

Feedback on CERC's Regulations from minority shareholder

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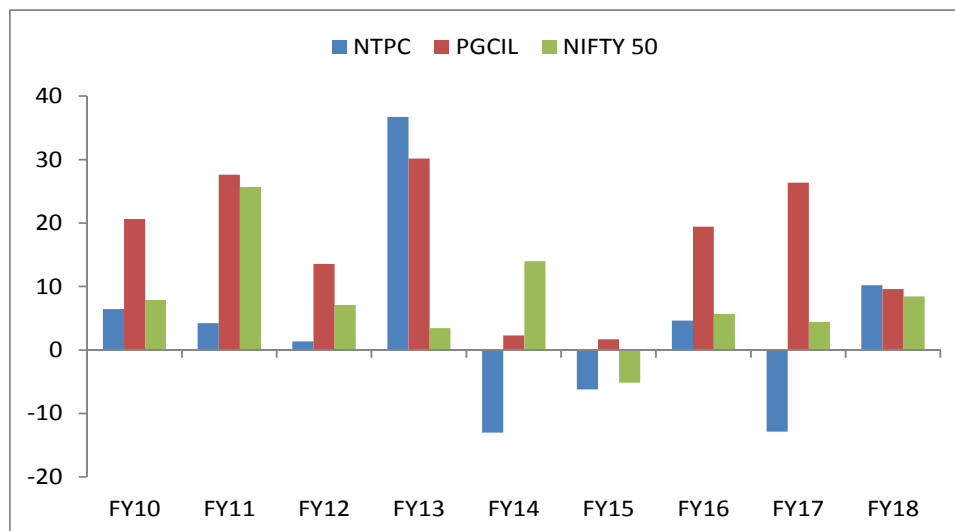
NTPC & PGCIL– Earnings Growth has not reflected growth in gross block

Earnings per share

(Rs/share)	NTPC	PGCIL	NIFTY 50
FY09	10.0	4.0	238.2
FY10	10.6	4.9	257.0
FY11	11.0	6.2	323.0
FY12	11.2	7.0	346.0
FY13	15.3	9.2	358.0
FY14	13.3	9.4	408.0
FY15	12.5	9.5	387.0
FY16	13.1	11.4	409.0
FY17	11.4	14.4	427.0
FY18	12.5	15.8	463.0
CAGR	2.6	16.4	7.7

Since FY09, NTPC's earnings have grown at a CAGR of only 2.6%, despite its GFA increasing 9.5%. Over the same period, PGCIL's and NIFTY50 EPS increased at CAGR of 16.4% & 7.7% respectively

