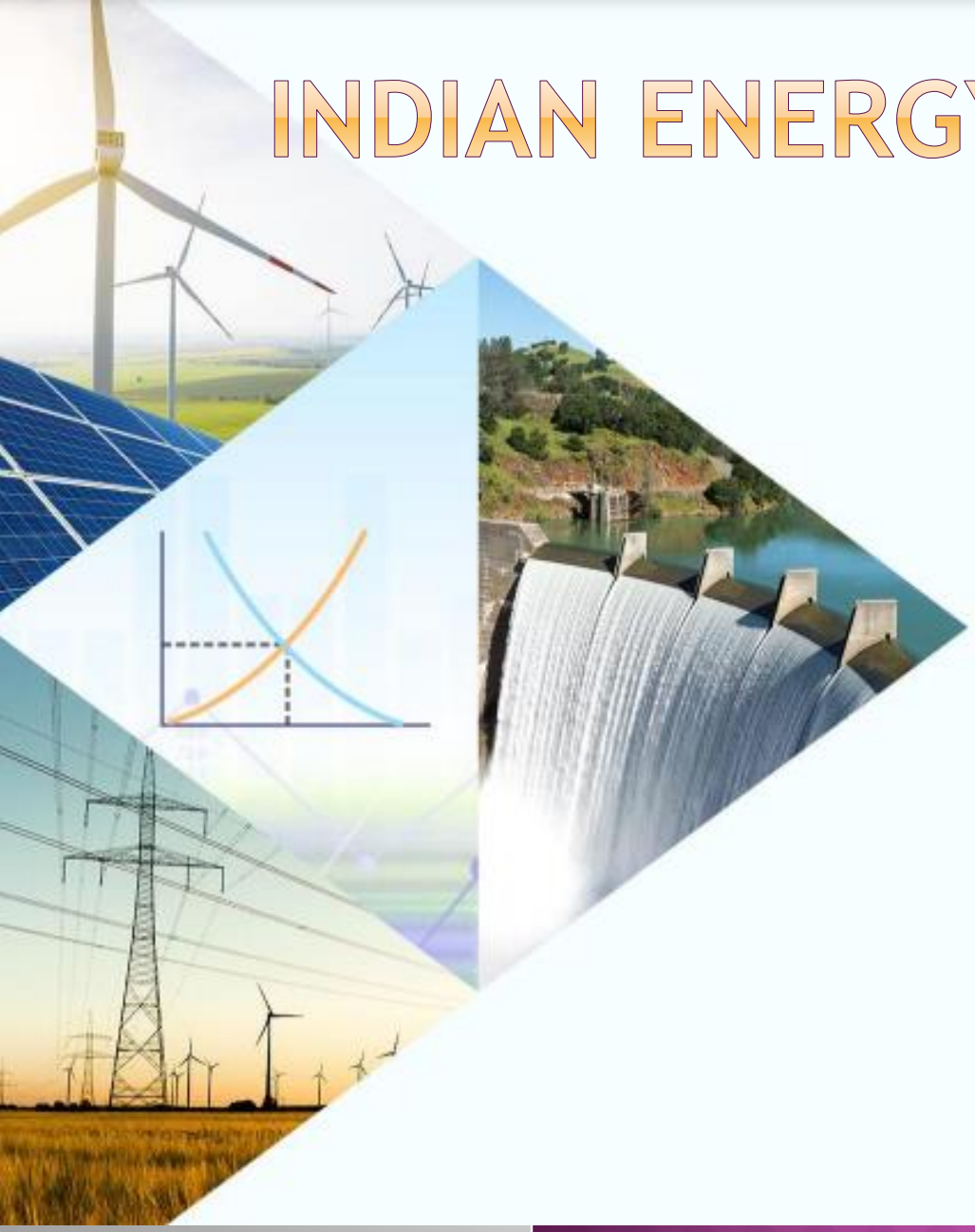
INDIAN ENERGY EXCHANGE

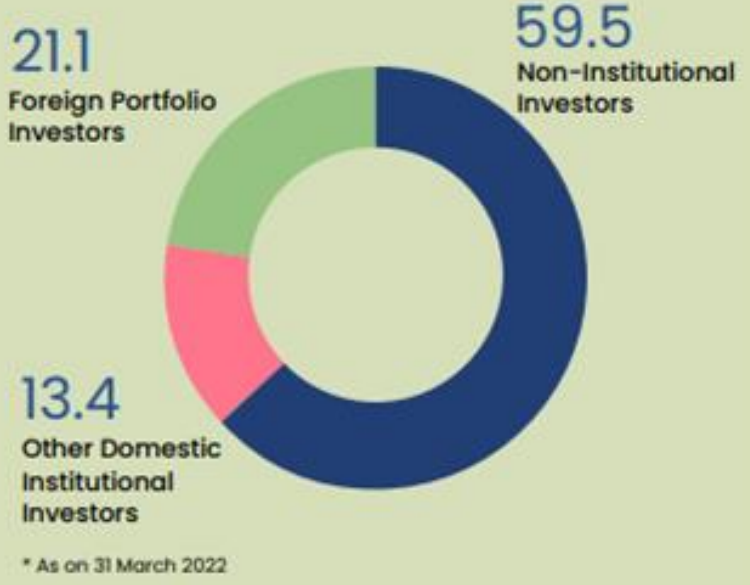


Research report as on

14-09-22

CMP : 163

Market Capitalization : 20,193 Cr



PEE AAR SECURITIES LTD.

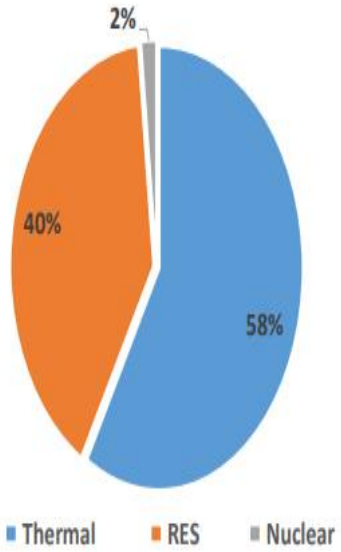
BY: HIMANSHI KHOSLA
(FUNDAMENTAL RESEARCH ANALYST)

One of the most popular investment terminologies used while identifying quality stocks is **'stocks with an investment moat'**. The 'moat' indicates an edge a company has over its competitors. *When we talk about moat, one of the companies that comes first to mind is Indian Energy Exchange Ltd (IEX).* IEX commands a market share of ~90% in Indian power exchange market.

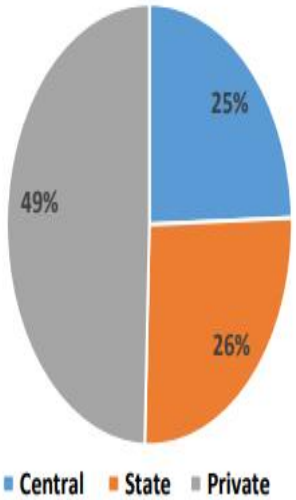
- Indian Energy Exchange (IEX) is the premier electricity exchange in India, which facilitates trading of electricity.
- It was incorporated as a public limited company on March 26 2007 in Maharashtra. The Company obtained a certificate of commencement of business on April 17 2007.
- IEX is approved and regulated by **Central Electricity Regulatory Commission (CERC)** and has been operating since 27 June 2008.
- Providing an automated trading platform for physical delivery of electricity IEX enables efficient price discovery and offers participants the opportunity to trade in electricity contracts, Renewable Energy Certificates (RECs) and ESCerts (Energy Saving Certificates).
- Just like stocks are traded on NSE and BSE regulated by SEBI, similarly electricity is traded on IEX, PXIL and HPX regulated by CERC.

