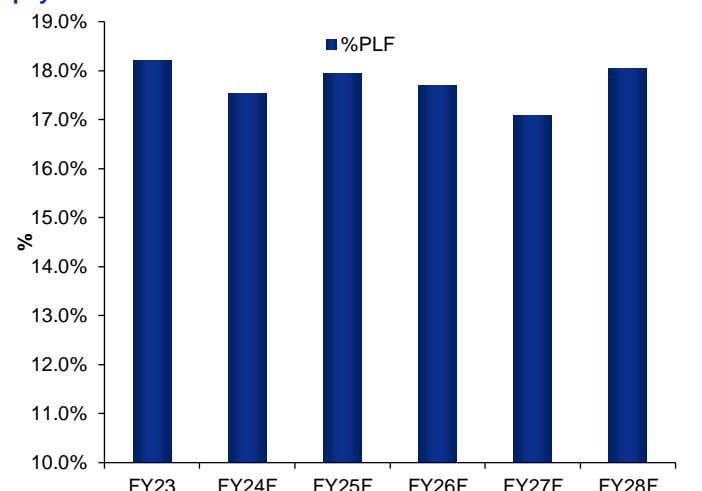
With the extra emphasis on solar and wind power, renewable power's percentage is increasing in the grid. We expect that by FY28F, renewable power will touch ~370GW. Please note that the government's ambitious plan of expansion in solar power is not accounted for in our estimates.

**Figure 18: Renewable power capacity to touch 367GW by FY28F, and even this is well below the Indian government's target**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

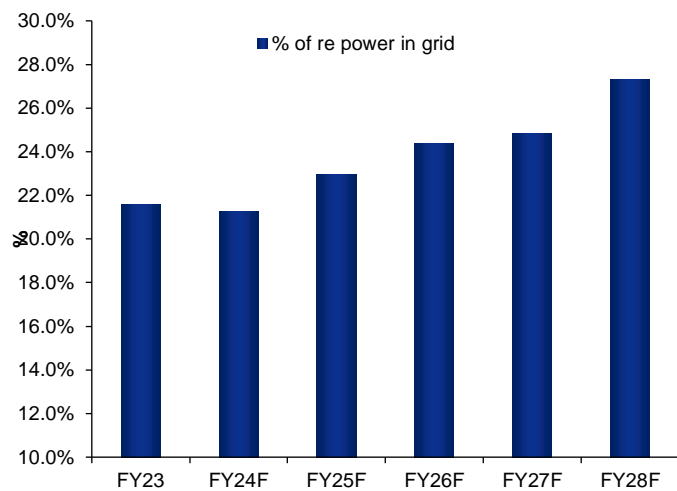
**Figure 19: The nominal PLF at which renewable power should operate is at least above 17% so as to be able to meet the interest payment**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

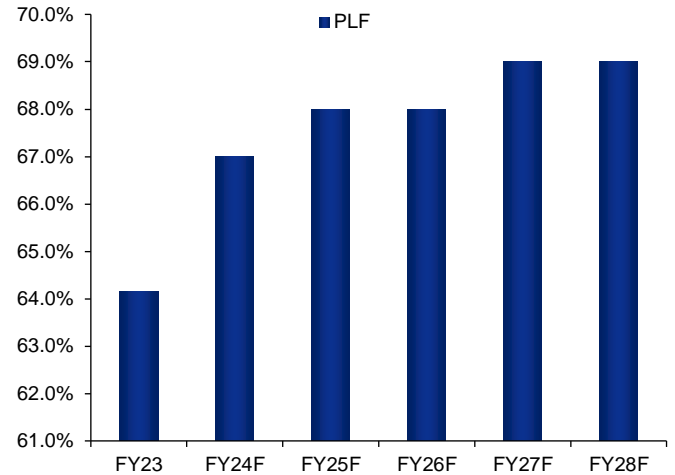
**At this PLF, the grid will have more than 25% power from renewable sources ➤**

**Figure 20: Renewable power in the grid to touch ~27% by the end of FY28F...**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 21: ...which means thermal PLF will barely reach 70% even after assuming 7.5% power demand growth**