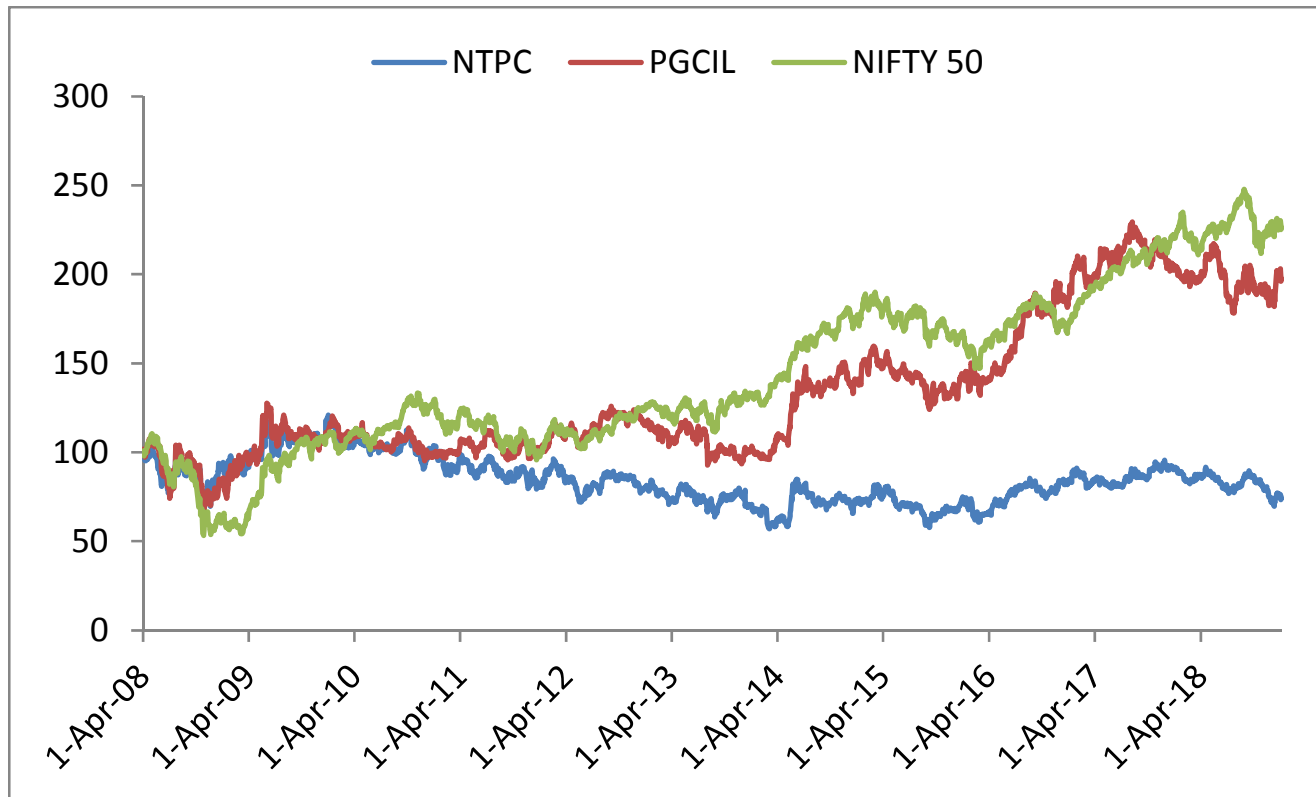
EPS growth YoY



In only 2 out of last 9 years, NTPC was able to outperform NIFTY50's YoY earning growth.

NTPC & PGCIL– Stock underperformed meaningfully over a decade

Indexed share price performance



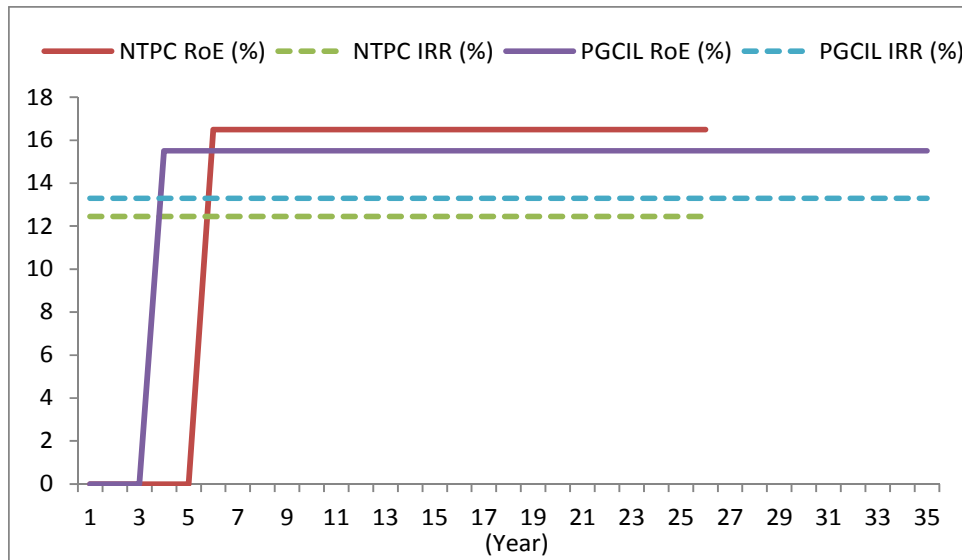
Corresponding to its earnings trajectory, NTPC has consistently and significantly underperformed NIFTY50 due to change in regulatory framework every 5 years. On the other hand, PGCIL, despite bettering NIFTY50 in earnings growth, has marginally underperformed. However, growth is possible only due to regular equity dilution.

Indian utilities trading at significant discount to markets, unlike their global peers