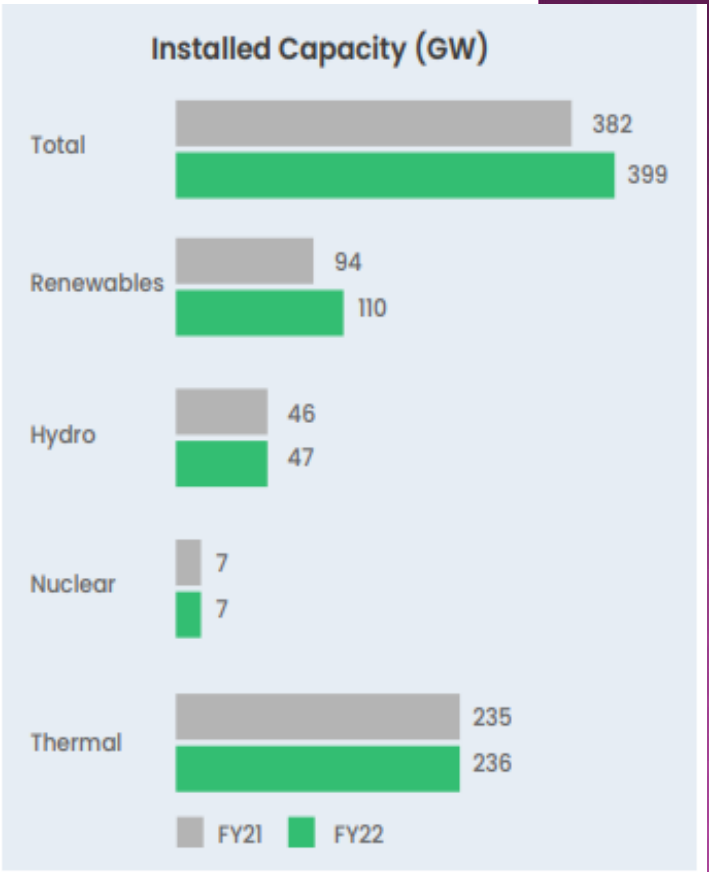
Installed Capacity = 404 GW

Capacity by source - June'22



Capacity by ownership - June'22





ROLE OF POWER EXCHANGES

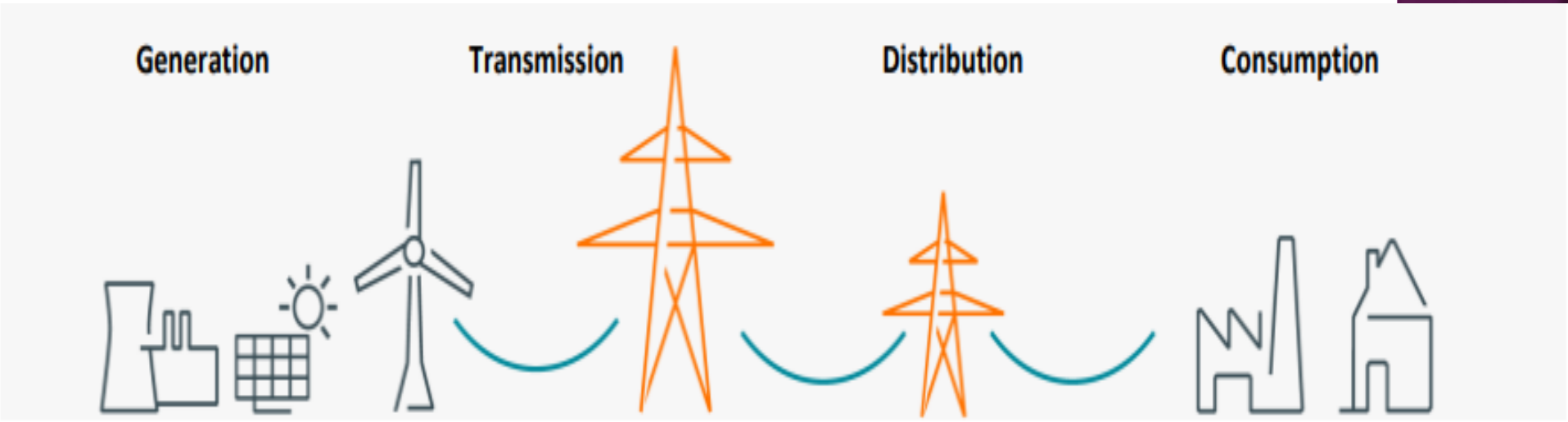
There are two major players in this industry.

- **GENCOS :** These are the company that generate electricity. Some major examples of such companies are Tata Power, Reliance power, JSW Power, Adani Power, NTPC Ltd. etc.
- **DISCOMS :** These are the companies that play role in distribution the electricity to the end consumers, i.e., households, offices, schools etc. Some major examples of such companies are TATA POWER DELHI DISTRIBUTION LIMITED., MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD,

The distribution companies purchase electricity from the electricity generating companies. For this, both the companies have to enter in a long term contract known as Power Purchase Agreement (PPA). This contract is 20-25 years long contract. Companies prefer long contracts to avoid the risk of short-term price volatility. But this estimation of future electricity requirement sometimes causes surplus/deficit electricity in the hands of distribution companies.

Here comes the role of power exchanges : **To offer demand-supply-imbalance management.** The one who have excess power supply can sell that much MW power and the one who have shortage of power supply due to excess demand can purchase from the trading platform. India also trades cross border supply electricity to countries such as Nepal, Bangladesh etc.