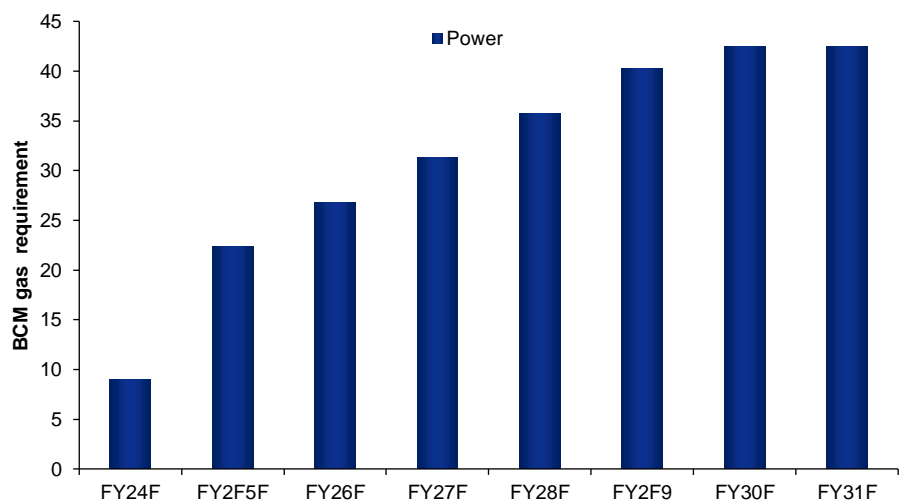
SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Normally, when the grid has such high renewable power content, the requirement of plants which can swiftly change the load is very high - for which gas turbine is the answer ➤**

While Bharat Heavy Electricals or BHEL makes one of the best supercritical boilers, even its boilers cannot change the load more than 3-5% per minute (boiler steam rate) without damaging the boilers (may overheat or will need auxiliary fuel support, which can cause pollution). The only solution is to run gas power plants which can load very fast by simply adjusting the gas flow. India has approximately 23GW of gas power plants that can operate in a changing load scenario.

**Assuming these gas power plants operate at 50-70% of their capacity, the gas requirement will be around 30bcm in FY28F ➤**

**Figure 22: If LNG prices fall to around US\$7-8/mmBtu for delivery to India, then we can see a big improvement in the PLF of power plants**



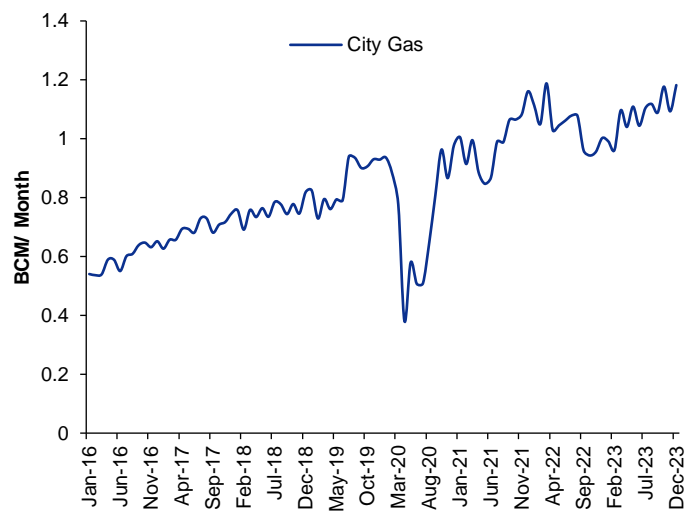
SOURCE: INCRED RESEARCH, COMPANY REPORTS

**India has stated its objective to become self-sufficient in fertilizer production, which means around 30bcm of gas consumption ➤**

India consumes around 38mt of urea and 11mt of DAP fertilizer. Urea and DAP both need natural gas availability to make ammonia. Please note that while we have ~29mt of installed urea capacity, 7mt is in the pipeline, which will get commissioned in the next three years. Urea and DAP fertilizer production needs ~30bcm of natural gas.