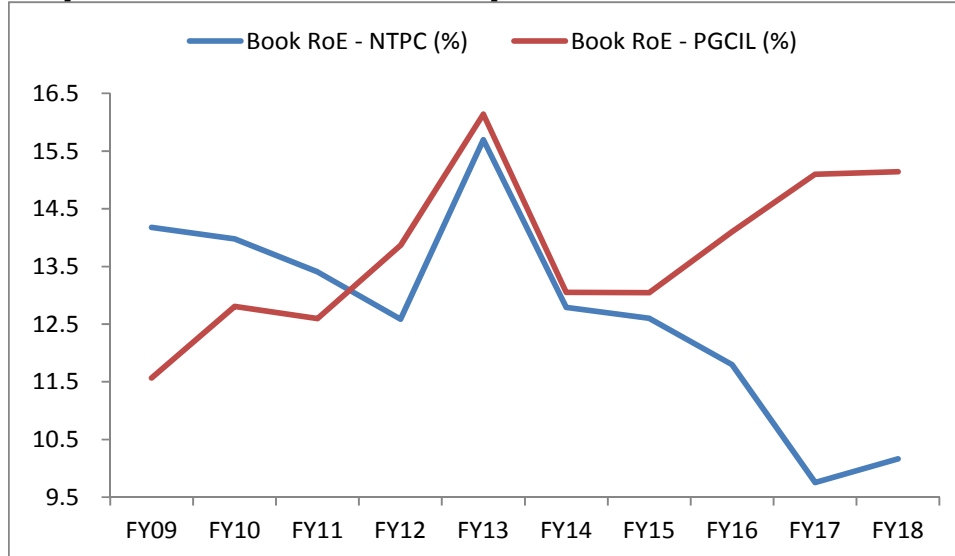
		Stock P/E Valuations	Country Index P/E	Premium/ (Discount)
		FY19E/ CY18	1yr-Fwd	
Powergrid	INDIA	10.2	19.3	-47%
NTPC	INDIA	10.2	19.3	-47%
NHPC	INDIA	9.7	19.3	-50%
Red Electrica	SPAIN	13.4	12.7	6%
Terna	ITALY	13.8	11.7	18%
National Grid	BRITAIN	15.4	13.6	13%
Cemig	BRAZIL	6.4	11.9	-46%
HK Electric	HONG KONG	15	11.2	34%
CLP Holdings	HONG KONG	17.2	11.2	54%
Huaneng	CHINA	16.5	10.7	54%
Fortum	FINLAND	24.4	17.4	40%
Tenega -Malaysia	MALAYSIA	11.9	17	-30%
Glow Energy	THAILAND	17.3	15.1	14%
American Electric Power	UNITED STATES	18.5	17.5	6%
Average Global PER (x)		14.7	14	~8%

No return during construction = IRR at par with COE which means growth is a social service and does not add any shareholder value

RoE & IRR comparison of NTPC & PGCIL



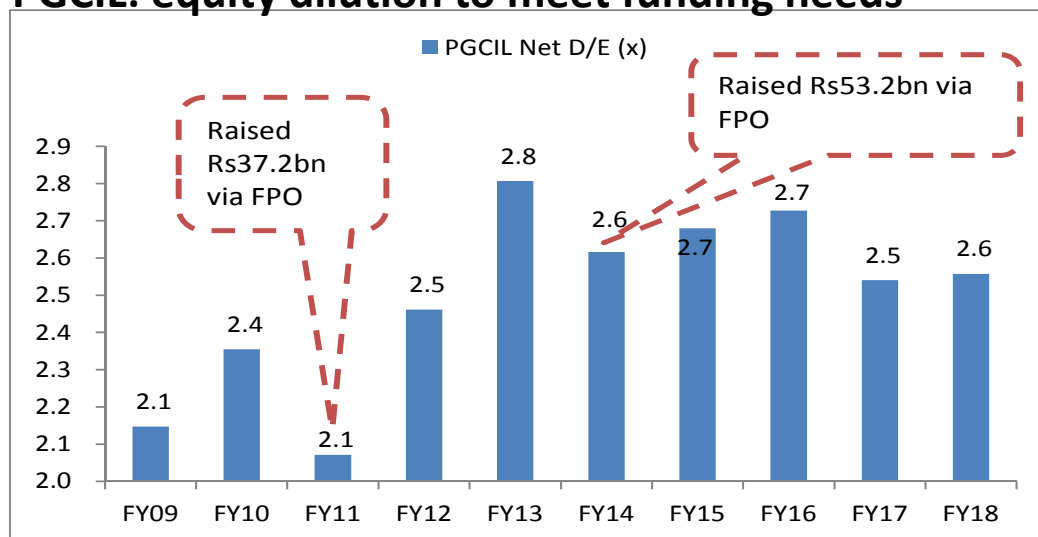
Reported book RoE comparison – NTPC vs. PGCIL



- In the given illustration, RoE for NTPC & PGCIL is assumed at 16.5% & 15.5% respectively. Factoring a 5yr & 3yr execution period, IRR for NTPC was 12.4% and that for PGCIL was 13.3%, which does not give much premium to India's Cost of equity of 12.5% for NTPC and only marginal for PGCIL.
- Despite factoring higher RoE for NTPC (for higher normative savings and PLF-linked incentive), longer execution period lower IRRs
- This, in addition to shorter agreement period, translates into lower NPVs for NTPC's projects

