MOTILAL OSWAL

31 August 2020

Initiating Coverage | Sector: Utilities

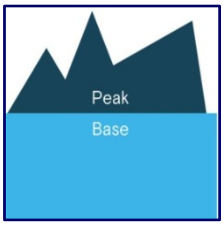
IEX

GREEN MARKET

REAL TIME MARKET

LONG DURATION CONTRACTS

GAS EXCHANGE



DAY-AHEAD MARKET

Long-term play in Short-Term market

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Contents: Indian Energy Exchange | Long-term play in Short-Term market

Indian Energy Exchange

BSE SENSEX	S&P CNX
39,467	11,648

Stock Info

Bloomberg	IEX IN
Equity Shares (m)	30
M.Cap.(INRb)/(USDb)	57.8 / 0.8
52-Week Range (INR)	203 / 111
1, 6, 12 Rel. Per (%)	8/7/41
12M Avg Val (INR M)	145
Free float (%)	100.0

Financials Snapshot (INR m)

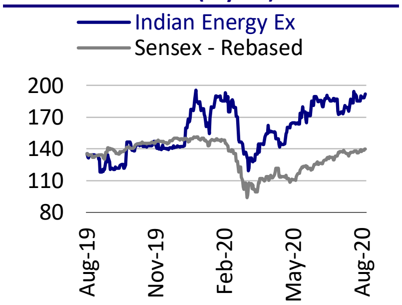
Y/E MARCH	2021E	2022E	2023E
Sales	2,848	3,502	3,960
EBITDA	2,233	2,862	3,227
Adj. PAT	1,825	2,294	2,591
EBITDA Margin %	78.4	81.7	81.5
Adj. EPS (INR)	6.1	7.7	8.7
EPS Gr. (%)	2.6	25.7	12.9
BV/Sh. (INR)	14.9	17.2	19.8
Ratios			
RoE (%)	43.7	47.9	46.9
RoCE (%)	41.4	45.5	44.9
Payout (%)	70.0	70.0	70.0
Valuations			
P/E (x)	31.5	25.1	22.2
P/BV (x)	12.9	11.2	9.7
EV/EBITDA(x)	24.0	18.5	16.1
Div. Yield (%)	2.2	2.8	3.2
FCF Yield (%)	2.5	3.3	4.0

Shareholding pattern (%)

As On	Jun-20	Mar-20	Jun-19
DII	33.8	31.3	33.7
FII	31.6	32.4	20.0
Others	34.6	36.3	46.3

FII Includes depository receipts

Stock Performance (1-year)



CMP: INR193 TP: INR250 (+30%) Buy

Long-term play in Short-Term market

Expect volumes to rise at 20% CAGR; Initiate with Buy

Indian Energy Exchange (IEX) is an electricity exchange that offers a transparent and efficient platform for the Short-Term (ST) trading of power. Over the past decade (FY11–20), volumes on IEX have jumped >4x. With new product launches, a continued oversupplied market, and IEX's competitive positioning, we expect volumes/PAT for IEX to increase at a 20%/19% CAGR over FY21–23. We initiate coverage on IEX with a Buy rating, at TP of INR250/sh based on 30x Sep'22 EPS.

Huge growth potential

India's Electricity market is dominated by long-term power purchases (under LT PPAs), which account for ~90% of electricity generated. The need for an ST market (~10% share) is currently driven by supply disruption, load variations, and price arbitrage opportunities. But, as LT PPAs slowly get utilized and market reforms pan out, the Power market could evolve and shift toward ST. Potential over the longer term for the exchanges/ST remains huge. A look into Europe reveals the two largest European power exchanges account for ~40% of EU's electricity consumption (v/s ~4% in India) – albeit with a possible risk to transaction fees.

Power exchanges have gained share

Power exchanges have gained significant share (>4% in FY20 v/s <2% in FY11) over the past decade, despite the overall share of the ST market remaining flat at ~10% of the total electricity generation. This has been driven by: 1) an efficient price discovery mechanism, 2) better reliability owing to an improved transmission network, and 3) an oversupplied market providing price arbitrage opportunities. Earlier, congestion due to the lack of transmission capacity had led to constraints in clearing of volumes. However, these constraints have reduced with the commissioning of transmission capacities for inter-regional transfers. This improved reliability, along with an oversupplied market, has aided liquidity and enabled the growth of the exchanges.

IEX: Dominant position with a well-evolved platform

IEX has been at the forefront of growth with a dominant position in the exchange market. PXIL, which accounts for less than 5% market share, is its only other competitor. IEX enjoys an early-mover advantage and strong brand recognition among the Energy market participants. Technology innovation, active market participation, and transparent operations have helped the company maintain its market share. ~97% of the traded volumes of electricity contracts in the day-ahead market (DAM) and term-ahead market (TAM) are collectively conducted over IEX. The subsequent liquidity is a deterrent to competition, and we expect IEX to maintain its competitive advantage (given the current market design).

New product launches to aid market share gains

We expect market share gains for IEX to continue with: 1) its entry into the Real-Time Market (RTM), facilitated by higher renewable penetration and peak power management, 2) the launch of Longer Duration Contracts (LDCs), and 3) continued opportunities for Open Access (OA) consumers, backed by an oversupplied market. Expect IEX's share within ST to increase to 51% in FY23 from an est. 44% in FY21, leading to a 20% CAGR in volumes over FY21–23.

Low operating cost structure aids profitability

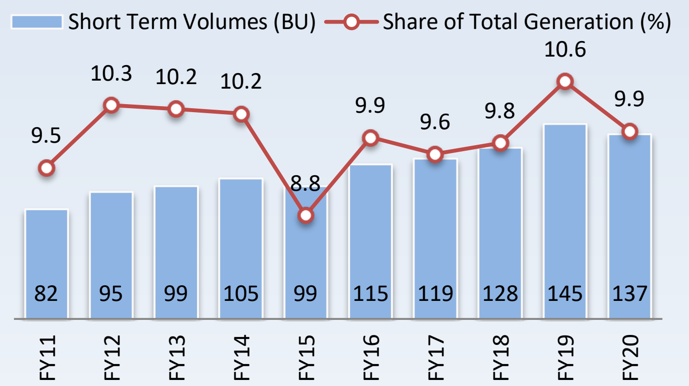
Transaction fee (~90% of IEX's revenue) is the key revenue driver for IEX. The company earns INR0.04/kWh (INR0.02/kWh each from buyer and seller) on each transaction. We expect a 20% CAGR in volumes over FY21–23 to drive an 18% CAGR in revenues. ~10% of IEX's revenue is primarily based on admission and membership fees. We do not expect a significant increase in this regard as most of the participants are part of the exchange. The cost structure is lean, with an EBITDA margin of ~80%. Given the company's lean operating structure, we expect the EBITDA margin to increase by ~190bps, led by a sharp uptick in volumes, resulting in a 20% CAGR in EBITDA and 19% CAGR in PAT over FY21–23. Furthermore, with an insignificant capex requirement and a negative working capital, FCF generation would remain high and broadly mimic growth in profitability.

Valuation and view

IEX trades attractively (at ~22x FY23) with global peers (global exchanges trade at avg. ~27x CY22E) for higher growth (~19% CAGR over FY21–23 v/s <10% avg. CAGR for global exchange peers) and return profile. With low capital expenditure and no working capital requirements, RoEs would continue to remain high at ~45%. Accordingly, we value the stock at 30x Sep'22 EPS, implying TP of INR250/sh. At 30x PE, our TP largely builds in a sustained volume growth trajectory over the next decade. DCF at our TP implies volumes on the IEX would have to grow at a 16% CAGR over FY21–30 (with terminal growth of 6% post FY30). Key risks include: *a cut in transaction fees, increased competition intensity, stagnant share of the ST market, and a change in market design*. Growth in the gas exchange platform could provide upside.

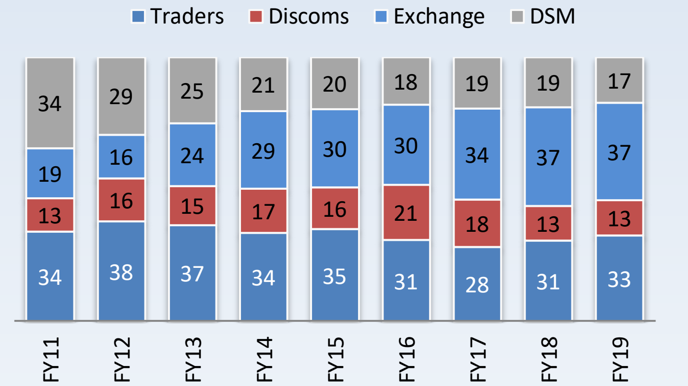
STORY IN CHARTS

Exhibit 1: India's ST market accounts for ~10% of generation



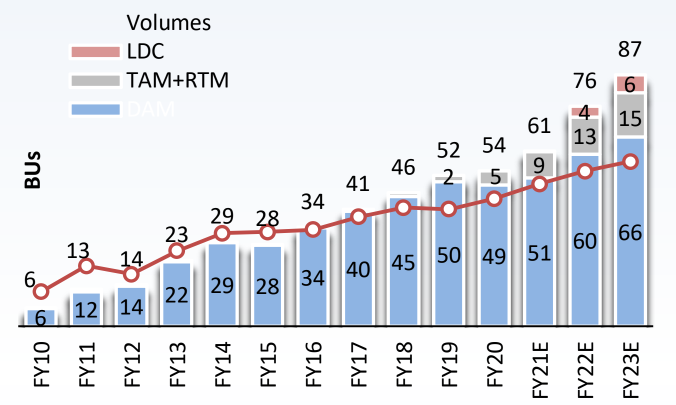
Source: CERC, CEA, MOFSL

Exhibit 2: Within ST, exchanges have gained share



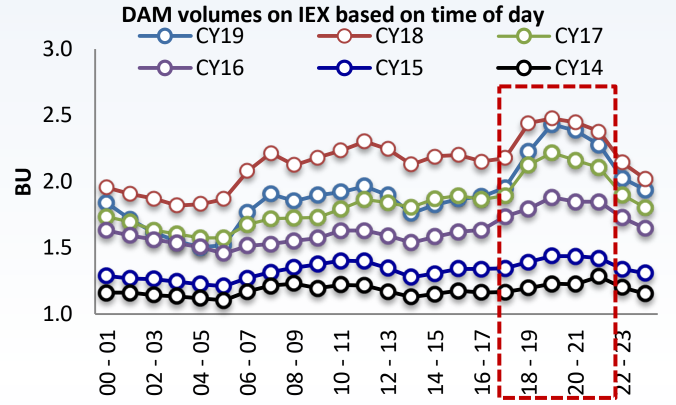
Source: CERC, MOFSL

Exhibit 3: Expect market share gains to drive 20% volume CAGR over FY21–23 for IEX, led by…



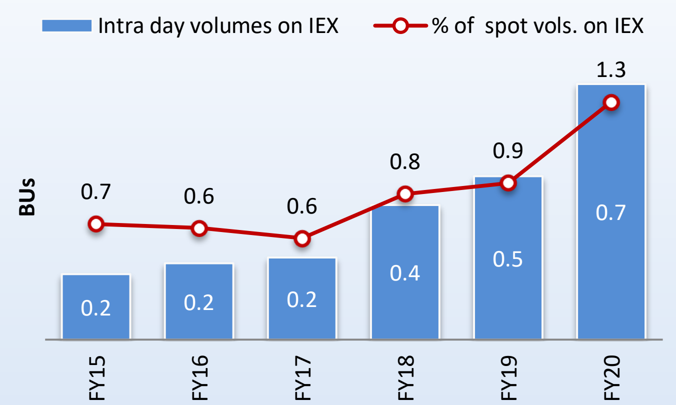
Source: Company, MOFSL

Exhibit 4: …#1: continued dependence on peak power management and…



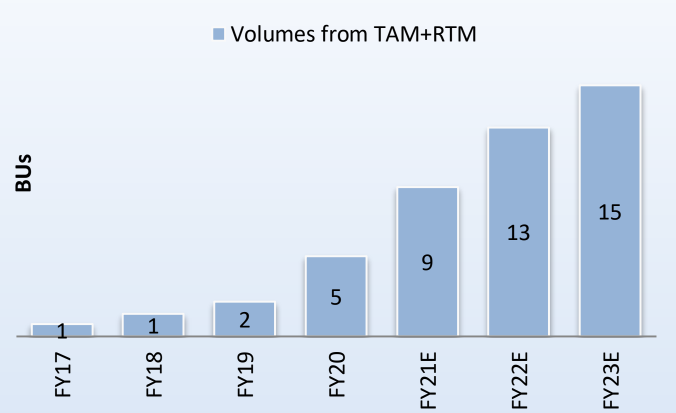
Source: Company, MOFSL

Exhibit 5: …gradual movement towards trading in intraday and real time



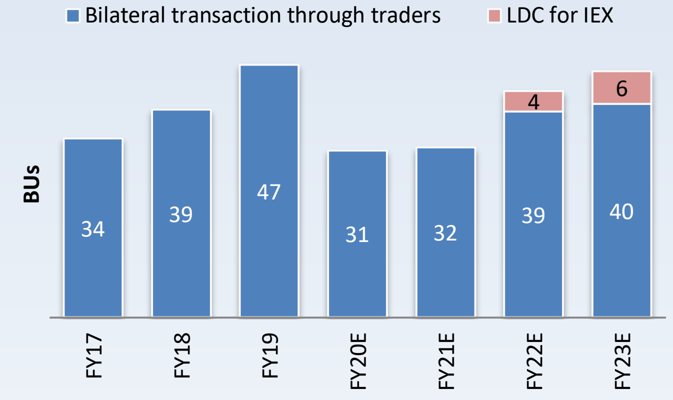
Source: Company, MOFSL

Exhibit 6: Launch of RTM products would aid this and also help garner share from DSM



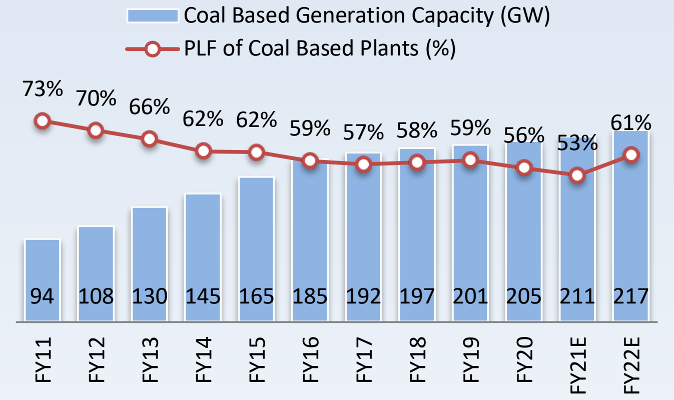
Source: Company, MOFSL

Exhibit 7: #2: Entry into LDC would help it get a foot in the bilateral market…



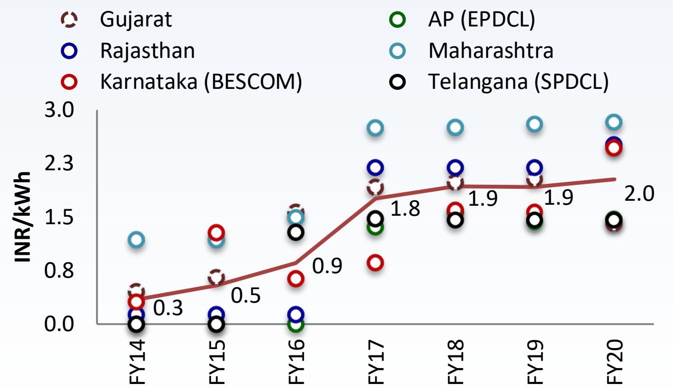
Source: CERC, MOFSL

Exhibit 8: #3: An oversupplied market would keep prices in check and provide price arbitrage opportunities