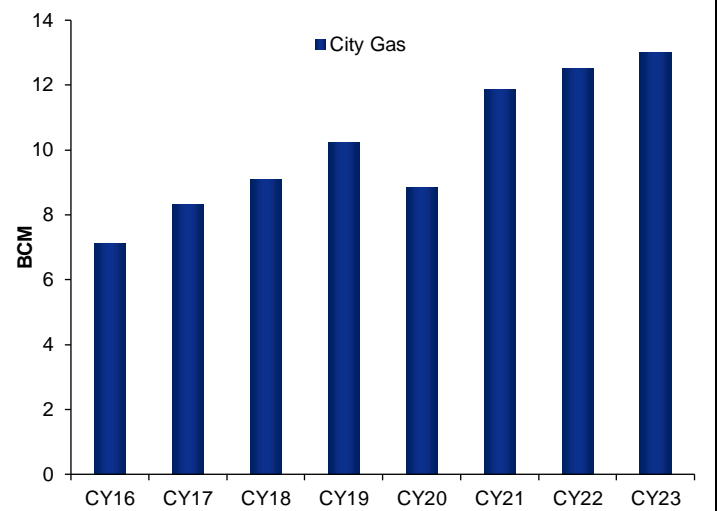
**India city gas demand has been increasing exponentially, and it was only because of extremely high LNG prices that demand remained subdued in CY22-23 ➤**

**Figure 23: Barring the Covid-19 pandemic-related lockdown period in 2020, we haven't seen any drop in CGD demand**



SOURCE: COMPANY REPORTS, INCRED RESEARCH

**Figure 24: In fact, had LNG prices not skyrocketed because of the Russia-Ukraine war, we would have seen a significant rise in CGD demand**



SOURCE: COMPANY REPORTS, INCRED RESEARCH

**We expect CNG and PNG gas demand to rise by at least a 15% CAGR over the coming years ➤**

As of Jun 2023-end, the Petroleum and Natural Gas Regulatory Board (PNGRB) had awarded authorization for CGD networks in 247 geographical areas (GAs) covering 433 districts across 27 states and 2 Union Territories in India. These GAs encompass a population of over 70 crore (700m) people.

**Uncovered areas:**

1. While significant progress has been made in expanding the CGD coverage, there are many cities and towns that have not yet been included.
2. The PNGRB website lists ongoing bidding rounds for 102 GAs, covering roughly 240 districts.
3. Additionally, the government aims to authorize CGD networks in all remaining parts of the country in phases.

**Estimating uncovered cities:**

1. Given the dynamic nature of the program and the lack of a precise 'city' definition, providing the exact number of uncovered cities is difficult.
2. However, considering the ongoing bidding rounds and the government's expansion plan, it's safe to say that hundreds of Indian cities still lack access to piped natural gas through the CGD scheme.



## India needs more regasification capacity and spot LNG prices can fall to ~US\$7-8/mmBtu

By 2026F, India will have ~93bcm of regasification capacity ➤

Figure 25: India will have roughly 68.5mt (which is ~ 93bn cubic metres) of regasification capacity

Operator	Regasification project	Capacity (mtpa)	Operation Start Year
Swan LNG	Jafrabad Floating	5.0	2024
H Energy	Jaigarh Port Terminal	6.0	2025
HPCL	Chhara LNG	5	2024
Petronet	Dahej LNG	5	2025
Petronet	Dahej LNG	17.5	Existing
Shell Energy India	Hazira LNG	5	Existing
Petronet	Kochi LNG	5	Existing
Indian Oil	Ennore LNG	5	Existing
Adani	Mundra LNG	5	Existing
Adani/Total	Dhamra LNG	5	Existing
Konkan LNG	Dabhol LNG	5	Existing
<b>Total capacity</b>		<b>68.5</b>	