Minority investors – supporting growth & divestments

PGCIL: equity dilution to meet funding needs



Govt. stake sale and dilution in NTPC & PGCIL

Details	No. of shares (mn)	Amount (Rs mn)	Rate of issue (Rs/share)
<u>NTPC</u>			
Feb'13	OFS	783	114,286
Feb'16	OFS	412	50,388
Aug'17	OFS	412	69,270
Total govt. stake sale	1,608	233,944	
<u>PGCIL</u>			
Nov'10	FPO	420.9	37,210
Nov'10	OFS	420.9	37,210
Dec'13	FPO	601.9	53,210
Dec'13	OFS	185.2	16,370
Total govt. stake sale	606	53,580	
Total dilution via FPO	1,023	90,420	

*Does not include stake sale via ETFs

- Between FY11-18, PGCIL incurred a capex of Rs1.7tn, requiring equity contribution worth ~Rs500bn
- Of which, ~Rs410bn was provided for via retained earnings and the remaining Rs90bn was raised from the equity markets
- In addition to this, government has sold stake worth Rs234bn in NTPC and Rs54bn in PGCIL post listing

Increased risk perception leads higher implied cost of Equity

NTPC & PGCIL – implied cost of Equity

(Rs mn)	NTPC	PGCIL
Implied cost of equity/Discount rate(%)	16.4	16.6

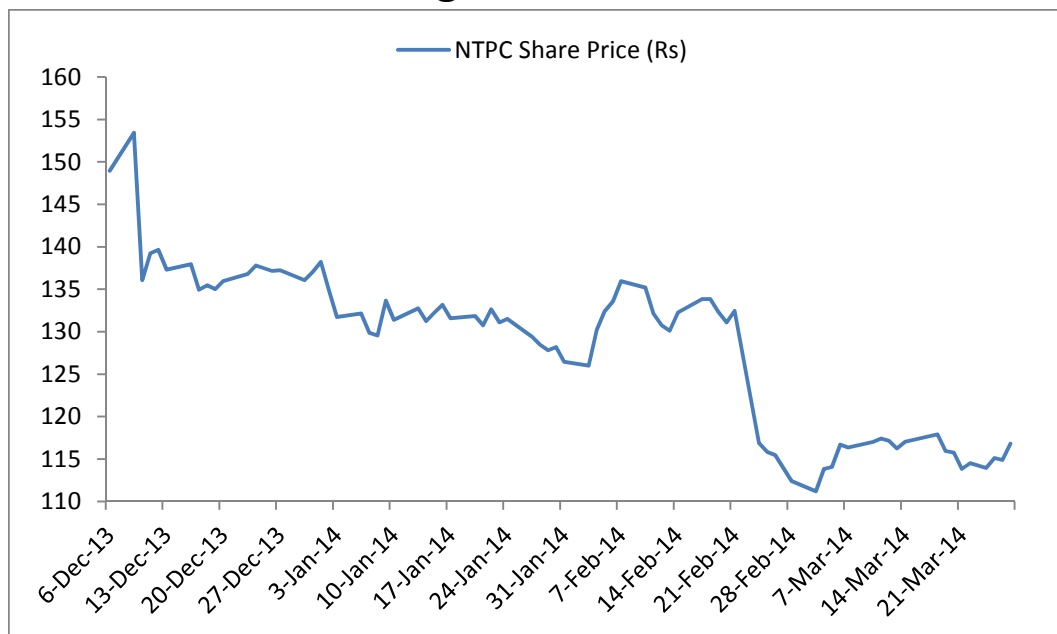
Market current seems to be assigning a implied cost of equity of >16% to both PGCIL and NTPC, despite actual cost of equity being in the range of 12-13%, highlighting:

- Increased investor risk perception – given the regulatory overhang and their recent earnings under-performance led by operational and/or financial issues
- Increase/possibility of increase in supply of shares on account of government divestments