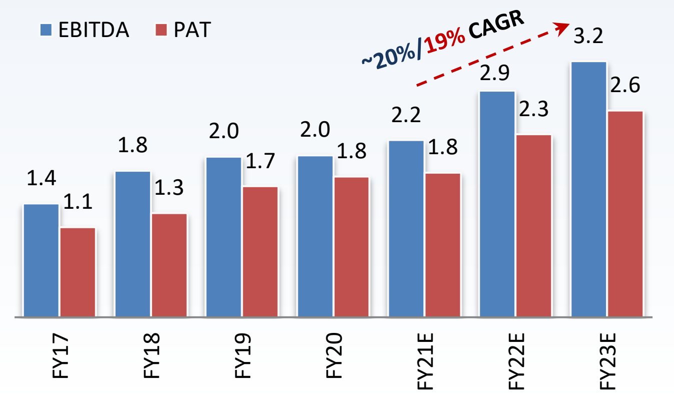
Source: CEA, MOFSL

Exhibit 9: We do not expect a large increase in CSS/AS charges for OA by state DISCOMs (as seen before)



Source: State DISCOMs, SERCs, MOFSL

Exhibit 10: Expect EBITDA/PAT to grow at 20%/19% CAGR over FY21–23, led by volume growth



Source: Company, MOFSL

Exhibit 11: The stock trades attractively given its superior RoE and growth; We initiate coverage on IEX with a Buy rating, at TP of INR250/sh based on 30x Sep'22 EPS

	P/E			EPS Growth (%)			RoE (%)		
Domestic	**FY21E**	**FY22E**	**FY23E**	**FY21E**	**FY22E**	**FY23E**	**FY21E**	**FY22E**	**FY23E**
IEX	31.5	25.1	22.2	2.6	25.7	12.9	43.7	47.9	46.9
BSE	20.9	18.0	17.1	-0.8	16.2	5.0	4.7	5.4	5.6
MCX	34.6	28.0	25.4	5.2	23.6	10.3	17.5	19.7	19.5
Average	**29.0**	**23.7**	**21.6**	**2.3**	**21.8**	**9.4**	**22.0**	**24.3**	**24.0**
Global	**CY20E**	**CY21E**	**CY22E**	**CY20E**	**CY21E**	**CY22E**	**CY20E**	**CY21E**	**CY22E**
NASDAQ	22.1	22.0	20.3	17.8	0.3	8.4	16.7	16.1	21.1
ICE	23.7	22.7	20.9	13.7	4.3	8.5	13.9	14.0	14.8
CME	24.9	24.8	23.6	3.4	0.5	4.8	9.4	9.3	9.9
Deutsche Börse	24.2	23.7	21.8	8.7	2.2	8.5	20.0	19.3	18.8
London Stock Exch.	43.1	38.1	35.0	4.2	13.2	8.7	16.2	18.4	17.3
HK Exch.	43.9	38.1	34.2	15.6	15.3	11.5	23.9	26.1	27.9
Singapore Exch.	21.4	21.2	20.3	-7.6	1.0	4.2	33.6	31.7	30.8
DFM	43.9	35.1	29.3	32.6	25.0	20.0	2.2	2.9	NA
BME	21.0	20.7	20.3	6.5	1.8	1.9	32.7	31.4	36.4
Japan Exchange	31.4	29.9	28.5	2.3	4.8	5.1	15.0	15.0	NA
ASX	35.1	34.3	32.8	-1.8	2.2	4.5	13.1	13.3	13.8
Bursa Malaysia	26.2	31.2	31.8	62.6	-16.0	-1.9	39.7	31.8	30.3
Average	**30.1**	**28.5**	**26.6**	**13.2**	**4.5**	**7.0**	**19.7**	**19.1**	**22.1**

Note: Estimates for IEX, BSE and MCX are MOFSL estimates

Source: Bloomberg, MOFSL

India's ST Power market accounts for 10–11% share

But, exchanges have doubled their market share over the past decade

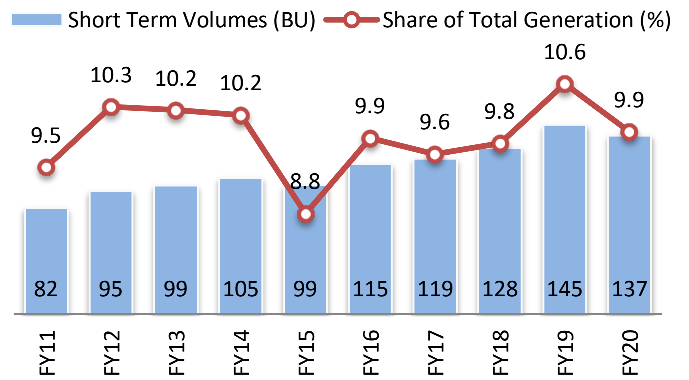
- **India's ST market accounts for 10–11% of the total electricity generation. Its share has remained stagnant over the past decade.**
- **However, within ST, exchanges have doubled their market share to ~40% from <20% during this period.**
- **Improved reliability –aided by expansion in the transmission network, transparent price discovery, and subsequent liquidity at exchanges have been key factors in driving market share gains.**

The foundation of India's ST market was laid in the Electricity Act (2003). This paved the way for Open Access (OA) purchases, the setting up of power exchanges (in 2008), and trading within the ST market. However, over the past decade (FY11–20), the share of ST volumes has been largely steady at 10–11% of overall electricity generation. Given the current regulatory structure and a relatively nascent merchant market, DISCOMs continue to depend on long-term (>12 years) and medium-term (>1 year) contracts for their purchases (~90%) (Exhibit12).

Share of exchanges have doubled over the past decade

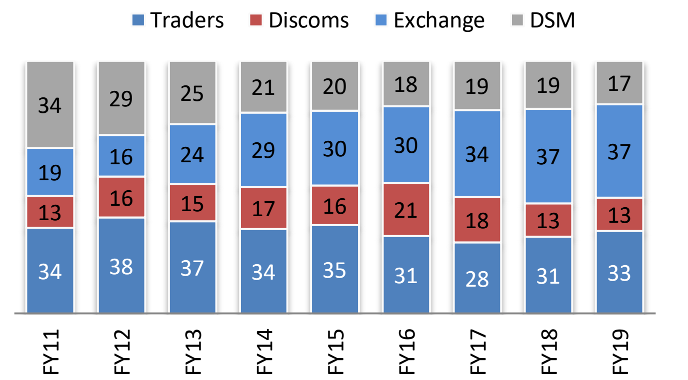
Apart from power exchanges, other forms of trade available in ST are: 1) bilateral contracts through traders, 2) banking transactions, and 3) deviation settlement mechanism (DSM). Bilateral trader contracts are generally longer duration contracts, typically >1 month. Banking is a direct arrangement between the DISCOMs, largely to match seasonal differences. DSM, on the other hand, is a frequency regulation enforced by the grid operator and is not a desired form of short-term trade. **Within ST, power exchanges have almost doubled their market share over the past decade, to ~40% from <20%** (Exhibit 13). This could largely be attributed to improved reliability, transparent price discovery, and the subsequent liquidity at exchanges.

Exhibit 12: Trend in ST volumes



Source: CERC, MOFSL

Exhibit 13: Share of exchanges in the ST market



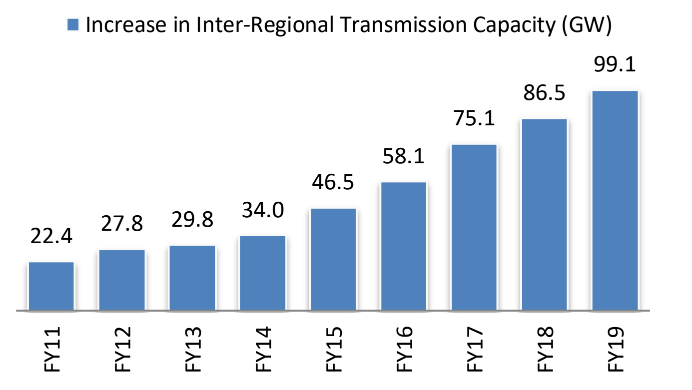
Source: CERC, MOFSL

Improved reliability, liquidity facilitated exchange volumes…

Reliability at exchanges has improved with expansion of transmission capacity

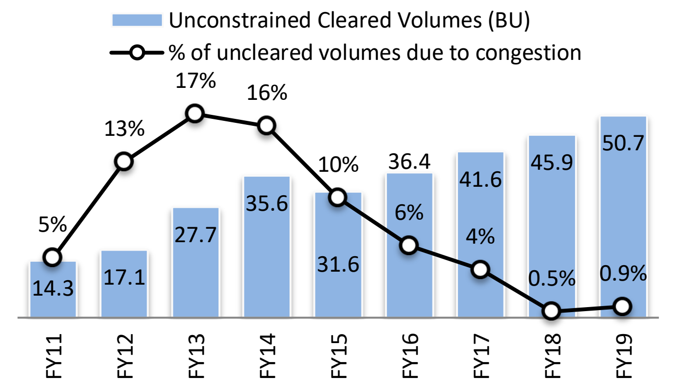
Expansion in the transmission network has been a key enabler for growth in exchanges. Over the years, this has helped reduce constraints on volumes within exchanges and enabled execution at transparent and efficient prices. Previously, the lack of transmission capacity led to constraints related to the clearing of exchange volumes (Exhibit 15). The synchronization of the southern grid with the national grid and commissioning of transmission capacities for inter-regional transfers have lowered these constraints (Exhibit 14) and improved the reliability of the exchanges.

Exhibit 14: Inter-regional transmission capacity (GW)



Source: CEA, MOFSL

Exhibit 15: Unconstrained volumes due to congestion



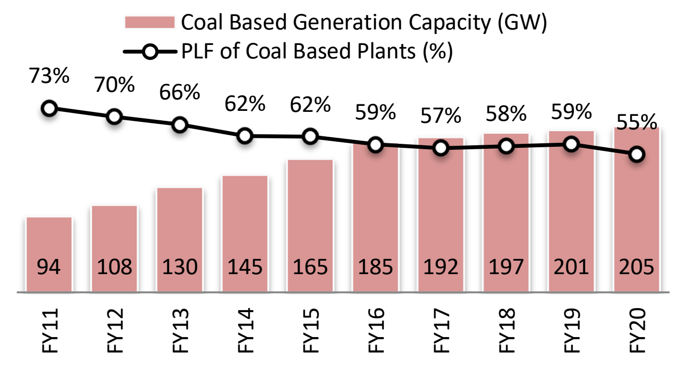
Source: Company, MOFSL

…While an oversupplied market keeps exchange prices in check

Oversupplied market has provided price arbitrage opportunities

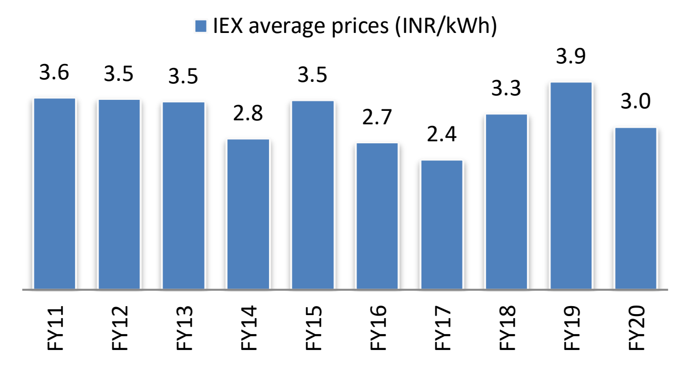
Low prices on the exchange market have additionally continued to drive demand from DISCOMs. India has witnessed large-scale coal generation capacity addition over the past decade. The expeditious pace at which coal capacities were added over FY11–20 was higher than that witnessed in the preceding 40 years. This supply addition far outpaced demand growth, resulting in an environment of overcapacity and low merchant prices (Exhibits 16, 17). The low prices drove demand from DISCOMs (price arbitrage and meeting demand requirements during contingencies or peak time). The exchanges attracted industrial consumers as well; however, their share fell (Exhibit 18) as DISCOMs started introducing additional charges in a bid to protect their base of these high-paying consumers.

Exhibit 16: India's coal-based capacity and PLF



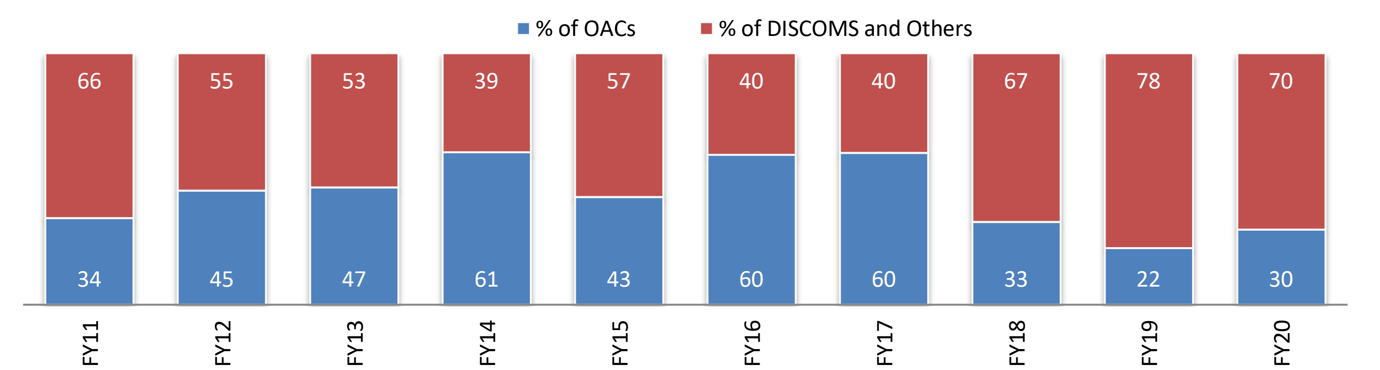
Source: CEA, MOFSL

Exhibit 17: Avg. prices on IEX



Source: Company, MOFSL

Exhibit 18: Mix of DISCOMs and open access consumers (OAC) in DAM volumes traded on IEX



Source: Company, MOFSL

ST market: An inherent dependence remains

Current environment offers price arbitrage opportunities

- **India's Electricity market is dominated by long-term PPAs. However, there remains an inherent need for ST given the demand from contingency events, peaking power, and price arbitrage opportunities.**
- **Over the next three years, we consider ST volume share to remain at 10–11%. However, there is scope to increase power towards ST as LT PPAs are utilized and market reforms (such as derivative contracts) get introduced.**
- **Furthermore, a shift to a market-based design through the implementation of MBED could catapult volumes in ST.**

At the start of a fiscal year, each state DISCOM determines its annual power requirement and the corresponding means to source power (based on merit order). A look into some of the major states' tariff orders suggests there are sufficient long-term PPAs in place to meet the requisitioned demand. However, factors such as: (1) disruption in / the unavailability of supply and (2) an unanticipated surge in demand have driven DISCOMs' dependence on ST volumes, to a large extent, in recent years (Exhibit 19, MSEDCL case study). Furthermore, given the oversupply situation, which has supported lower ST prices, the ST market has also offered price arbitrage opportunities. This situation has been rather apparent in the COVID-19-led nationwide lockdown, which has resulted in low prices on the exchanges.