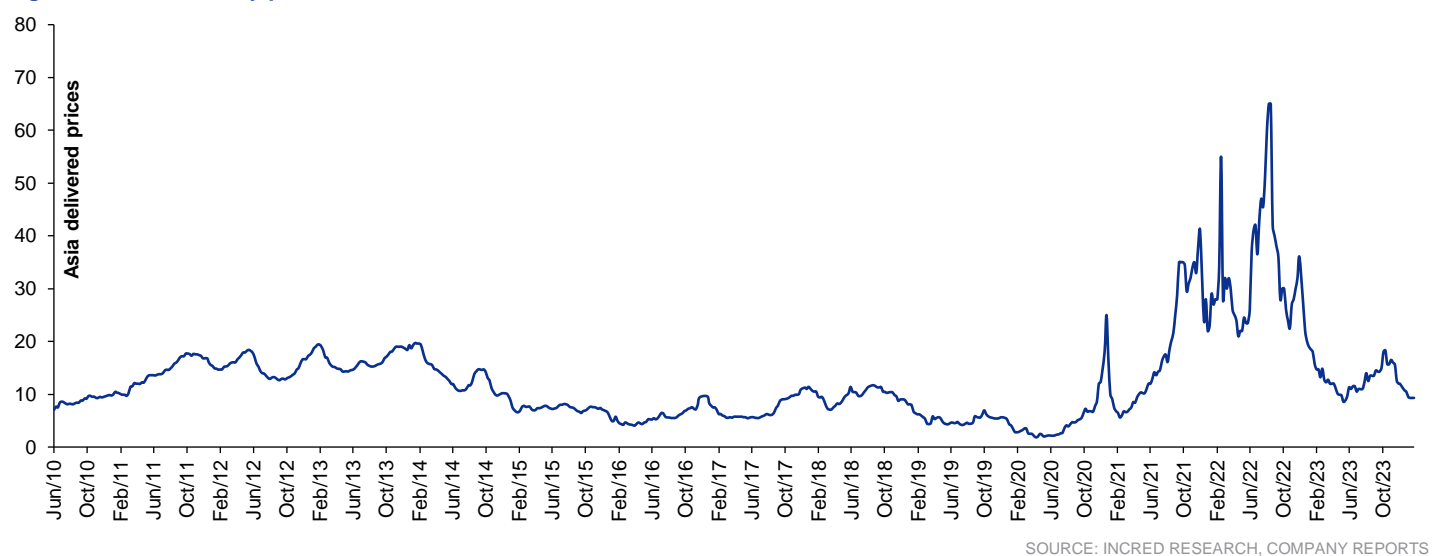
SOURCE: INCRED RESEARCH, COMPANY REPORTS

By the end of 2026F, India will have ~93bn cubic metres of regasification capacity, which raises doubt over the utilization of this capacity. More so, when the current gas demand is barely 70bcm, out of which 27bcm is met.

India's LNG demand is a function of prices - lower the prices, higher the demand ➤

India's LNG demand is always a function of prices and gas prices are coming down. They can come down further in the coming days.

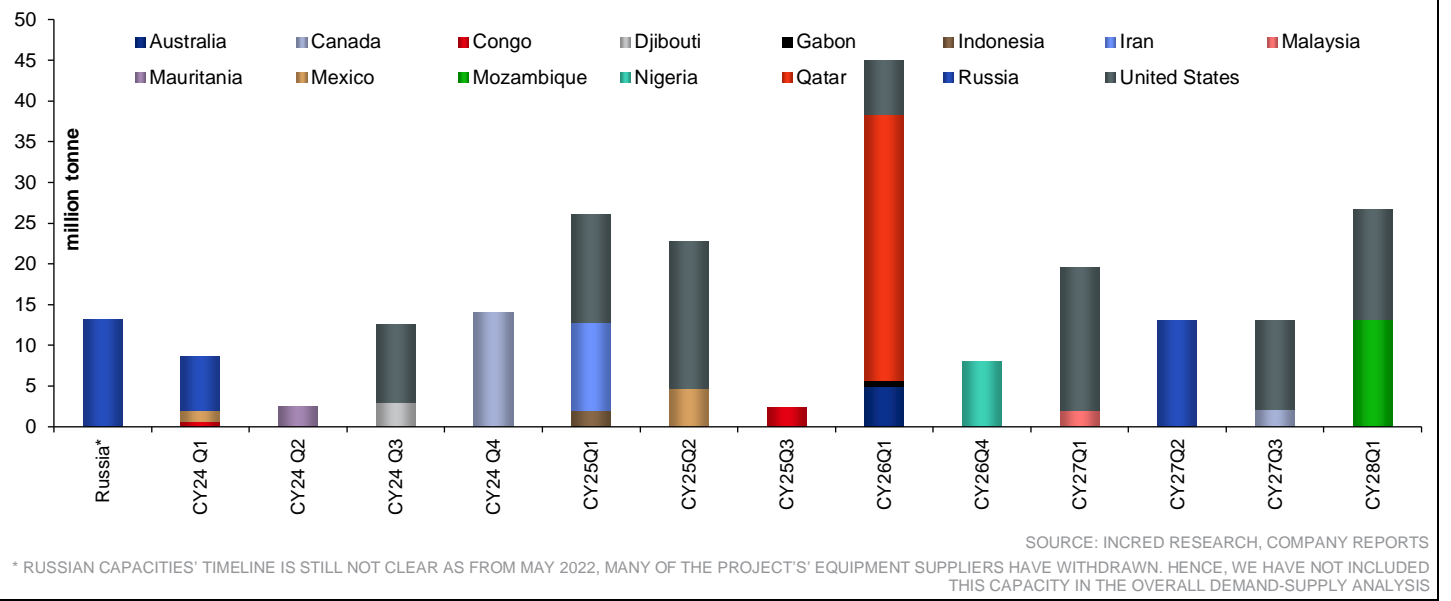
Figure 26: Asia delivery prices in US\$/mmBtu have fallen to below US\$10/mmBtu and more fall is on the cards