Regulatory stability can provide some respite, in terms of lower risk perception

NTPC stock reaction to 2014-19 regulatory changes – a case in point

NTPC share price movement b/w 2014-19 draft notification & final regulation

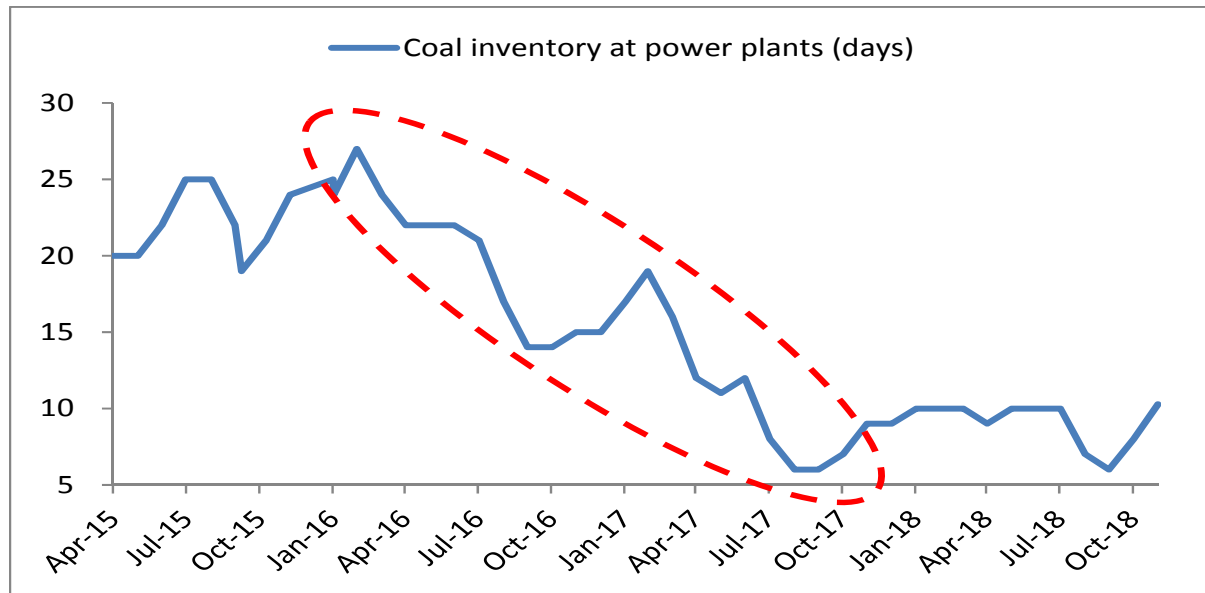


From draft notification to final regulation, NTPC's stock price corrected 27.5% during 2014-19 regulatory change

- Commission's decision to change the incentive schemes and normative allowances, during the 2014-19 regulatory change impacted NTPC's earnings negatively and drove stock price down 27.5%, earnings cut was around 30% due to change of regulation

Perils of regulatory changes – change in GCV measurement method & its impact

Decline in coal inventory at power plants post change in GCV measurement method



Regulations need to take all stakeholders on board .
Regulations change without feedback system and openness to correct has far deeper impact and many times underestimated.

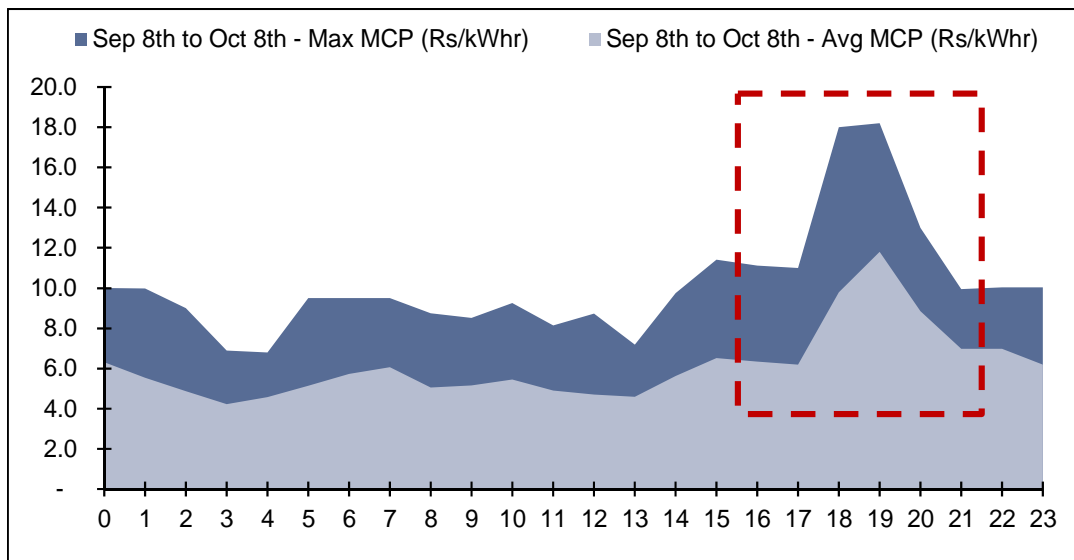
- In Jan'16, CERC directed NTPC to change its coal GCV measurement method from 'as fired' to 'as received' (at wagon unloading point). This essentially resulted in non-pass through of coal handling and storage losses (which were partially unavoidable).
- In response to this, power plants reduced coal offtake sharply, reducing coal inventory from >20 days to <10 days in 2017
- **However, when power demand began picking up, Coal India and Railways were unable to meet the sudden spurt in coal demand – resulting in coal shortages, sharp increase in spot power prices, load shedding and fixed cost under-recovery for NTPC**

Peak demand supply situation and IEX prices – are we going wrong on capacity addition?