From a broader perspective, though, the country's Electricity market is dominated by longer term contracts. DISCOMs' dependence on exchanges remains on a contingency basis or for cost optimization purposes. Besides, long-term PPAs for central- and state-owned thermal capacities of 25–30GW are still under construction. In our view, the overall market would remain dominated by such long-term purchases over the next three years, unless the market design changes. However, as these LT PPAs are utilized and as market reforms get introduced (such as the possibility of derivative contracts), the Indian Power market could evolve and start moving more power towards the short term.

Exhibit 19: DISCOMs' procurement from ST market – Forecast v/s Actual

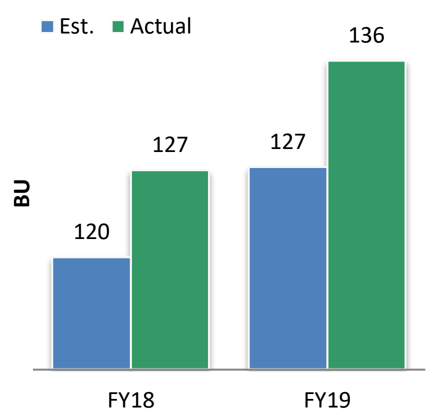
DISCOMs	State	ST Volume Forecast (MU)				ST Volume Actual (MU)		Difference (MU) Actual v/s Forecast		FY19 ST Vol. purch. as a % of total PP	
		FY18F	FY19F	FY20F	FY21F	FY18A	FY19A	FY18	FY19	Forecast	Actual
GUVNL	Gujarat	0	0	1,337	3,150	6,920	8,535	6,920	8,535	**0.0**	**8.6**
MSEDCL	Maharashtra	0	0	0	0	4,056	5,823	4,056	5,823	**0.0**	**4.3**
BSPHCL	Bihar	410	1,708	1,620	554	4,914	5,179	4,504	3,471	**5.1**	**17.2**
SPDCL, EPDCL	AP	0	1,664	1,112	4,949	2,820	5,544	2,820	3,880	**2.7**	**8.8**
AVVNL, JVVNL, JdVVNL	Rajasthan	0	0	0	NA	598	1,348	598	1,348	**0.0**	**1.6**

Note: ST vols. forecasts indicate DISCOMs est. in tariff filings; ST vols. actual excludes DSM to the extent available
Source: State DISCOMs, State Regulatory Commissions, MOFSL

MSEDCL: Surplus power, but dependence remains on ST

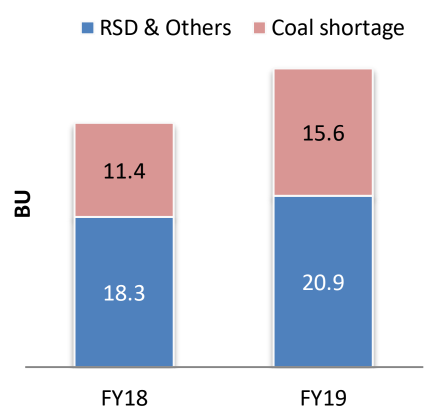
- Maharashtra's public DISCOM, MSEDCL, is power surplus, with contracted PPAs of ~30GW (o/w Renewables: ~8GW).
- This, against base demand of ~18GW and peak demand of ~21GW, implies the DISCOM has sufficient available power to meet its demand requirements. Accordingly, as per the tariff orders, there is no requirement for MSEDCL to dip into the ST market.
- However, supply disruption (primarily on coal availability issues), load fluctuation, opportunistic prices on the market, higher demand from consumers, and lower renewable purchases resulted in MSEDCL procuring ~4% of its power purchase requirements from the ST market.
- Some of the differences between forecast and actual purchases, which necessitated this dependence, are highlighted below:

Exhibit 20: MSEDCL – Power purchase



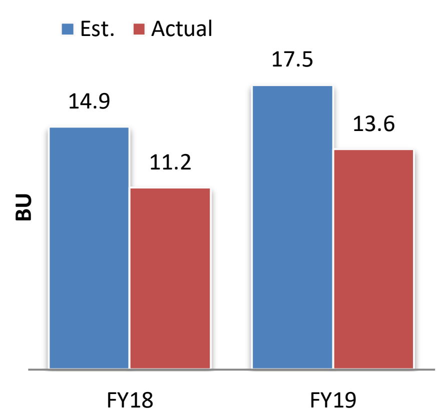
Source: MERC, MSEDCL, MOFSL

Exhibit 21: MSEDCL – Units lost



Source: MERC, MSEDCL, MOFSL

Exhibit 22: Purchases from renewables



Source: MERC, MSEDCL, MOFSL

- Supply disruption due to the unavailability of coal played a major part, with the DISCOM losing 11BU/16BU annually in FY18/FY19 due to the coal shortage, thereby resulting in decline in the power available to meet its demand.
- Moreover, the coal shortage issue was accentuated largely in Sep and Oct and was not equally spread throughout the year. Accordingly, the need to fall in the Short-Term market came with the DISCOM procuring ~2.3BUs from IEX in Sep and Oct'18.
- Generation from renewable energy may fluctuate (depending on wind patterns, solar radiations, etc.), and our interactions with MSEDCL suggest wind PLFs were lower than anticipated.
- Furthermore, capacity commissioning / tie-ups in renewables did not happen as envisaged. Accordingly, MSEDCL procured ~11BUs/14BUs from renewables v/s ~15BUs/17BUs estimated in FY18/FY19. Such variability in renewables has added to the need to depend on the ST market.
- Spurts in demand add variability in power purchase requirements. We note that in FY19, MSEDCL sold 5% higher power than initially forecasted, leading to higher power purchase requirements.

With the dynamic nature of demand-supply and pricing in the ST market, exchanges also present an opportunity for cost optimization. This has been witnessed in recent months over April–May'20, wherein lower power demand has led to a fall in exchange prices. MSEDCL's power purchases from exchanges surged in these two months.

Exhibit 23: MSEDCL's power purchase from exchanges

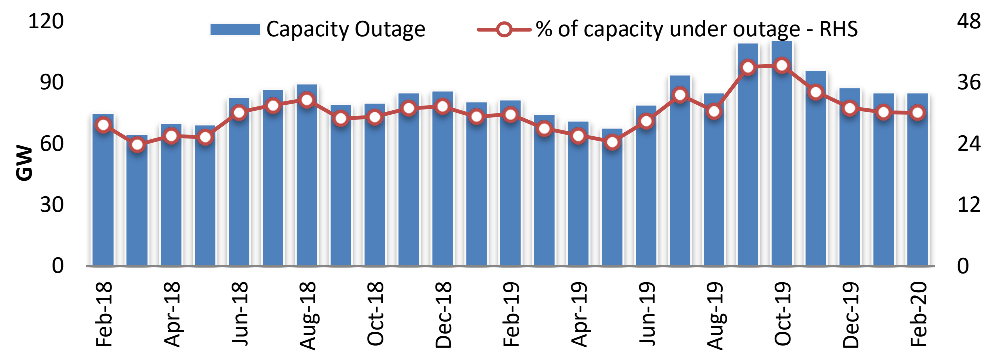
	Apr–May 2019	Apr–May 2020
Vol. (MUs)	3.7	1,132
Avg. price (INR/kWh)	3.4	2.9

Source: MSEDCL, MOFSL

Contingency events, seasonal/peaking requirements drive inherent need

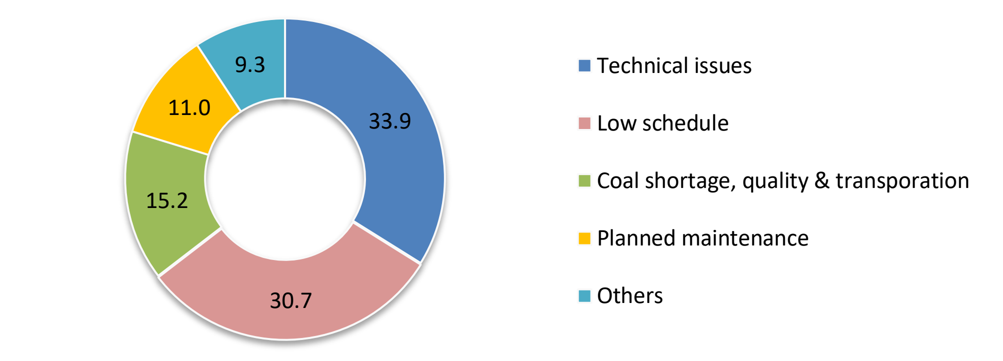
The above case of MSEDCL highlights DISCOMs' dependence on the ST market. Incidents such as: 1) plant outages (due to factors such as coal shortage, transmission issues, fuel transportation, and economics) and 2) maintenance-related shutdowns have been common features in recent years (Exhibits 24, 25). Furthermore, variation in load during the day and the management of peaking power also pose a challenge. In our view, demand for contingency events and peaking power is a short-duration need, and DISCOMs have increasingly realized the benefit of relying on the ST market for this. Even in an oversupplied market, DISCOMs could at times benefit by keeping certain LT PPA capacities under reserve shutdown (RSD). Thus, demand from contingency events, peaking demand, and price arbitrage opportunities would drive dependence on the ST market. We build-in the overall share of ST volumes in the Power market to be flat at ~10% over FY21–23, unless the market design changes (See: MBED).

Exhibit 24: Capacity under outage (GW)



Note: Figure denotes capacity outage as on the end of each month Source: CEA, MOFSL

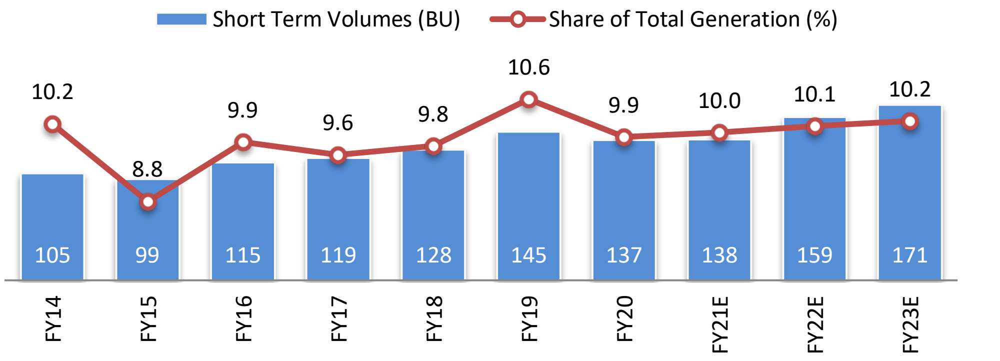
Exhibit 25: Reasons for capacity outage (%)



Source: Note: Figure denotes analysis done for data over Jan-Nov 19 Source: CEA, MOFSL

We build-in a steady ~10% share for the ST market in India's total generation mix

Exhibit 26: Share of short-term market in total generation



Source: CERC, MOFSL

MBED: Proposed framework for moving power toward the exchanges

In Dec'18, CERC issued a draft proposing a Market-based Economic Dispatch (MBED) model. Under this, DISCOMs, instead of self-scheduling power based on their contracted PPAs, would place a bid on the exchange for procuring power on a day-ahead basis. This would, thereby, lead to the optimization of power purchase at the national level. While the approach is noble, the model presents uncertainties/issues on the regulatory front (electricity purchase being a state-specific subject) as well as operational front (related to OA purchases, upfront payments amid liquidity issues at DISCOMs, and the impact of voluntary participation). Nevertheless, directionally, there appears to be an emphasis on market-based design. If such a shift happens, ST volumes could catapult.

Exchanges v/s other platforms: Flexibility an advantage

New product launches to aid growth for IEX

- **Expect market share gains for IEX to continue leading to a 20% CAGR in volumes over FY21–23.**
- **Entry into the Real-Time Market (RTM) would aid volumes amid increasing renewable penetration and the emphasis on peaking power management. The launch of LDCs would help the company get a foot in the Bilateral Contracts market.**
- **An oversupplied market would continue to provide opportunities for Open Access consumers.**

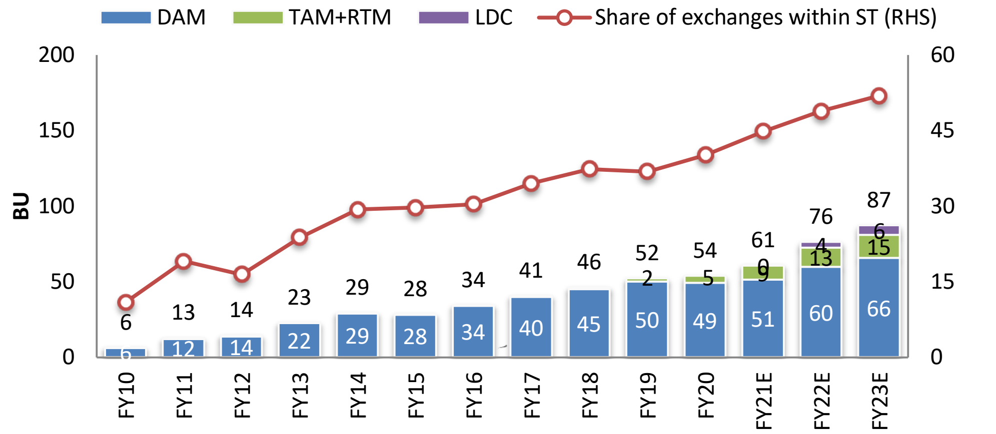
Within the ST market, spot power exchanges face competition from alternates such as DEEP (platform for longer duration trade) and banking arrangements. Exchanges offer the highest flexibility, but come with uncertainties related to price and volumes. DEEP offers price and volume certainty, but lacks enough flexibility.