SOURCE: INCRED RESEARCH, COMPANY REPORTS

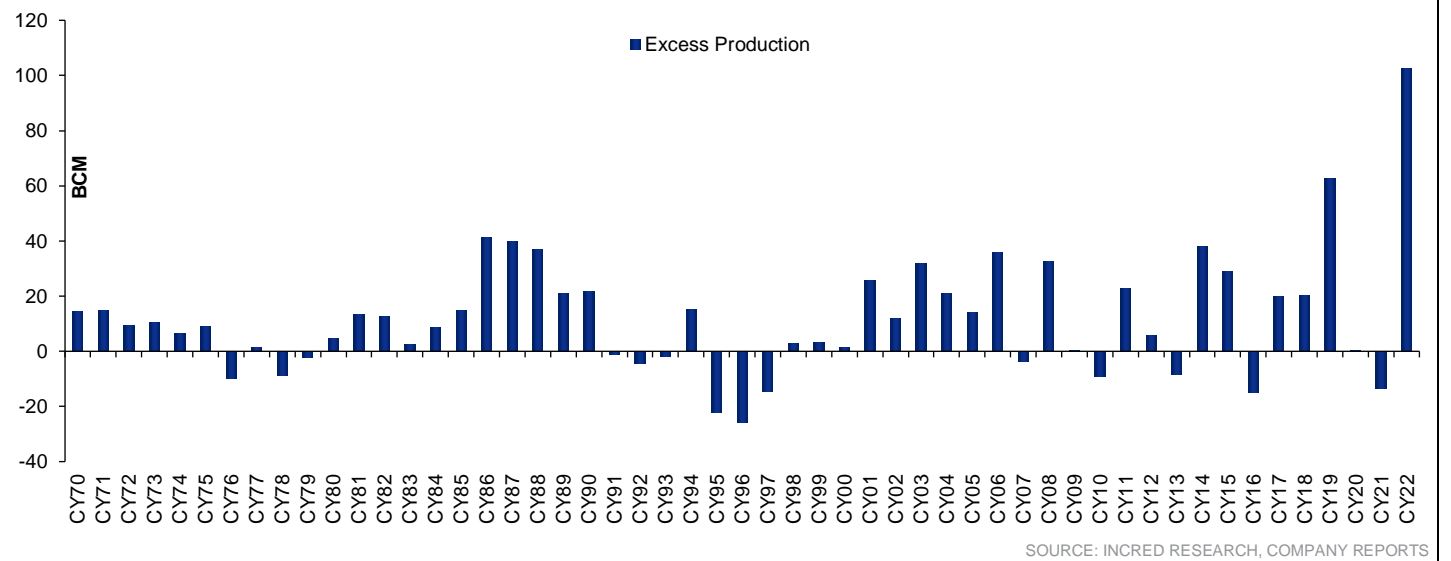
The way US liquefaction capacity is ramping up, it appears there will be a glut of LNG in the global market ➤

Figure 27: In the next three years, globally 240bcm of gas capacity will come online – a portion of this will be sold in the spot market where India will be the biggest buyer



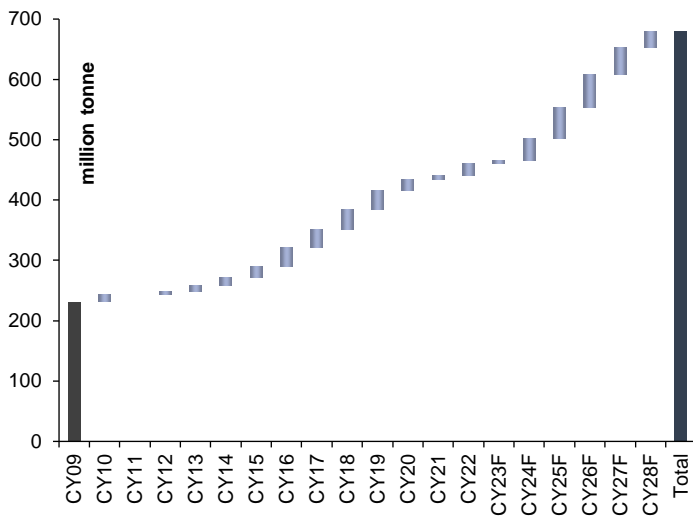
Barring a few years of supply chain shock, global gas production has always been more than demand ➤