Current capacity and pipeline can at best meet FY23E peak demand

	FY18	FY19E	FY20E	FY21E	FY22E	FY23E	FY24E	FY25E
Peak demand	164.1	172.4	181.2	190.5	200.2	210.4	221.1	232.4
Assuming 5.1% natural growth - based on historical data	-	8.4	8.8	9.2	9.7	10.2	10.7	11.3
Incremental demand from SAUBHAGYA	-	4.8	4.8	4.8	-	-	-	-
Increased peak demand (ex-industrial)	164.1	177.2	186	195.2	205	215.2	225.9	237.2
Peak capacity (normalized for availability)	186.9	192.9	198.9	204.9	210.9	216.9	216.9	216.9
Peak capacity as % of peak demand	113.9	108.9	106.9	105	102.9	100.8	96	91.5

IEX MCPs b/w Sep 8th – Oct 8th 2018

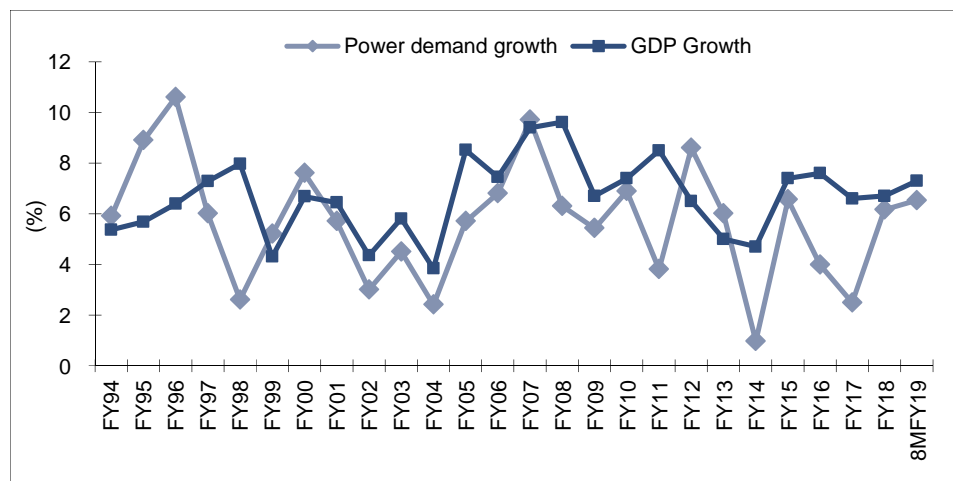


Spot power prices surged to historical highs between Sep-Oct'18 on account of unexpected increase in peak demand, decline in wind power generation, coal shortage and maintenance outages

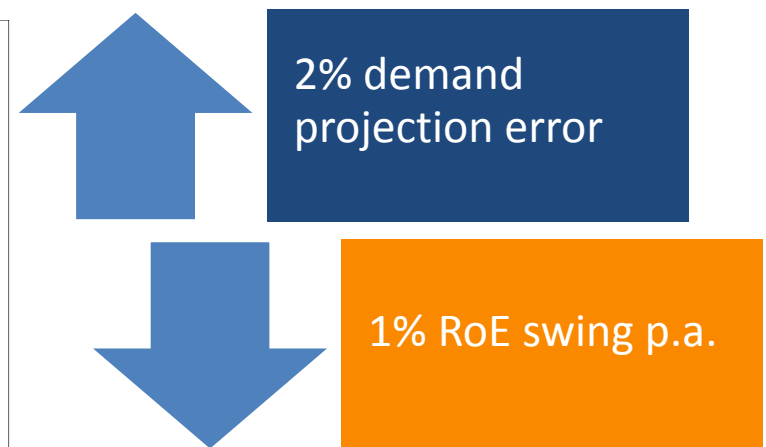
Power Demand & Supply – base load deficit to come back again in next 5 years

- Overcapacity in the near term; meaningful improvement only post FY20.
- Considering LT growth rate (last 20 years) of 6%, demand growth has not surprised negatively in the recent past. Last 20 months have reinstated the 6% trajectory
- CEA has reduced its demand growth estimate to 7% for the next decade.
- At 7% YoY demand growth, thermal PLFs, with current capacity addition plan, will jump from 57-58% to 78% in FY27 (78% PLF was peak in last decade).
 - At 6% YoY demand growth, thermal PLFs will be ~68% in FY27.
- We believe India will be base deficit by FY24 while the returns in the sector have been under the cost of equity, hence no private players (strategic & private equity) keen on capex. 70% of players already stressed. As PPA durations shorten risks increase significantly even for lenders and equity requirements increase. Hence, dependence on NTPC for growth in sector is high.