This flexibility offered by IEX is a great advantage in the current oversupplied market, in our view. With growing peak demand and issues in managing the same due to rising renewable penetration, DISCOMs would increasingly depend on exchanges to meet their peaking requirements. The increasing penetration of renewables is also leading to variability in supply and would help drive intraday volumes for IEX. IEX's entry into the Real-Time Market (RTM) would help the company cater to this variability and provide the means for market participants to better manage their scheduling instead of relying on DSM. Furthermore, the launch of longer duration contracts (LDCs) would help the company gain a footing in some share of the bilateral contracts placed through DEEP.

Over the past decade, a transparent and efficient price discovery mechanism, reduced transmission constraints, and an oversupplied market have helped IEX nearly double its market share within the ST market. Going forward, we believe: 1) its entry into RTM, facilitated by increasing renewable penetration and peaking power management, 2) the launch of longer duration contracts, and 3) continued opportunities for OA consumers (backed by an oversupplied market and liquidity) would help drive market share gains. We expect IEX's market share within the ST market to increase to 51% in FY23 from an est. 44% in FY21. This would result in a 20% CAGR in volumes for IEX over the same period.

We expect IEX's market share within the ST market to increase to 51% by FY23, leading to a 20% CAGR in volumes over FY21-23

Exhibit 27: Historical and forecast volumes traded on IEX

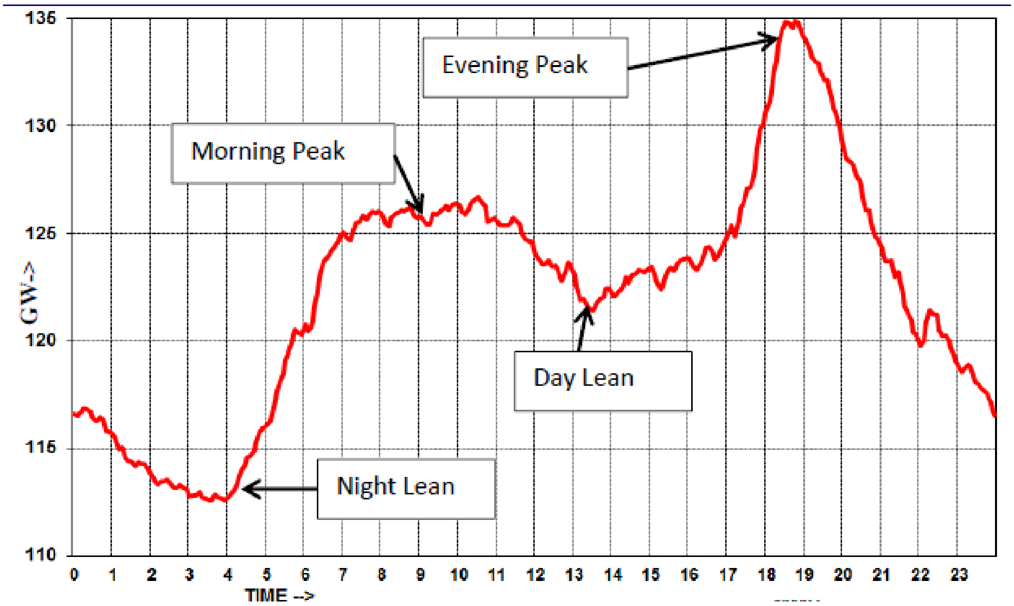


Source: Company, MOFSL

#1: Trading for peak demand

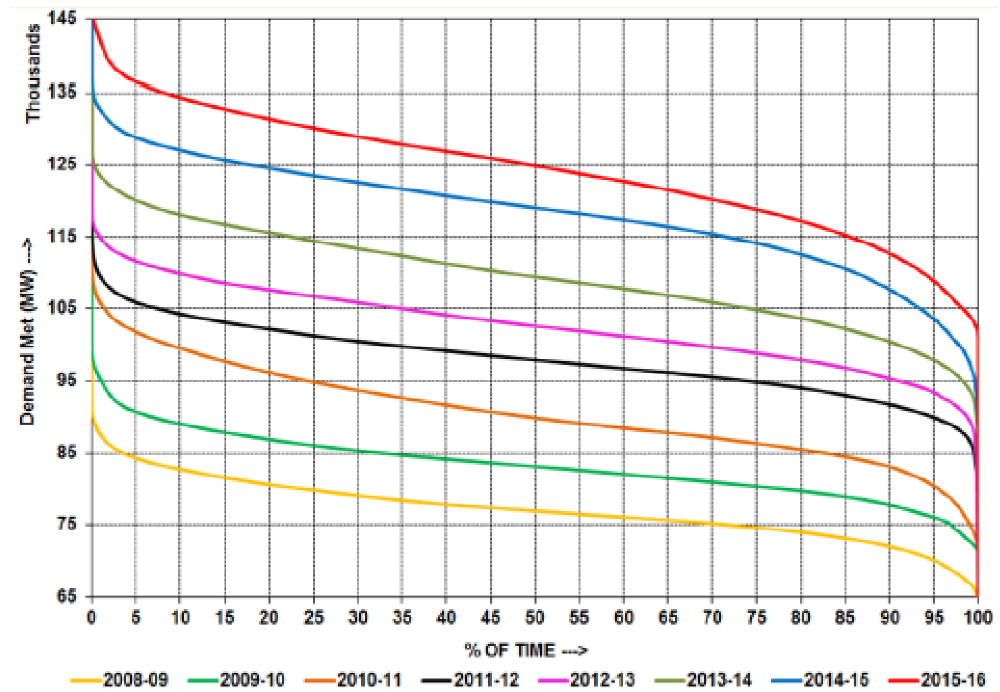
- India's load varies across regions, seasons, and even during the day. Just ~10% of the time of the year was India's load more than 135GW in FY16, when peak demand was ~145GW. This is short-duration demand, and it is not economical to enter into long-term base-load PPAs for such supplies, in our view. PPA capacity is underutilized most of the time, leading to avoidable fixed-cost (capacity charge) burdens on DISCOMs. Rather, entering into peaking power contracts or relying on exchanges would prove a better option.

Exhibit 28: All-India load curve



Source: POSOCO, MOFSL

Exhibit 29: Demand duration curve

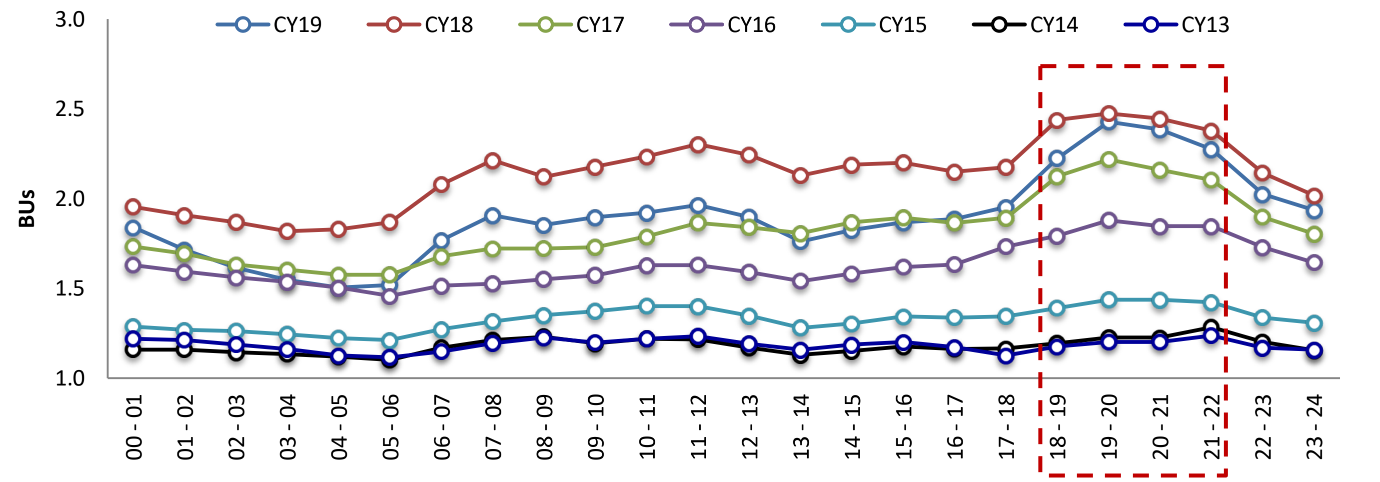


Source: POSOCO, MOFSL

Trading during the peak period has risen on IEX

- In the past, DISCOMs have primarily relied on long-term PPAs to meet peak duration load. This is changing to some extent (Exhibit 30 highlights higher trading during the peak period on IEX). We believe this trend would continue and gradually accelerate as liquidity rises on exchanges and some surplus PPA capacities with individual DISCOMs get utilized. Even in an oversupplied market, it could make sense for DISCOMs to keep some of their thermal capacities within LT PPA under reserve shutdown (RSD) at times. Operating such plants at low load necessitates compensation to generation plants for inefficiencies / lower operating parameters. Through the ST market, DISCOMs could take advantage of the variation in peak loads across regions. We estimate peak duration generation represents 2–4% of India's total generation. Peaking power contracts happen at a small scale on the DEEP platform. However, with the increasing penetration of renewables, an intermittent source, the platform lacks the flexibility that exchanges provide. Amid the currently oversupplied market, exchanges are well-suited to provide the required flexibility.

Exhibit 30: Day-ahead volumes on IEX based on time of day



Source: Company, MOFSL

#2: Increasing presence of renewables and IEX's entry into RTM

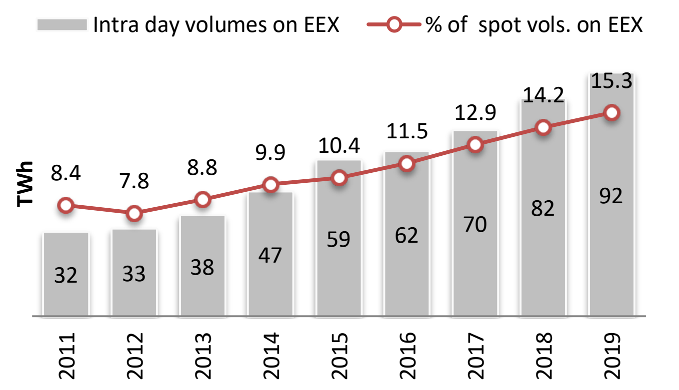
With increasing presence of renewables, trading of power is expected to move closer to Real Time

- Renewables are an intermittent source of generation, with variation in wind patterns / solar radiations leading to volatility in supply. Furthermore, the must-run status of renewables makes for a precarious situation as DISCOMs have to factor off-take from these plants. With the increase in renewables penetration leading to higher variability, electricity trading for intraday is expected to rise. This is being witnessed globally as well. A look into the European Energy Exchange (EEX), which operates the largest spot power exchange in Europe, indicates intraday volumes on its exchange have almost doubled over the past five years, even as overall power consumption within the Eurozone has remained largely flat. Within intraday for EEX, trading is also moving closer toward real-time.
- Intraday volumes on IEX remain nascent and account for just ~1% of total volumes. As renewables penetration grows and trading moves closer to real-time, we see large scope for a volume increase within intraday/real-time trading. In this context, IEX's launch of Real-Time Market (RTM) from 1st Jun'20

is a positive for the company. With RTM, buyers and sellers can now trade on the exchange up to 1 hour prior to the schedule v/s up to 2.5 hours earlier. Moreover, ~2% of India's volumes (~25BUs) are DSM-related, which is an undesired form of transaction caused by over-drawl and under-drawl from one's estimated schedule. With RTM, trading can now take place closer to the actual schedule and thereby presents DISCOMs with the opportunity to better manage their purchases. Furthermore, it would help avoid penalties that may be imposed from drawls under DSM. CERC (power regulator) has also been keen on maintaining grid discipline and soon plans to impose penalties / additional charges if a change of sign for sustained drawl under DSM is not observed after six time blocks (v/s current regulations of 12 time blocks).

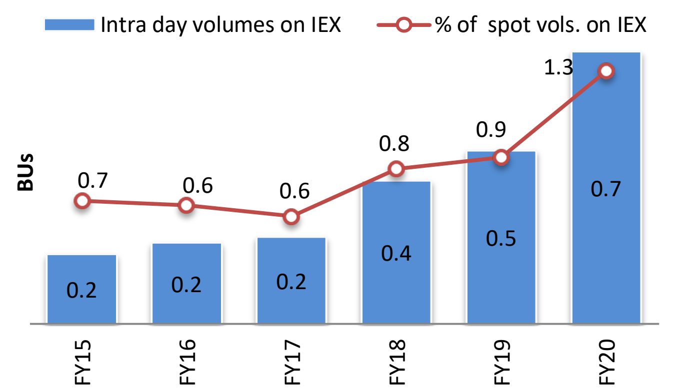
- We expect volumes for IEX to gain momentum with: 1) its entry into the RTM market, leading to share gains from DSM and 2) an increase in renewables penetration. Overall, we expect volumes within TAM, which includes intraday, plus RTM to grow to ~15BUs in FY23 from ~5BUs in FY20.