ELECTRICITY VALUE CHAIN



Generation - de-licensed activity

- Installed Capacity – 404 GW:
  - 161 GW renewables*
  - 49% private

World's largest network

- Inter-regional transmission capacity: 112GW

Distribution reforms underway:

- Tariff reforms
- Choice to consumers

Large installed capacity base

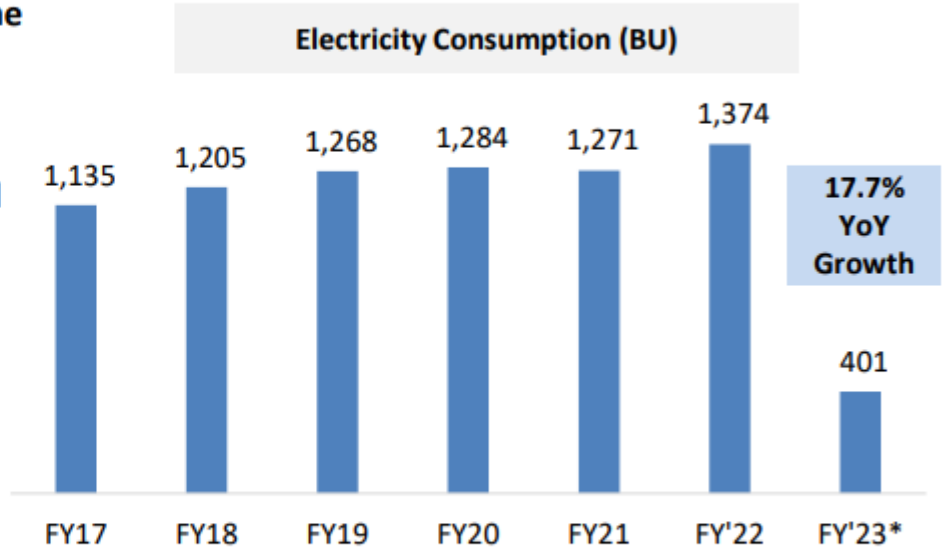
- Peak demand at 211.9 GW

ELECTRICITY INDUSTRY

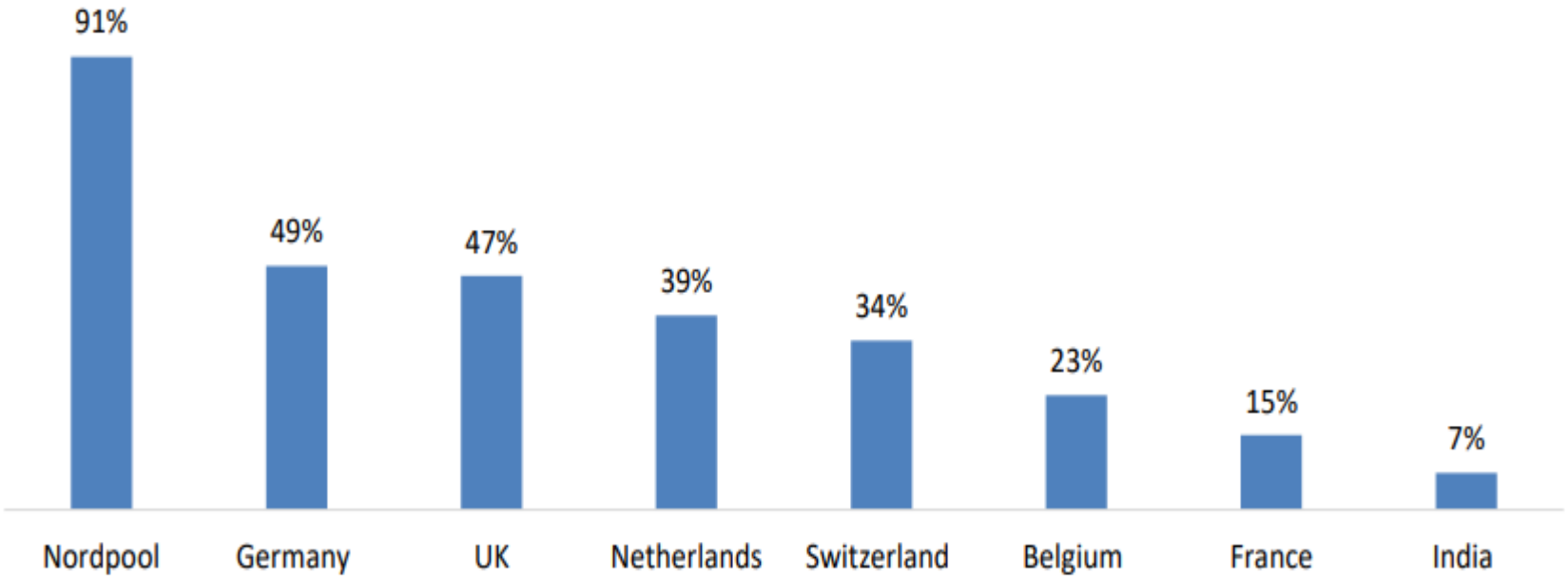
Electricity Growth Drivers

India is placed as the most promising economy on the global map:

- **Industrialization**
  - GDP growth of 8-10% expected to drive demand for electricity
  - Core sector growth will drive electricity consumption
- **Rapid urbanization**
  - 17 of 20 world's fastest growing cities in India
- **Consumer demand growth**
  - Last mile connectivity - Saubhagya : Power for All
  - Power on 24x7 basis

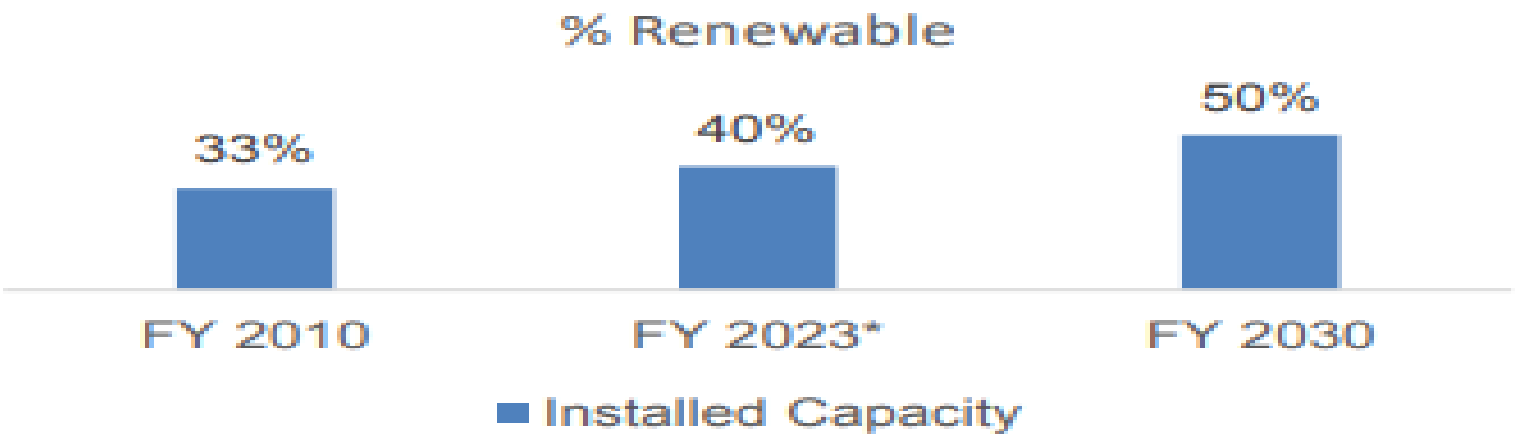


Immense potential to deepen India's Power Market



Markets are in the range of 30-80% in developed economies.
At 7.4% in FY22, India has an opportunity to deepen the power market.

Shifting Energy Mix



- 161 GW installed renewable capacity (including large hydro) in Jun'22
- India aspires to achieve 500 GW of renewable capacity by 2030

THE PRODUCTS OFFERED BY IEX FOR TRADING

- **DAM (Day-ahead-market) -** Launched in June, 2008, in this segment, participants transact electricity on 15-minutes block basis, **a day prior to the delivery of electricity.** Both buyers and sellers submit their anonymous bids electronically during the market bid session and matching of bids is done on double sided auction mechanism with uniform market clearing price. **The DAM constitutes the majority of the energy contracts (78% of revenues) that are traded on IEX.**

- **TAM (Term-ahead-market) -** Launched in September 2009, contracts under TAM cover a range for **buying/selling electricity for duration up to 11 days (currently 7% of revenues).** It enables participants to purchase electricity for the same day through intra-day contracts, for the next day through day-ahead contingency, on daily basis for rolling seven days through daily contracts, and on weekly basis through weekly contracts to manage their electricity portfolio for different durations.