Figure 28: Post 2000, global production has always been able to exceed demand (barring a few years)



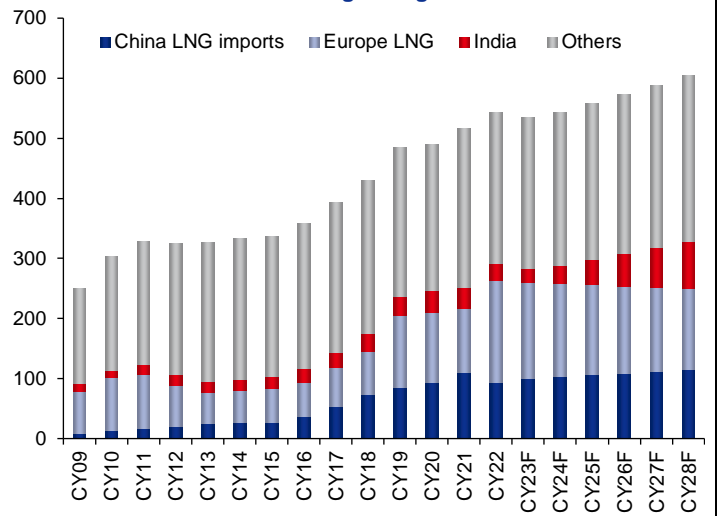
**The dramatic fall in European LNG demand has made life much easier for Indian importers ➤**

**Figure 29: LNG capacity to touch 680mt**



SOURCE: COMPANY REPORTS, INCRED RESEARCH

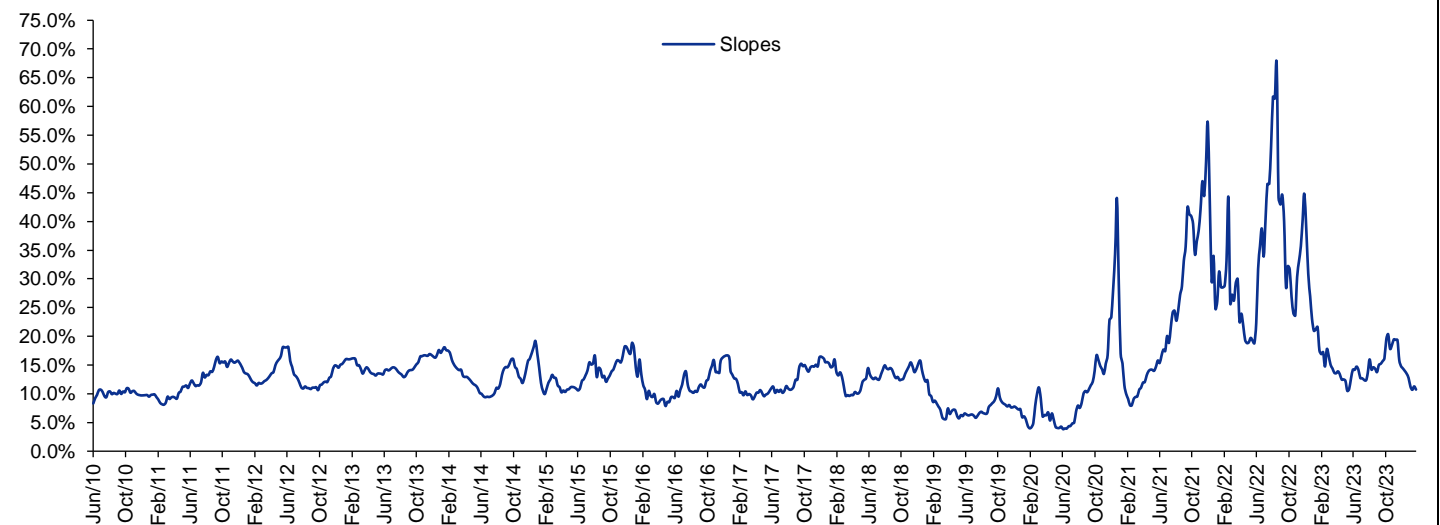
**Figure 30: However, Chinese and European demand is falling, which makes India the fastest-growing LNG market**