Exhibit 31: Intraday volumes on EEX



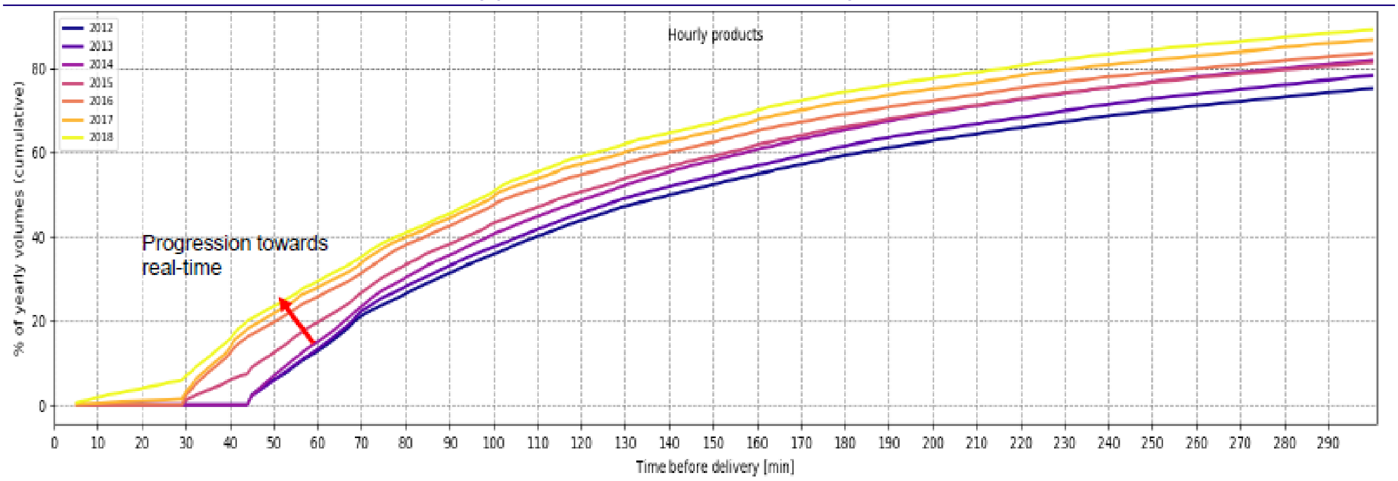
Source: EEX, MOFSL

Exhibit 32: Intraday volumes (part of TAM) on IEX



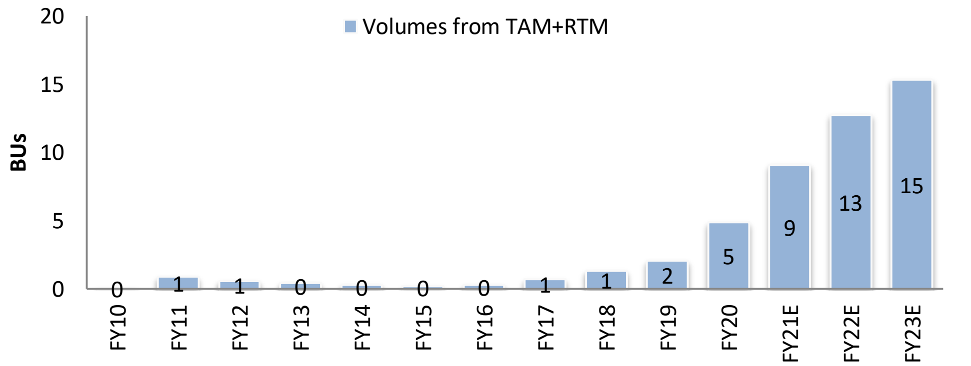
Source: Company, MOFSL

Exhibit 33: Lead times of all trades in hourly products in the German intraday market for EEX



Source: EEX, MOFSL

Exhibit 34: Historical and forecast volumes traded on TAM+RTM on IEX



Source: Company, MOFSL

#3: Entry into long-duration contracts

Launch of long-duration contracts would provide a foot into the bilateral market

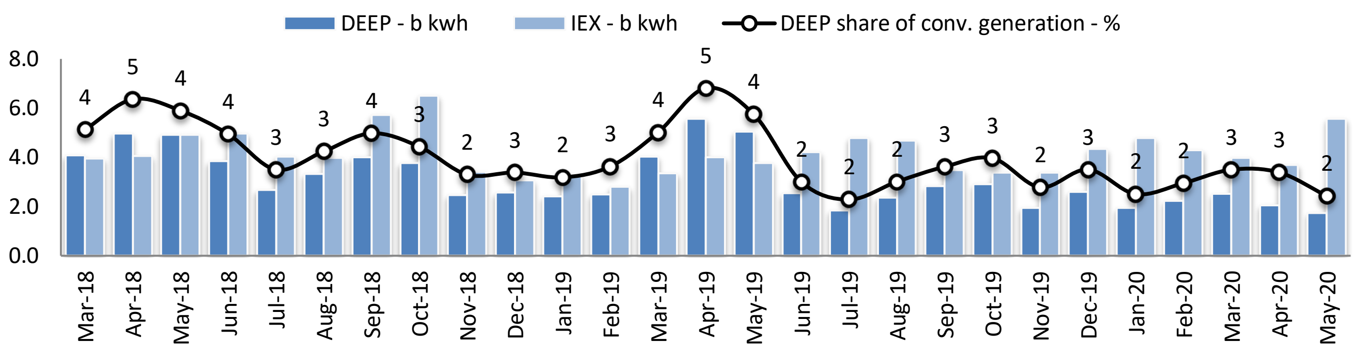
- IEX currently offers contracts of 1–11 days. The company plans to launch long-duration contracts (LDCs) >11 days and up to 1 year, thereby entering the market currently catered by traders. There was a jurisdiction issue between SEBI and CERC over the regulation of such products. Although, this has now been settled, with SEBI scheduled to regulate derivative contracts and CERC regulating all the physical delivery contracts. The company awaits the withdrawal of earlier appeals made by SEBI and CERC over the issue. Once successful, IEX expects to get CERC's approval and launch LDCs.
- This would allow IEX to enter the bilateral market (traders and direct banking), comprising ~67BUs in FY19. Of these, transactions through traders have ranged at 40–47BUs, while the remaining take place in the form of banking transactions between DISCOMs.

Transaction through DEEP (facilitated by traders)

- DEEP was launched by the government in 2016. The aim was to make the contracted sourcing of electricity by DISCOMs transparent to improve price discovery.
- Unlike exchanges, though, DEEP is not a settlement platform. It is only for aggregation and price discovery. Contracts on DEEP could have flexible supply durations and payment terms, but the buyer or seller has to individually seek transmission access after transacting on DEEP. This is unlike exchanges that handle transmission access.
- IEX plans to address these shortcomings by providing an execution platform that enables the settlement of transactions and manages counter-party risks. This, in turn, would enable generation companies to put in potentially lower bid prices (as counter-party risk would get absorbed). IEX plans to initially launch contracts that are similar in nature to those seen on DEEP (one-to-one).
- While the platform is compelling for generators/sellers, the exchange would require buyers to keep certain LCs/BGs as payment security. This could be a deterrent to DISCOMs amid liquidity issues. Our interaction with DISCOMs indicates that for bilateral transactions, certain state DISCOMs such as Maharashtra and UP do not place a payment security mechanism (such as LC), while DISCOMs such as Gujarat provides one. Thus, the requirement of payment security, especially for a longer duration contract, could be an issue for some DISCOMs. Nevertheless, IEX's entry into LDCs would provide an efficient

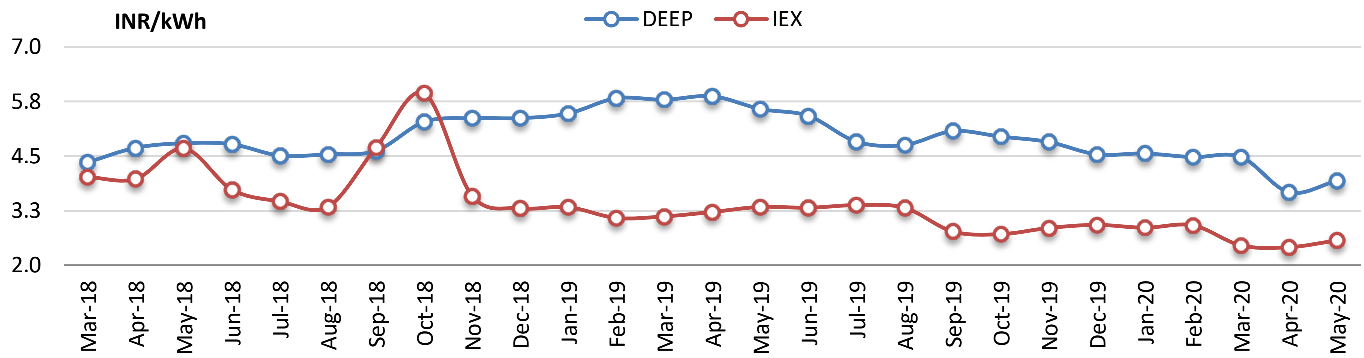
execution platform and facilitate transparent price and transaction details. As per the company, it could gain ~25% share from traders within the first year of its launch, resulting in incremental volumes of 10–12BUs. We build-in 4BUs from the launch of LDCs in FY22.

Exhibit 35: Volumes on DEEP and exchange



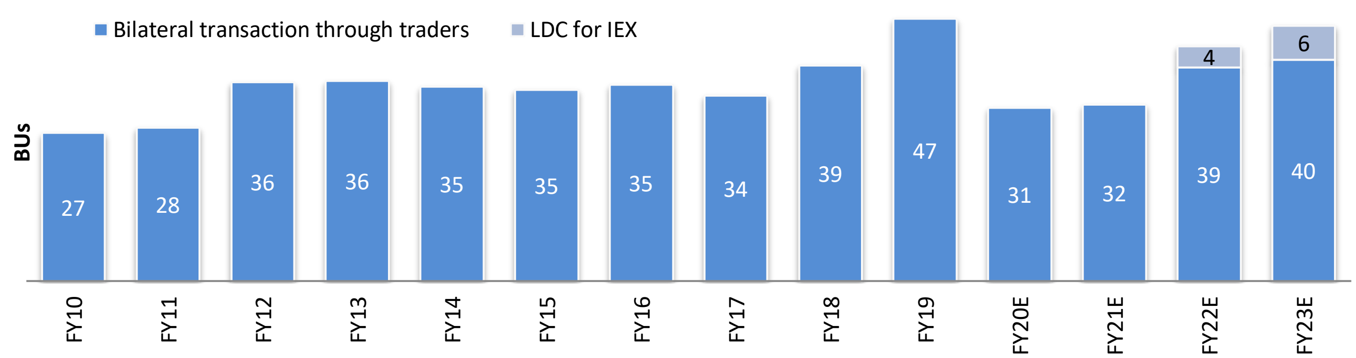
Source: Company, Ministry of Power , MOFSL

Exhibit 36: Avg. prices discovered on DEEP and exchange



Source: Company, Ministry of Power , MOFSL

Exhibit 37: Trends and forecasts for bilateral transactions through traders



Source: CERC, MOFSL

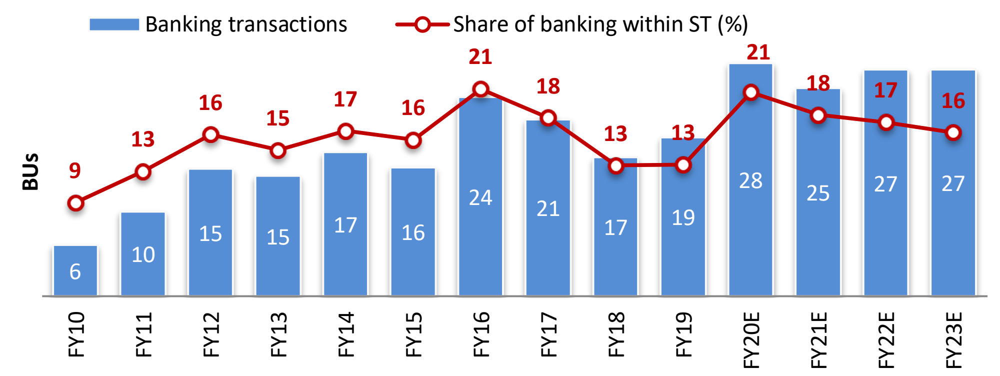
Banking transactions: Expect to continue playing its role

- Banking arrangements are bilateral contracts between DISCOMs. Instead of going on a platform such as DEEP or exchanges, in part to avoid price uncertainty, DISCOMs enter into supply contracts among themselves.
- Through banking, DISCOMs try to optimize their purchase power and sales by matching seasonal differences. For instance, Himachal Pradesh has surplus hydro generation during the summers as the snow cap melts, but generation declines during the winters. On the other hand, Delhi sees peak demand in the

summers, which declines in the winters. Thus, the two states would enter into a banking arrangement to optimize their power purchase and sales.

- Our interaction indicates the quantum for banking transactions is generally agreed upon well before the start of the year, and DISCOMs remain keen on abiding by them and maintaining their relationships with other DISCOMs. Thus, even if buying from an exchange could prove advantageous in a given year, it is highly unlikely that DISCOMs would change their stance and shift from banking, even in the current environment.
- Banking transactions provide a certain stability, without having to be exposed to the variance in exchange prices. Moreover, no cash exchange takes place, only a power exchange between the DISCOMs. Thus, we expect banking arrangements to continue to play their role in DISCOMs' power purchases; we do not expect IEX's entry into LDCs to lead to large share gains from this market.

Exhibit 38: Banking volume trend and its share in short-term market



Source: CERC, MOFSL

#4: Open Access: Price arbitrage play; sharp rise in CSS/SA may not recur

Large electricity consumers (>1MW) can also source electricity from exchanges through a mechanism called Open Access (OA). The incentive for such consumers to move to exchanges (v/s purchasing from their DISCOMs) is the price arbitrage between: a) landed cost of power from the exchange and b) the tariff charged by the DISCOM. The landed cost includes charges (Exhibit 39) over and above the price on the exchange.

Exhibit 39: Components in determining landed price for OA consumers

Factor	Description
Price on exchange	❖ Purchase price on IEX
Point-of-connect (POC) charges	❖ Charge for inter-state transmission access
State/DISCOM charge	❖ Charge for intra-state transmission access
Cross-subsidy surcharge (CSS)	❖ **Compensation for loss of cross-subsidized high-paying consumer**
Additional surcharge (AS)	❖ **Compensation for fixed charge of an underutilized long-term PPA**
Renewable purchase obligation (RPO)	❖ Dependent on state-specific RPO obligations
Other charges	❖ Exchange transaction fee, Grid operator fee
Applicable loss	❖ Factor to account for the losses in transmission of electricity

Source: Company, MOFSL

Exhibit 40: Calculation of landed cost for a 33kV industry buyer on IEX at an exchange price of INR3/kWh

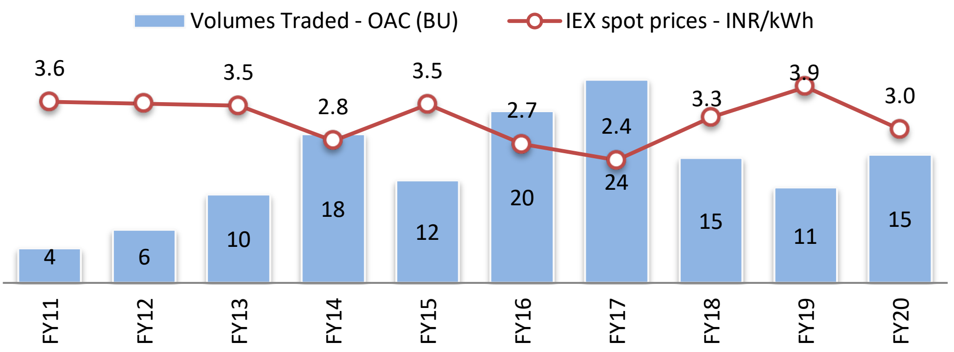
	IEX Price	Trans. Charge	CSS	AS	RPO	Others	Applicable Loss			Landed Cost	DISCOM Tariff
							POC (%)	State (%)	Distr (%)		*Energy ch.*
AP (EPDCL)	3.00	0.51	1.47	0.00	0.16	0.04	1.55	2.86	5.9	5.6	5.9-8.0
Maharashtra (MSEDCL)	3.00	0.75	1.55	1.25	0.17	0.04	1.70	3.92	6.0	7.2	7.6-12.0
Rajasthan	3.00	0.73	1.39	0.80	0.20	0.04	2.40	3.89	3.8	6.6	7.1-8.1
Telangana (SPDCL)	3.00	0.42	1.46	0.52	0.16	0.04	1.55	2.18	4.0	5.9	6.1-8.0
Karnataka (BESCOM)	3.00	0.61	1.87	0.60	0.22	0.04	2.05	3.13	3.6	6.7	7.0-8.8