Power demand growth vs GDP growth

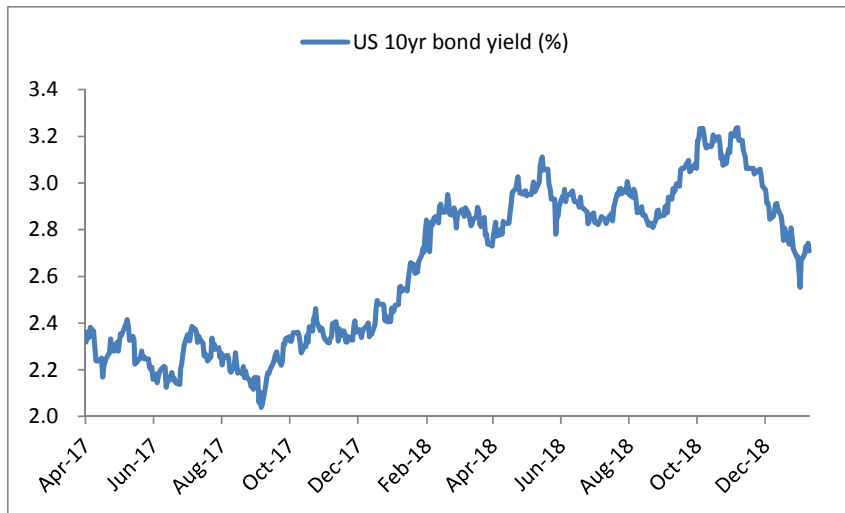


Source: CEA, MOSPI, PFC

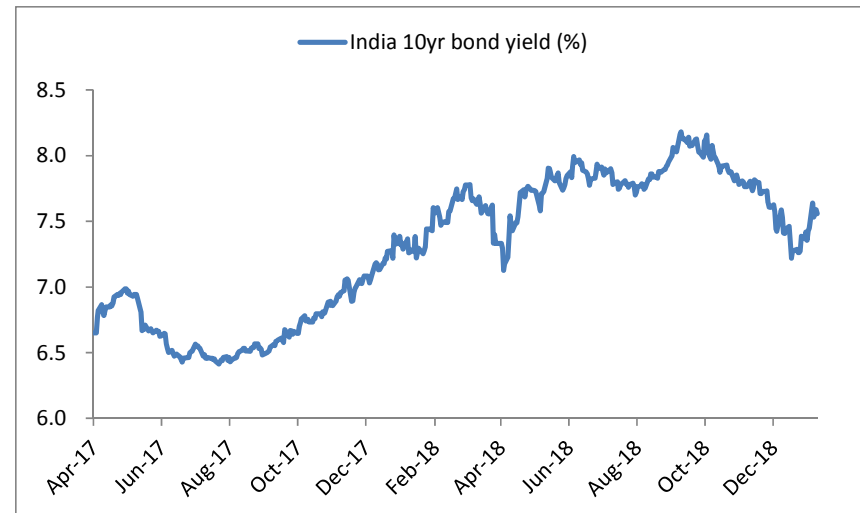


Global interest rate & USD INR trajectory – QE reversal in US will mean a lot of very low cost PE money going back – impact on renewable sector reasonable