SOURCE: COMPANY REPORTS, INCRED RESEARCH

**LNG slope is already falling and we expect it to touch 7-8% in the coming few quarters ➤**

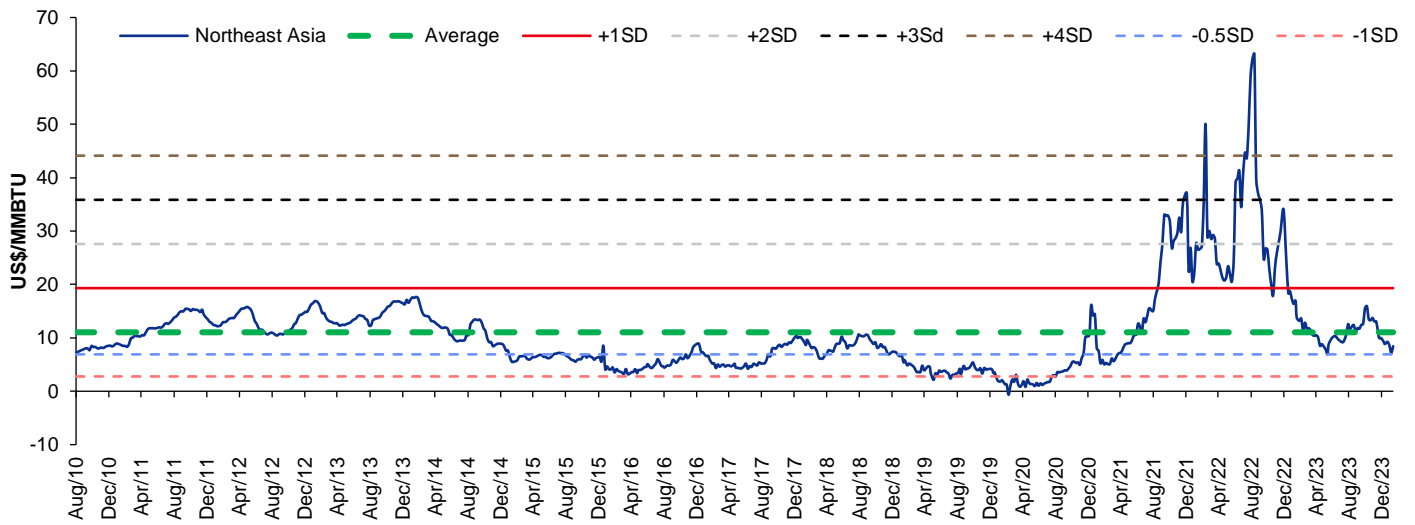
**Figure 31: As denoted in Figs. 30 and 31, the kind of LNG oversupply we are going to witness in the next 23 years hasn't been seen over the past 15-20 years; we expect the slope to go to an uncharted lower territory**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**We are in for an oversupply scenario but exporter netbacks are still very high ➤**

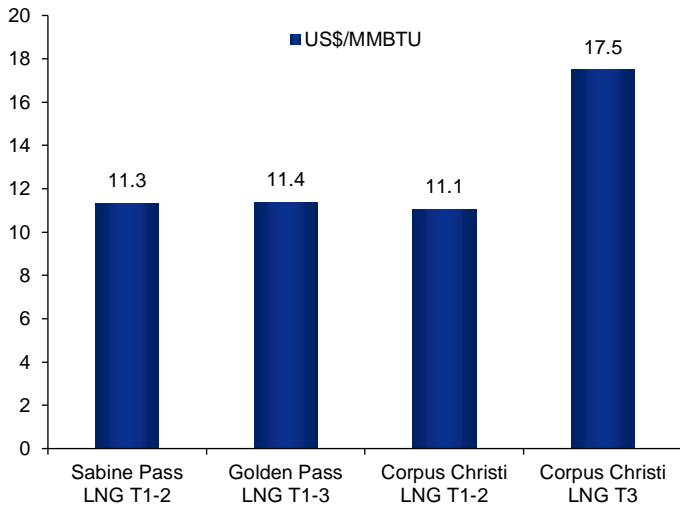
**Figure 32: While Qatar's netback has fallen from its peak, it's still a way high compared to the period between 2015-20; don't be surprised if spot LNG prices fall to US\$7/mmBtu in the near future**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