Source: Company, State DISCOMs, SERCs, MOFSL

States are increasingly looking to provide some support towards OA

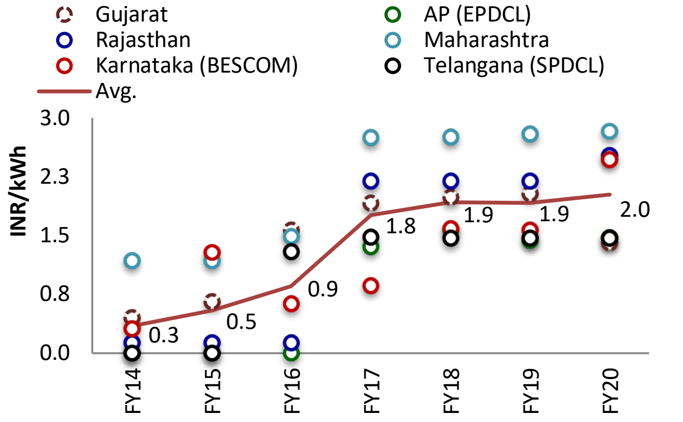
- While prices on exchanges are a key factor in determining the viability of OA, the imposition of state-determined surcharge in the form of Cross-Subsidy Surcharge (CSS) and Additional Surcharge (AS) increases the landed cost for OA.
- A look into FY17 tariff orders indicates the introduction of AS by states such as Maharashtra and Rajasthan and an increase in CSS by states such as Gujarat and Rajasthan as OA volumes increased (Exhibit 42). This, in our view, subsequently played a part in the reduction of OA volumes on the exchange. OA volumes on the exchange were down more than 50% in FY19 from FY17 levels. FY20, though, has seen some recovery in volumes on lower merchant prices.
- Given the current low-price environment on exchanges, OA consumers would find opportunities to dip into the exchange market. More importantly, we do not see a sharp increase in AS/CSS from current levels. For example: Rajasthan, while revising its CSS for FY20, capped it at 25% tariff, thereby limiting a large increase in CSS. Other states, too, had earlier followed this path post the 2016 draft of the National Tariff Policy (NTP).
- Increasingly, there appears to be a trend to: 1) provide some support to OA consumers (e.g., Karnataka, in its latest tariff order, approved an AS at 50% of calculated levels, keeping in mind the interests of OA consumers) and 2) gradually chart out a path for lowering these charges.
- Prices on IEX had slipped below the avg. prices witnessed in FY17 (INR2.4/kWh) during the year. Moreover, with tariffs for industry consumers remaining flat or marginally higher, OA consumers would see opportunities to move to the exchange if there is no sharp rise in CSS/AS. Given steady/higher DISCOM tariffs, the lack of sharp CSS/AS hikes, and an overall oversupplied market, OA volumes may not decline as sharply as seen initially in the near term.

Exhibit 41: Volumes traded through OA and IEX spot prices



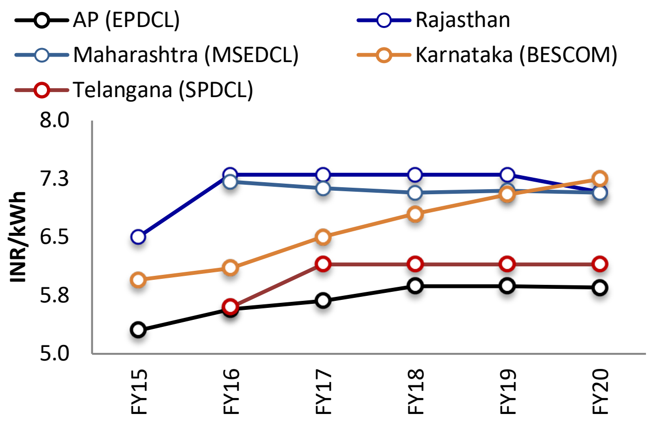
Source: Company, MOFSL

Exhibit 42: Imposition of CSS+AS charges across states



Note: CSS for HT 33kV Industrial customers
Source: State DISCOMs, SERCs, MOFSL

Exhibit 43: Movement in HT industry tariffs (energy charges) across states



Source: State DISCOMs, SERCs, MOFSL

Expect PAT growth of 19% CAGR as volumes rise

Low operating cost and capex structure bodes well for FCF generation

- **IEX operates a lean operating cost structure with EBITDA margins of ~80%.**
- **We expect EBITDA/PAT to increase at a 20%/19% CAGR over FY21–23 with rising volumes.**
- **With low capital expenditure and a negative working capital, expect FCF generation to be high.**

Power exchanges were launched in India in 2008. IEX, launched in June 2008, was the first to enter the market, with PXIL (its only other competitor) making an entry in October 2008. Products traded over IEX's platform comprise: 1) electricity contracts in blocks of 15 minutes in DAM, 2) electricity contracts for fixed terms in the future, such as intraday contracts, day-ahead contingency contracts, and contracts up to 11 days ahead, 3) renewable energy certificates (RECs), and 4) the recently introduced RTM, which offers contracts for trading in power up to one hour before schedule. The platform also offers the trading of energy-saving certificates (ESCerts).

Currently, trading happens primarily for DAM (~91% of volumes in FY20). With IEX's entry into RTM and the subsequent advent of LDCs, the share of DAM could fall within the company's product basket, but would remain dominant, in our view (>70%). IEX collects a transaction fee on every unit of trade (Buy + Sell) of INR0.04/kWh and also receives annual fees from its members.

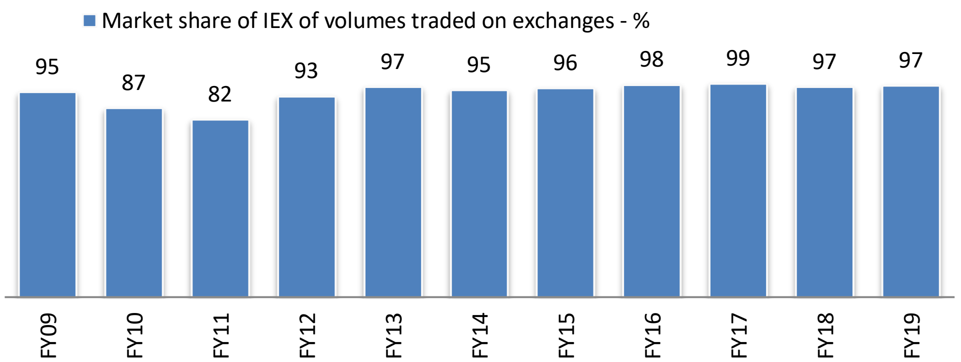
Substantial dominant position with competitive edge

IEX accounts for significant market share within exchanges at ~97%

IEX enjoys an early-mover advantage and strong brand recognition among Energy market participants. It has maintained the majority market share among the power exchanges in India through its technology innovation, active market participation, and transparent operations. In FY19, ~97% of the traded volumes of electricity contracts in DAM and TAM combined were conducted over IEX. The liquidity on its platform is a deterrent to competition.

IEX uses the trading platform developed by 63 Moons Technologies. The trading software is capable of handling complex order types and also of deriving results under the grid condition of power transmission congestion. The trading platform is highly scalable, such that it can expand capacity and add new products and functionalities efficiently and at a relatively low cost, without disrupting market operations.

Exhibit 44: Market share of IEX on volumes traded on exchange



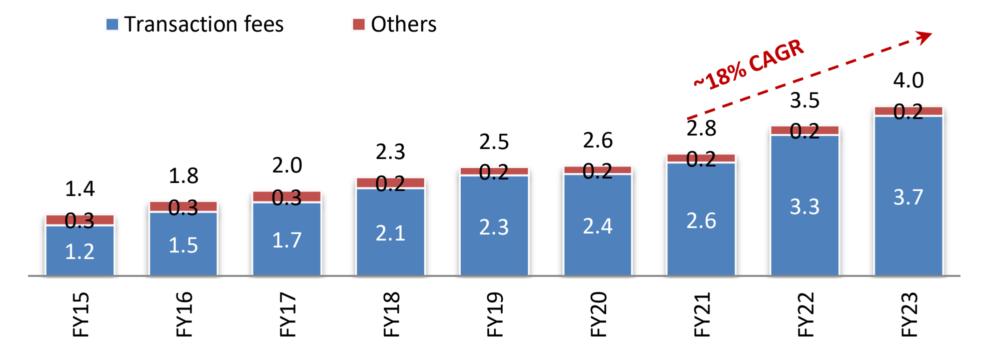
Source: CERC, MOFSL

Revenue primarily linked to transaction fees

Expect revenues to grow at 18% CAGR over FY21-23

The revenues primarily comprise: 1) a transaction fee, for executing transactions on the exchange, 2) an annual subscription fee, for trading on the platform, and 3) an admission fee, a one-time fee on admission. Transaction fee is the key revenue driver. It represented ~90% of the company's revenue in FY20. The transaction fee for DAM and TAM is INR0.02/kWh for every component of the transaction (combined INR0.04/kWh for Buy + Sell). Given the transaction fee of INR0.04/kWh, we expect revenues to grow at 18% CAGR over FY21-23, led by a 20% CAGR in volumes.

Exhibit 45: Expect revenues to grow at 18% CAGR over FY21–23 (INR b)



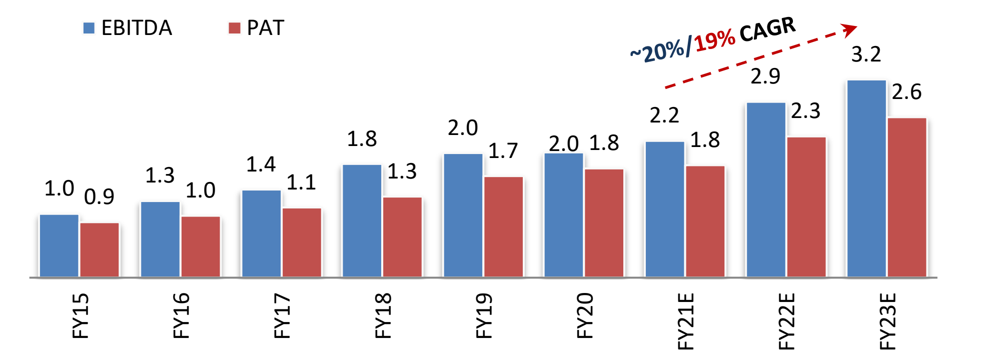
Source: Company, MOFSL

Low operating cost to aid benefit of volume growth

IEX has a lean operating structure; Expect PAT to grow at ~19% CAGR over FY21-23 with growth in volumes

IEX has a very lean operating cost structure. It earned an EBITDA margin of ~80% in FY20. Employee wages were the largest cost component at ~60% of operating cost in FY20. The EBITDA margin has increased from ~70% in FY17 due to savings in technology cost. IEX uses trading software developed by 63 Moons Technologies. It acquired the source code (along with the modification rights) for the trading software in FY18, driving savings in technology cost. Given the company's lean operating structure, we expect the EBITDA margin to rise ~190bps, led by a sharp uptick in volumes, resulting in a 20% CAGR in EBITDA and 19% CAGR in PAT over FY21–23.

Exhibit 46: Expect EBITDA/PAT to rise at 20%/19% CAGR over FY21–23 (INR b)



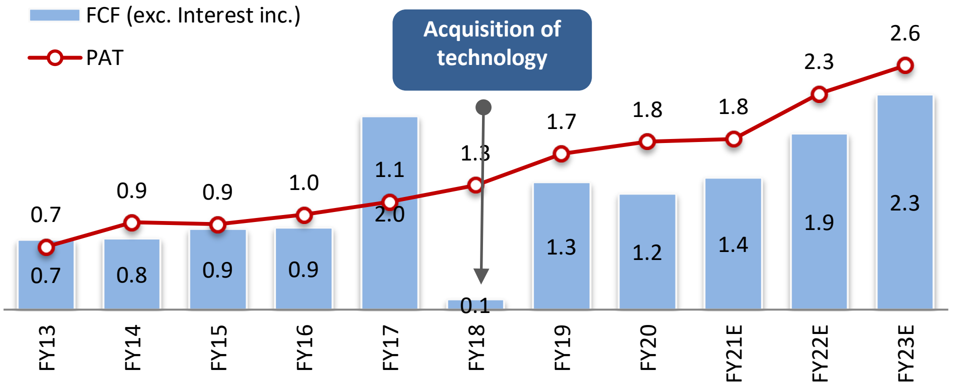
Source: Company, MOFSL

Low capital expenditure and negative working capital – High FCF generation

Low capital expenditure and negative working capital aids FCF generation

IEX can leverage its existing technology platform to significantly add volumes. The capex requirement is insignificant. Except for the acquisition of the trading platform, the capex has averaged at ~INR25–40m p.a. over the last six years. IEX does not provide working capital to support transactions on its platforms. In case of DAM, pay-ins from buyers are collected on the same day of trade. Conversely, pay-outs to sellers are given on the second day from the day of trade. IEX manages the clearing and settlements. It also holds and maintains a guarantee fund as per the regulator's guidelines for the settlement of member defaults. Given the insignificant capex and no working capital requirement, we expect FCF generation to remain high and mimic growth in profitability.

Exhibit 47: Expect FCF to remain strong and mimic growth in PAT (INR b)

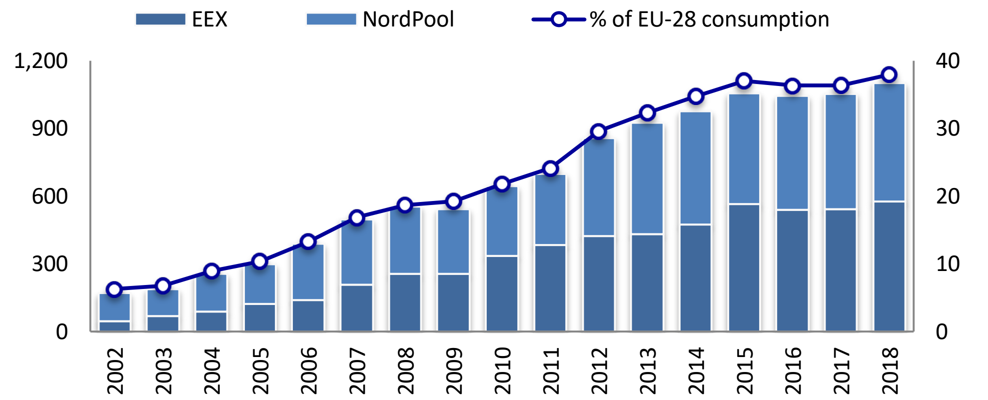


Source: Company, MOFSL

Europe: Highlights huge growth potential for volumes, but could there be a potential risk to transaction fees?