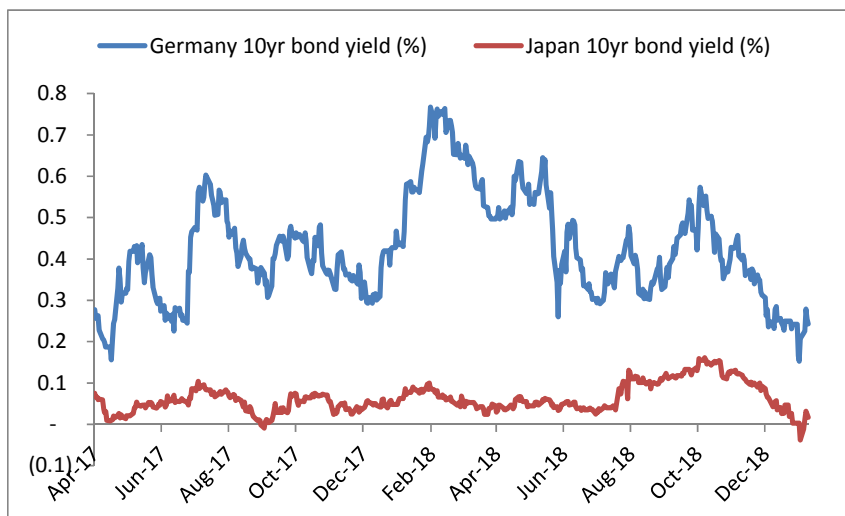
US 10-yr bond yield



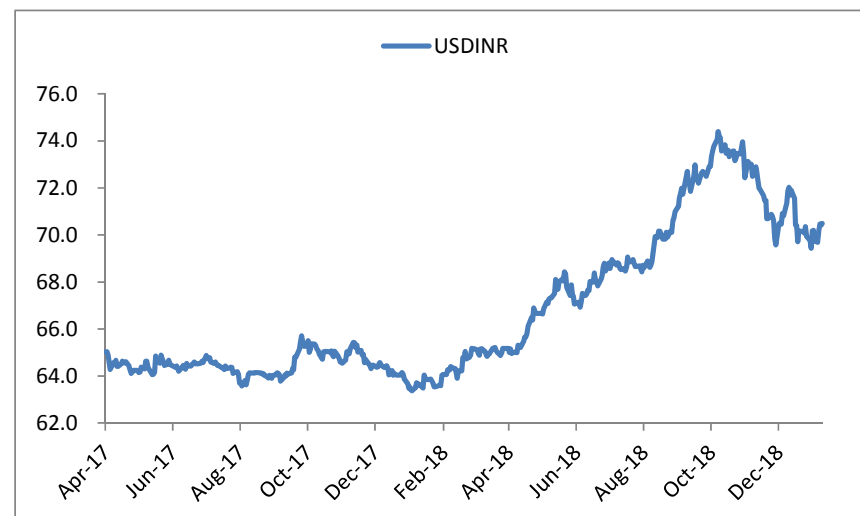
India 10-yr bond yield



Japan and Germany 10-yr bond yields



USD INR exchange rate



Capital available for redeployment in sector declining at fast pace

- Govt introduced mandatory minimum 2% spend towards CSR (of 3 year avg profits) which is not a pass through
- As per DIPAM guidelines, Govt Cos have to pay dividend of 5% or 30% of profits despite high capex.
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- Cash being utilised in buybacks, bonus debentures leading to lower savings – *NTPC is no longer cash surplus company*
- Tariff pressures have arisen not due to inefficiencies but due to price hikes by Indian Railways (higher dependence on freight) and Coal Cess
- Acquisitions of other Cos and plants – many State plants are being considered for take over as the States are running it inefficiently and it has become stranded capital and consuming more than required coal/resources. Avg PLF for 65GW of state plants have operated at ~50% for last 5 years leading to high fixed cost and variable cost burden

Net Fixed asset approach will impact investments and optimum utilization of resources

- Moving from a GFA approach to NFA and reducing the equity by ~60-70% for older plants will disincentives developers to run the plants mainly as the breakeven PAF for these plants will increase from 68% to 78% and hence coal availability issues can lead to losses instead of any kind of savings.
- Low incentives to run the plant will not attract efficient human resource, low priority on coal sourcing from basket availability further leading to risks of deterioration of operational parameters. This may lead to higher coal usage in a worsening of coal supply scenario
- Running of a plant does not only entail RoE, it looks at a larger issue of deployment of resources.
- As Co-owners of developers we would prefer these Cos rather not operate plants which do not contribute to profits and may run the risks to incur losses due to uncontrollable factors.
- More than 25GW capacities are currently above 25 years of age, which if shut down may lead to higher prices and deficit situation.
- Public money has been invested in the listed Cos on a promise of an exiting business model and such a change would erode it significantly as the book value of such capacities is eroded by 60-70% immediately. This will become a major deterrent for future investments.
- **For up-keeping the thrust of nation building, “equity” and “brand equity” both are very important which is a function of consistency**

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This principal applies equally to stock market.
If one does not respect market , market does not respect him.

Cost of equity is not a theoretical number derived from country risk- But its balance where market participant are willing to invest in a sector based on historical experience.

Frequent changing regulations increases risk perception and it reflects in higher cost of Equity.

Current High implied cost of Equity in NTPC and Power grid corroborates the view stated above.