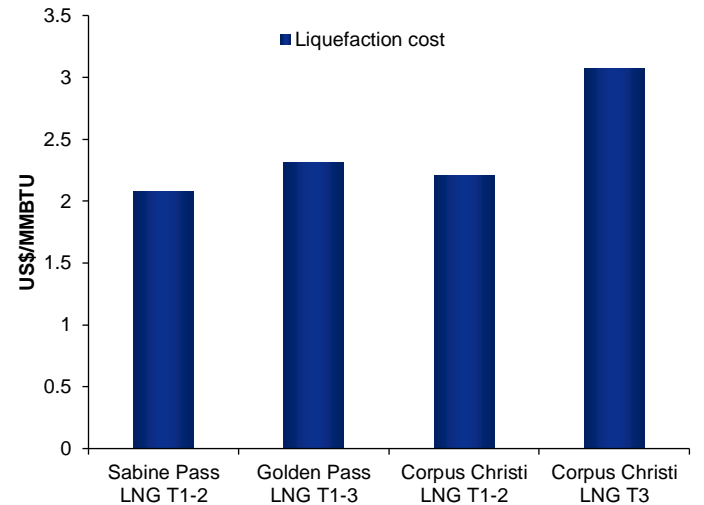
**Even at US\$10/mmBtu, new American capacities will make RoCE in excess of 40% ➤**

**Figure 33: The average marginal cost of new capacity has been at ~US\$11.5/mmBtu**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 34: The liquefaction cost of marginal projects has been at ~US\$2.2/mmBtu**



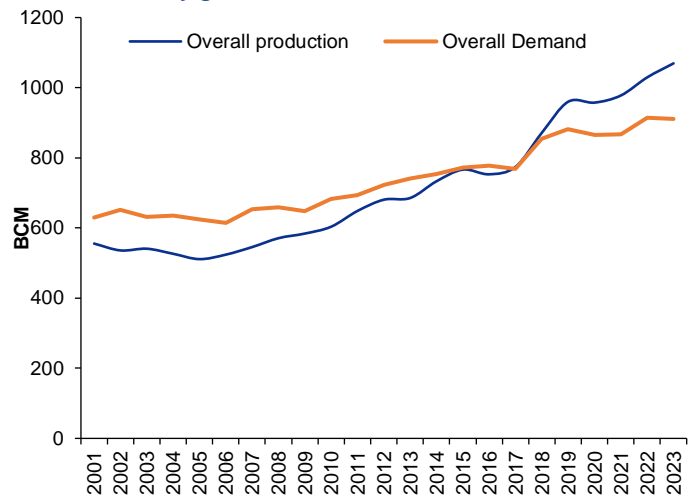
SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 35: At US\$3/mmBtu, gas cost and current price RoCE of a new project is more than 40%**

	Value	Unit
Selling price	10	US\$/mmBtu
Plant life	40	Years
Project cost	11.5	US\$/mmBtu
Liquification cost	2.2	US\$/mmBtu
Debt:equity ratio	3.0	
Interest cost	6%	
Debt cost	0.52	US\$/mmBtu
Base gas cost	2	US\$/mmBtu
Depreciation cost	0.29	
Overall cost	6.01	US\$/mmBtu
Working capital	30	Days
Working capital investment	0.49	US\$/mmBtu
Capital employed	11.99	US\$/mmBtu
RoCE	42%	

SOURCE: INCRED RESEARCH, COMPANY REPORTS

**Figure 36: Over the past few years, the US has been producing 150bcm more dry gas than its demand**



SOURCE: INCRED RESEARCH, COMPANY REPORTS

**As LNG capacity gets ramped up, gas prices will go up and LNG prices will come down, may be to ~7-8/mmBtu**

It's natural that as gas new LNG capacity comes online, gas prices will go up in the US. However, new LNG capacity will also bring down global LNG prices. It's still anybody's guess where the prices will settle down, but we believe that prices can decline to US\$7-8/mmBtu.

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