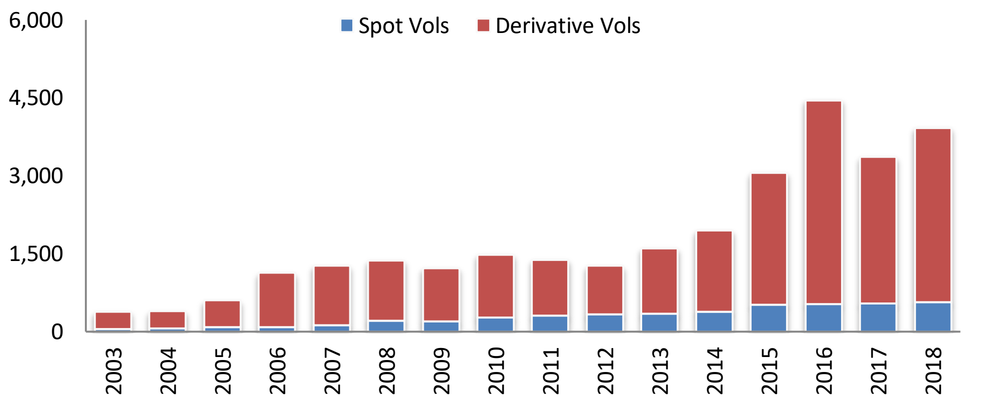
A look into Europe's two largest power exchanges (EEX and Nord Pool) highlights the large potential for the Power Exchange market in India. Day-ahead and intraday volumes on the two exchanges now represent ~40% of the European Union (EU)'s annual electricity consumption (against just 10% over 2002–03). This rise was led by several reforms adopted by the EU for the privatization and integration of its power markets. Moreover, the EU has an active Derivatives (Forwards and Futures) market, which provides liquidity and a means for consumers to hedge the risk from exchange volatility. Volumes traded v/s actual consumption are as high as 4–13x in some EU countries. Overall, factors such as: 1) the liberalization of the Generation and Distribution sector, 2) the evolution of a Liquid Derivatives market, and 3) the integration of the EU markets have played a key role in shaping Europe's power exchanges.

Exhibit 48: Volumes on day-ahead and intraday on EEX and Nord Pool (TWh)



Note: EEX volumes adj. for APX and Powernext acquisition Source: EEX, NordPool, Eurostat, MOFSL

Exhibit 49: Derivative and Spot Volumes traded on EEX (TWh)



Note: EEX volumes is not adj. for APX and Powernext acquisition Source: EEX, MOFSL

While the potential is evident, India still has some way to go on this front. In our view, such a launch in India's electricity trading volumes (provided there is no change in the market design) would require sector reforms in the form of separation of carriage and content, higher private participation, the introduction of a Derivatives market, and a possible relook at transmission capacity allocation. The following are the characteristics of the European market that drove growth in its exchanges and the read-across for the Indian markets:

- **Liberalized generation and distribution:** The Retail Distribution sector is liberalized in most parts of Europe. Retail electricity prices are competition-driven in most parts of the EU. Generators also compete in the Wholesale market to sell electricity in the EU. *In India, electricity supply is highly regulated. While large customers can approach the OA market, the levy of charges such as CSS/AS restricts consumers' ability to purchase through exchanges.*
- **Liquid Derivatives market:** EU has a well-developed and liquid Forwards and Futures market. This facilitates purchases on a day-ahead basis by providing the ability to hedge and reduce the risk of volatility in exchange prices. *There are currently no derivatives for electricity in India. The potential launch of a derivatives market would be a big positive.*
- **Market integration:** Over the years, the EU has made a strong push toward market integration across its member states. The coupling of transmission capacities for different countries/regions has enabled electricity flow within

regions, thereby increasing the scope for these exchanges. Even without coupling, cross-border transmission rights are traded in the EU and provide transmission flexibility. Market participants could thus buy the rights to use the transmission capacity between two markets. *In India, transmission networks are designed on long-term PPAs, limiting flexibility. The overall market for cross-border transactions to neighboring countries such as Nepal and Bhutan remains small. Currently, there are no set procedures for cross-border trade through exchange.*

- **Renewable energy sold on DAM**: Regulations require renewable energy in Germany to be sold by the transmission system operator on the day-ahead market. This has also boosted the day-ahead volumes on exchanges. *There is no such regulation in India.*

EPEX Spot Financials – Transaction fees at almost one-fifth that of IEX

EPEX Spot, the power spot market arm of EEX, is the largest spot power exchange in Europe. It traded 535Twh of day-ahead and intraday volumes, and generated revenue of EUR80m in CY17. Transaction-/Variable-linked revenue stood at EUR52m in CY17. Accordingly, the variable fee per transaction translates to ~ EUR0.1/MWh or INR0.007–0.008/kWh. This is almost one-fifth of the transaction fee earned by IEX at INR0.04/Kwh per transaction. The EBITDA margins of EPEX Spot are lower at ~40% v/s 75–80% for IEX. A lower transaction fee may pose a risk for IEX, but this may not materialize in the near term. Volumes on EEX are ~11x that on IEX. Our interaction suggests it would take a manifold increase in exchange volumes for IEX to consider such a revision. In an earlier order (2018), CERC had also allowed IEX to continue with its INR0.04/kWh fee structure. Furthermore, in its latest order (Jan'20), CERC has allowed traders to decide on the transaction fees, with a cap of INR0.07/kWh. We do not expect the regulator to interfere with the transaction fees for exchanges in the near term.

Exhibit 50: EPEX Spot financials

EPEX Spot		2016	2017
Volumes	TWh	529	535
Revenue	EUR m	77	80
o/w Variable fees	EUR m	51	52
% of variable fees	%	66	65
Employee expenses	EUR m	20	20
Other op expenses	EUR m	29	28
EBITDA	**EUR m**	**27**	**32**
EBITDA margin	%	36	40
Variable fees per transaction	EUR/MWh	0.10	0.10
	EUR/INR	74.4	73.5
	INR/ kWh	0.007	0.007

Source: EPEX Spot, MOFSL

Diversifying into gas markets and other products

Huge opportunity, but long way to go

- **IEX has diversified into the gas markets. While the opportunity provided is huge, there are hurdles related to transparency and capacity allocation.**
- **In electricity products, IEX has recently launched G-TAM and plans to launch products for cross-border transactions.**
- **Ramp-up in the above-mentioned gas and electricity products provides upside. We do not build-in financials/valuations for the same.**

Diversification into gas markets and entry into other electricity products can provide upsides to our estimates

With the launch of the Indian Gas Exchange, a wholly-owned subsidiary of IEX, the company plans to leverage its expertise in managing the exchange markets. IGX offers products within day-ahead and forward contracts (daily, weekly, weekday, fortnightly, and monthly) at three physical hubs in Dahej (Gujarat), Hazira (Gujarat), and Odoru (Andhra Pradesh), and plans to add more hubs in the coming quarters.

IGX plans to target India's LNG Import market. India's overall gas consumption stands at ~166mmscmd, ~53% of which is domestically produced and tied up with consumers. The balance 47% (~78mmscmd) is imported in the form of LNG. Of this, ~50mmscmd of LNG imports are traded through the spot market. At the current transaction fee of INR5–7/MMBTU, this implies a current market size of INR4–5b.

While the opportunity provided is huge, there are several hurdles such as: 1) the lack of a natural gas grid and the ensuing flexibility of access to multiple sources for buyers, 2) issues regarding transparency and access to the transmission capacities of pipeline operators, 3) the lack of terminal capacity allocation / minimum allocation to traders, which restricts participation from international players, and 4) the lack of an independent system operator for capacity booking and scheduling. Initially, IGX plans to capture 2–3% share in the spot market, implying revenues of just INR0.1–0.2b. While IGX could prove to be a good opportunity in the long term, it is unlikely to contribute to IEX's revenue in the near term. Given the uncertain evolution of the exchange, we do not build any financials/valuation from the same.

Other product launches:

Apart from IEX's entry into the gas exchange, it has 1) recently launched Green Term-Ahead Market (G-TAM) and 2) plans to launch products for cross-border trade.

- **Green Energy market:** The company has recently launched G-TAM contracts for the trading of renewable power. The proposed power traded through G-TAM would be accounted towards meeting the RPO obligations of DISCOMs. However, given most of the renewable capacities are currently tied up under LT PPAs, we do not expect significant volumes from this product in the near term for IEX.
- **Cross-border trade:** Cross-border trade happens through bilateral contracts. Significant capacities are in the works to build power transfer from/to India and neighboring nations, such as Nepal, Bhutan, and Bangladesh. However, the overall market currently remains small. CERC and POSOCO are yet to issue procedures for cross-border trade through the exchanges.

Valuation: Buy, with TP of INR250/sh

Stock trades attractively given earnings growth and strong RoE

Valuations are attractive compared to global peers given higher RoE and growth profile

- **IEX trades attractively v/s global peers given its superior RoE and growth profile.**
- **We value the stock at 30x Sep'22P/E, which is slightly above the average multiples for global exchanges (at 27x CY22E P/E).**
- **Key risks include a cut in transaction fees, increased competition intensity, stagnant share of the ST market, and a change in market design.**

Growth in volumes at a ~20% CAGR over FY21–23E would drive a revenue/PAT CAGR of 18%/19%. The cost structure is lean (~80% EBITDA margin), with insignificant capital resulting in healthy RoE of ~45%. We initiate coverage on IEX with a Buy rating based on 30x Sep'22 EPS, implying Target Price of INR250/sh. Our target multiple is slightly above the average multiples for global exchanges (at 27x CY22E P/E) – given a higher growth and return profile for IEX. At 30x PE, our TP largely builds in sustenance of volume growth trajectory over the next decade. A DCF at our TP implies volumes on the IEX would have to grow at 16% CAGR over FY21–30 (with terminal growth of 6% post FY30).

Key risks to our valuation are: 1) cuts in transaction fees from the current fee of INR0.04/kWh per transaction, 2) the stagnant share of the ST market in the total generation, 3) deferment of the launch of LDCs and the inability to garner market share, 4) increased competition intensity and 5) change in market design.

Exhibit 51: The stock trades attractively with peers, given superior RoE and growth

	P/E			EPS Growth (%)			RoE (%)		
Domestic	**FY21E**	**FY22E**	**FY23E**	**FY21E**	**FY22E**	**FY23E**	**FY21E**	**FY22E**	**FY23E**
IEX	31.5	25.1	22.2	2.6	25.7	12.9	43.7	47.9	46.9
BSE	20.9	18.0	17.1	-0.8	16.2	5.0	4.7	5.4	5.6
MCX	34.6	28.0	25.4	5.2	23.6	10.3	17.5	19.7	19.5
Average	**29.0**	**23.7**	**21.6**	**2.3**	**21.8**	**9.4**	**22.0**	**24.3**	**24.0**
Global	**CY20E**	**CY21E**	**CY22E**	**CY20E**	**CY21E**	**CY22E**	**CY20E**	**CY21E**	**CY22E**
NASDAQ	22.1	22.0	20.3	17.8	0.3	8.4	16.7	16.1	21.1
ICE	23.7	22.7	20.9	13.7	4.3	8.5	13.9	14.0	14.8
CME	24.9	24.8	23.6	3.4	0.5	4.8	9.4	9.3	9.9
Deutsche Börse	24.2	23.7	21.8	8.7	2.2	8.5	20.0	19.3	18.8
London Stock Exch.	43.1	38.1	35.0	4.2	13.2	8.7	16.2	18.4	17.3
HK Exch.	43.9	38.1	34.2	15.6	15.3	11.5	23.9	26.1	27.9
Singapore Exch.	21.4	21.2	20.3	-7.6	1.0	4.2	33.6	31.7	30.8
DFM	43.9	35.1	29.3	32.6	25.0	20.0	2.2	2.9	NA
BME	21.0	20.7	20.3	6.5	1.8	1.9	32.7	31.4	36.4
Japan Exchange	31.4	29.9	28.5	2.3	4.8	5.1	15.0	15.0	NA
ASX	35.1	34.3	32.8	-1.8	2.2	4.5	13.1	13.3	13.8
Bursa Malaysia	26.2	31.2	31.8	62.6	-16.0	-1.9	39.7	31.8	30.3
Average	**30.1**	**28.5**	**26.6**	**13.2**	**4.5**	**7.0**	**19.7**	**19.1**	**22.1**

Note: Estimates for IEX, BSE and MCX are MOFSL estimates

Source: Bloomberg, MOFSL

Exhibit 52: DCF for TP of INR250/sh implies volume growth at 16% CAGR over FY21–30

		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Power Generation	**BU**	**1,380**	**1,376**	**1,573**	**1,675**	**1,784**	**1,891**	**1,995**	**2,105**	**2,221**	**2,343**	**2,471**
YoY Growth	%	0.6	-0.3	14.3	6.5	6.5	6.0	5.5	5.5	5.5	5.5	5.5
IEX Volumes	**BU**	**54**	**61**	**76**	**87**	**99**	**113**	**131**	**151**	**175**	**200**	**227**
IEX share of All-India generation	%	3.9	4.4	4.8	5.2	5.6	6.0	6.5	7.2	7.9	8.5	9.2
YoY Growth	%	3.2	12.4	26.0	14.2	13.8	14.3	15.2	15.8	15.5	14.7	13.4
Revenue	**INR m**	**2,570**	**2,848**	**3,502**	**3,960**	**4,469**	**5,065**	**5,787**	**6,643**	**7,614**	**8,674**	**9,789**
YoY Growth	%	1.2	10.8	23.0	13.1	12.8	13.4	14.2	14.8	14.6	13.9	12.9
EBITDA	**INR m**	**2,045**	**2,233**	**2,862**	**3,227**	**3,651**	**4,160**	**4,785**	**5,534**	**6,387**	**7,317**	**8,290**
Margin	%	80	78	82	81	82	82	83	83	84	84	85
PAT	**INR m**	**1,779**	**1,827**	**2,294**	**2,591**	**2,954**	**3,383**	**3,906**	**4,530**	**5,239**	**6,018**	**6,839**
Margin	%	69	64	66	65	66	67	68	68	69	69	70
Depreciation	INR m	152	163	179	191	190	192	191	190	192	190	191
Capital Expenditure	INR m	49	200	200	50	60	60	70	70	70	70	70
FCFE	**INR m**	**1,882**	**1,791**	**2,274**	**2,732**	**3,084**	**3,514**	**4,027**	**4,650**	**5,361**	**6,138**	**6,960**
CoE	**%**	**11.5**										
Terminal growth rate		6.0%										
Explicit forecast	INR m	21,285										
Terminal value	INR m	53,177										
DCF	**INR m**	**74,462**										
INR /sh		**250**										

Source: Company, MOFSL

Risks

Transaction fees

Transaction fees charged by IEX are one-fifth that of its European counterpart. Volumes, though, are significantly lower at one-eleventh that of EEX, and we do not expect transaction fee cuts to materialize in the near term. However, a catapult rise in volumes could pose the risk of a cut in transaction fees, which needs to be watched. An INR0.005/kWh lower transaction fee would impact our FY22/23E EPS by 12%.

Stagnant share of ST market

Over FY21–23, we expect IEX's volumes to grow at a 20% CAGR amid market share gains, despite the overall ST market remaining steady at 10–11%. However, for the exchange to sustain this growth momentum, the share of the ST market would eventually have to rise gradually. As the current set of LT PPAs slowly starts to be utilized, the Indian Power market could evolve and start moving more power toward the short term. However, this would require some regulatory tailwinds. Lack of such tailwinds and a continued stagnant share of ST market would be a risk.

Increased competition intensity

IEX accounts for a dominant share in the exchange market, and the subsequent liquidity with its platform continues to be a deterrent. However, aggression from its competitor (PXIL), particularly in new product segments such as RTM and LDCs, would be a key observable. The process of regulatory approvals for a proposed third exchange (consortium of PTC, BSE, and ICICI Bank) is ongoing. The launch of such an exchange could increase competition intensity and would need to be watched.

Change in market design

CERC's draft on Power Market Regulations (2020) suggests a possible structure of price coupling, governed by a market coupling operator that would aggregate the bids placed across the exchanges and discover a uniform price. If such a structure were implemented, the liquidity advantage would not prove fruitful for IEX, and the competition intensity could increase, driving lower fees. In all likelihood, this is a model being explored by CERC in tandem with the aim to move power to the ST market (under MBED). The implementation of such a price coupling design, though, could pose a risk.

Appendix: Evolution of IEX

Indian Energy Exchange is a power exchange that offers a platform for trading of short-term power. The foundation for the trading of short-term power was laid out by the Electricity Act (2003). This paved the way for Open Access purchases and the subsequent setting up of power exchanges. Power exchanges were launched in India in 2008. IEX was the first to enter the market with its launch in June 2008, with PXIL (its only other competitor) making an entry in October 2008.

While India's Power market is dominated by long-term power purchases (~90%), the launch of power exchanges has played a crucial role in facilitating DISCOMs' needs. DISCOMs' reliance on power exchanges relates largely to purchases for seasonal variations and contingency demand (and, at times, price arbitrage – when prices in the ST market are low). Final consumers, i.e., end users of electricity, could also purchase power through the exchanges via the Open Access route.

Supported by a transparent and efficient platform, exchanges have facilitated the above requirements of the DISCOMs. IEX has been at the forefront of this with market share of ~97% within the exchanges, led by its transparent operations, technology innovation, and active market participation. To put this in context, volumes on IEX have jumped > 4x over the past decade – to >53BU at the end of FY20 from <13BU in FY11 – despite the overall Short-Term market remaining steady at ~10% of overall generation. The other forms of short-term trade available on the market comprise bilateral contracts through traders, banking transactions, and DSM. Bilateral trader contracts are generally slightly longer duration contracts – typically >1 month. Banking is a direct arrangement between the DISCOMs, largely to match seasonal differences. On the other hand, DSM is a frequency regulation enforced by the grid operator and is not a desired form of short-term trade.

Investments to expand the transmission network have been a key growth enabler for IEX. This has helped reduce the constrained volumes within exchanges and allowed execution at transparent and efficient prices. Furthermore, large-scale generation capacity additions have far outpaced demand growth, keeping prices in check on the exchange. Driven by these measures, volumes on IEX (DAM + TAM) rose at a 14% CAGR over FY15–20 to ~54BU.

With revenue largely linked to transaction fees, revenues for IEX rose at a 12% CAGR over the same period. IEX uses trading software developed by 63 Moons Technologies. It acquired the source code (along with the modification rights) for the trading software in FY18, driving savings in technology cost. The same led to an increase in EBITDA margins to ~80% in FY18 from ~72% in FY17. Given these savings, EBITDA/PAT has risen at a higher 14%/15% CAGR over the past five years.

Bull & Bear Case

Bull Case

- ☑ In our bull case, we factor a 23% revenue CAGR amid a 26% volume CAGR over FY21–23 led by a sharp pick-up in the share of the ST market and market share gains from DSM and LDCs (v/s a 18% revenue CAGR in the base case).
- ☑ As a result, EBITDA/PAT would grow at a 25%/24% CAGR to INR3.6b/INR2.9b over FY21–23 (v/s INR2.6b PAT in the base case).
- ☑ Based on the above assumptions, we value the company at INR289/sh (32x Sep '22 EPS).

Bear Case

- ☑ In our bear case, we factor a 8% revenue CAGR over FY21–23, driven by a stagnant ST market and the lack of market share gains (v/s a 18% revenue CAGR in the base case).
- ☑ As a result, PAT is likely to grow at a 8% CAGR over FY21–23 to INR1.9b (v/s INR2.6b in the base case).
- ☑ Based on the above assumptions, we value the company at INR153/sh (25x Sep '22 EPS).

SCENARIO ANALYSIS – BULL CASE

INR b	FY21E	FY22E	FY23E
Net revenues	2.9	3.7	4.3
EBITDA	2.3	3.1	3.6
PBT	2.5	3.3	3.9
PAT	1.9	2.5	2.9
Change YoY (%)	5.2	33.3	16.1
Revenue Growth (%)	11.9	30.5	15.7
EBITDA Margin (%)	80.3	82.9	83.0
RoE (%)	44.7	51.5	51.2
EPS	6.3	8.3	9.7
Target PE multiple (Sep '22E)	**32**		
Target price (INR)	**289**		
Upside (%)	**50**		

Source: MOFSL

SCENARIO ANALYSIS – BEAR CASE

INR b	FY21E	FY22E	FY23E
Net revenues	2.5	2.7	3.0
EBITDA	2.0	2.1	2.3
PBT	2.2	2.3	2.6
PAT	1.6	1.7	1.9
Change YoY (%)	-8.4	6.6	10.2
Revenue Growth (%)	-1.3	6.7	9.9
EBITDA Margin (%)	78.3	77.7	77.6
RoE (%)	39.3	37.3	36.8
EPS	5.5	5.8	6.4
Target PE multiple (Sep '22E)	**25**		
Target price (INR)	**153**		
Upside (%)	**-21**		

Source: MOFSL

Financials and valuation

Income Statement (INR m)

Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
Net Sales	**1,986**	**2,304**	**2,541**	**2,570**	**2,848**	**3,502**	**3,960**
Change in Net Sales (%)	13.5	16.0	10.3	1.2	10.8	23.0	13.1
Transaction fees	1,722	2,056	2,345	2,383	2,649	3,293	3,740
Volumes (excl. REC) - BU	*41*	*46*	*52*	*54*	*61*	*76*	*87*
Other revenue	264	249	196	187	200	210	220
Total Expenses	552	456	513	526	615	641	734
EBITDA	**1,435**	**1,849**	**2,028**	**2,045**	**2,233**	**2,862**	**3,227**
% of Net Sales	72.2	80.2	79.8	79.6	78.4	81.7	81.5
Depn. & Amortization	34	103	104	152	167	179	191
EBIT	**1,400**	**1,746**	**1,924**	**1,892**	**2,066**	**2,682**	**3,036**
Net Interest	1	2	7	16	5	0	0
Other income	342	256	401	401	379	385	428
PBT	**1,741**	**2,000**	**2,317**	**2,278**	**2,440**	**3,067**	**3,464**
Tax	603	683	667	499	615	773	873
Rate (%)	34.6	34.2	28.8	21.9	25.2	25.2	25.2
Reported PAT	**1,139**	**1,317**	**1,650**	**1,779**	**1,825**	**2,294**	**2,591**
Adjusted PAT	**1,139**	**1,317**	**1,650**	**1,779**	**1,825**	**2,294**	**2,591**
Change (%)	13.5	15.6	25.3	7.8	2.6	25.7	12.9

Balance Sheet Statement (INR m)

Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
Share Capital	301	302	302	298	298	298	298
Reserves	2,481	2,536	3,401	3,603	4,151	4,839	5,616
Net Worth	**2,782**	**2,837**	**3,703**	**3,901**	**4,449**	**5,137**	**5,915**
Deferred Tax Liability	0	147	244	244	244	244	244
Capital Employed	**2,782**	**2,984**	**3,947**	**4,146**	**4,693**	**5,381**	**6,159**
Net Fixed Assets	**83**	**1,190**	**1,114**	**1,190**	**1,223**	**1,244**	**1,103**
Capital WIP	10	5	12	10	10	10	10
Investments	712	776	2,022	2,067	2,067	2,067	2,067
Curr. Assets	**4,735**	**3,772**	**3,907**	**3,414**	**3,928**	**4,596**	**5,514**
Account Receivables	2	2	459	2	2	2	2
Cash and Current Investments	4,404	3,053	3,401	3,340	3,854	4,522	5,440
Others	329	717	48	72	72	72	72
Curr. Liability & Prov.	**2,758**	**2,759**	**3,109**	**2,535**	**2,535**	**2,535**	**2,535**
Account Payables	1,719	846	1,338	756	756	756	756
Provisions & Others	1,038	1,912	1,771	1,780	1,780	1,780	1,780
Net Curr. Assets	**1,977**	**1,013**	**798**	**879**	**1,393**	**2,060**	**2,979**
Appl. of Funds	**2,782**	**2,984**	**3,947**	**4,146**	**4,693**	**5,381**	**6,159**

Source: Company, MOFSL

Financials and valuation

Ratios

Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
Basic (INR)							
EPS	4.0	4.4	5.5	6.0	6.1	7.7	8.7
Cash EPS	4.1	4.7	5.8	6.5	6.7	8.3	9.3
BV/Share	9.7	9.4	12.3	13.1	14.9	17.2	19.8
DPS	4.6	2.2	0.0	2.5	4.3	5.4	6.1
Payout (%)	114.8	50.7	0.0	41.9	70.0	70.0	70.0
Valuation (x)							
P/E	48.4	44.2	35.3	32.3	31.5	25.1	22.2
Cash P/E	47.0	41.0	33.2	29.8	28.9	23.3	20.7
P/BV	19.8	20.5	15.7	14.7	12.9	11.2	9.7
EV/EBITDA	35.4	29.8	27.0	26.5	24.0	18.5	16.1
Dividend Yield (%)	2.4	1.2	0.0	1.3	2.2	2.8	3.2
Return Ratios (%)							
RoE	41.5	46.9	50.5	46.8	43.7	47.9	46.9
RoCE (post-tax)	41.5	45.8	47.8	44.3	41.4	45.5	44.9

Source: Company, MOFSL

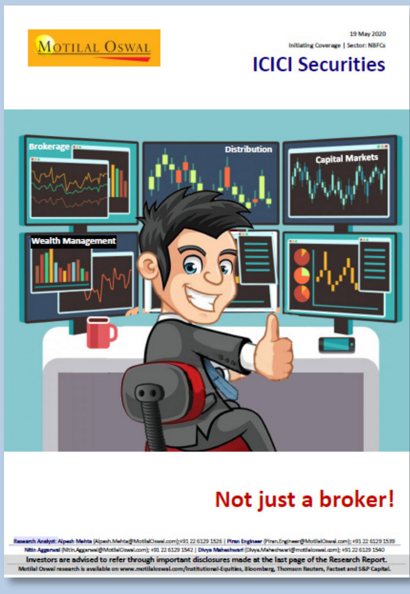
Cash Flow Statement (INR m)

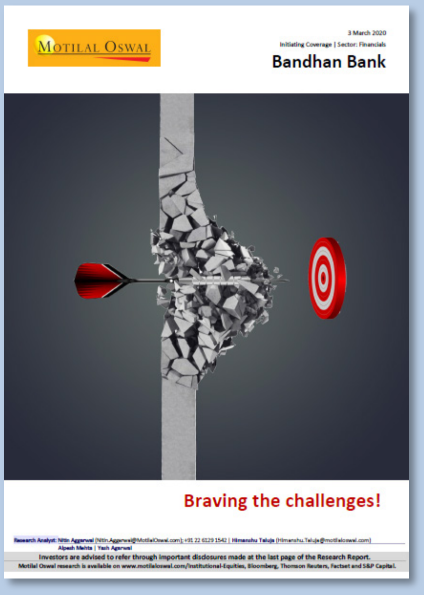
Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
EBITDA	**1,435**	**1,849**	**2,028**	**2,045**	**2,233**	**2,862**	**3,227**
WC	1,235	-25	-54	-287	0	0	0
Others	0	6	5	11	0	0	0
Direct taxes (net)	-610	-518	-596	-490	-615	-773	-873
CF from Op. Activity	**2,060**	**1,312**	**1,383**	**1,279**	**1,618**	**2,089**	**2,354**
Capex	-13	-1,204	-36	-49	-200	-200	-50
FCFF	**2,046**	**107**	**1,347**	**1,230**	**1,418**	**1,889**	**2,304**
Interest income	154	37	76	16	379	385	428
Others	-347	832	-662	-14	0	0	0
CF from Inv. Activity	**-207**	**-334**	**-621**	**-48**	**179**	**185**	**378**
Share capital	0	0	0	0	0	0	0
Borrowings	0	0	0	0	0	0	0
Finance cost	-1	0	-7	-8	-5	0	0
Dividend	-1,095	-1,271	-801	-1,590	-1,277	-1,606	-1,814
Others	0	8	24	-16	0	0	0
CF from Fin. Activity	**-1,096**	**-1,263**	**-784**	**-1,614**	**-1,282**	**-1,606**	**-1,814**
(Inc)/Dec in Cash	**757**	**-285**	**-23**	**-383**	**514**	**667**	**918**
Opening balance	60	816	531	508	273	787	1,454
Closing balance	**816**	**531**	**508**	**125**	**787**	**1,454**	**2,372**

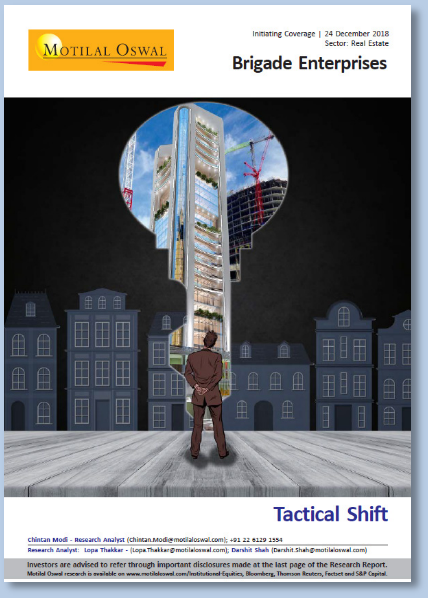
Source: Company, MOFSL

REPORT GALLERY

RECENT INITIATING COVERAGE REPORTS







NOTES

Explanation of Investment Rating	
Investment Rating	**Expected return (over 12-month)**
BUY	>=15%
SELL	< - 10%
NEUTRAL	< - 10 % to 15%
UNDER REVIEW	Rating may undergo a change
NOT RATED	We have forward looking estimates for the stock but we refrain from assigning recommendation

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