- **RECs (Renewable energy certificates) -** Launched in February 2011, REC market facilitates transaction in environmental attributes- both solar and non-solar. The Renewable Energy (RE) generator can opt to get RECs against green attributes of their generation. IEX enables sale of such environmental attributes, separately from the electricity generated from renewable resources, in accordance with the regulations issued by the CERC. RECs are traded on the last Wednesday of every month.

- **Energy Saving Certificates -** ESCerts are the tradable certificates under the Perform, Achieve, Trade (PAT) Scheme of Bureau of Energy Efficiency (BEE), a market-based mechanism to incentivise energy efficiency in large energy-intensive industries. (Consumers achieving reductions above their targets receive ESCerts, which can be traded on any power exchange. Consumers that don't achieve respective targets in accordance with the PAT scheme must buy ESCerts to offset their shortfall.) IEX became the first and only Power Exchange to commence trading in ESCerts on 26 September 2017.

- **RTM (Real Time Market) -** IEX recently launched this product on 1st June, 2020. It have every half an hour sessions during the day with delivery of power within an hour of the closure of the bid session.

Green Market

As per the Central Electricity Authority (CEA), India's apex power sector planning body, the country's power requirement will likely touch 817 GW by 2030, with clean energy accounting for over half of this. Until August 2020, the Exchange-based power markets only offered trade in Renewable Energy Certificates (RECs). Entities on the demand side were procuring renewable energy mainly through longterm PPA contracts to fulfill their Renewable Purchase Obligations, mandated as per the Indian Electricity Act, 2003. This changed in August 2020, when the Central Electricity Regulatory Commission approved trading in renewable energy with Term-Ahead contracts on the power exchanges, paving way for the establishment of a first-of-its-kind "Green Market" in India. The Real-Time market commenced in June 2020, the Green Term-Ahead Market commenced in August' 2020 while the Green Day-Ahead Market commenced in October 2021. Together these three market-segments offer demand-supply-imbalance management through various delivery-based contracts.

Market Segments

Integrated Day Ahead Market

DAM since Jun'08

- Delivery for next day
- Price discovery: Closed , Double-sided Auction
- 15 min. contracts, Daily trade

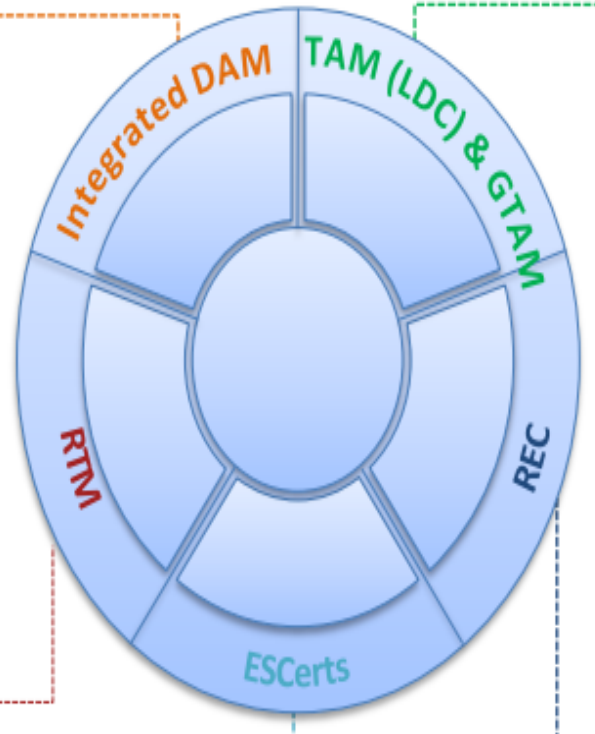
G-DAM since Oct'21

- Same as DAM, but priority for GDAM in price & volume discovery
- Option to carry forward uncleared bids in GDAM to conventional DAM
- Single price for different RE -solar, non-solar

Real Time Market

Since Jun'20

- Half Hourly market (48 times per day)
- Delivery for 30 minutes in two-time blocks of 15 minutes each
- Double sided closed auction with uniform price



Intraday Market & Contingency Market Segment

Since Jul'15

- Intraday Market : hourly and or 15-minute contracts on same day on rolling basis
- Day-Ahead Contingency- 24-hourly and or 15-minute contracts on day-ahead basis for 00:00 hours to 24:00 hours of next day
- Continuous Trade

Term-Ahead Contracts (Longer Duration Contracts)

Since June'22 (up to 3 months)

- Weekly Contracts
- Daily, Monthly
- Any day (s) single side Reverse Auction

Green Term-Ahead Contracts

Since 21 Aug'20

- 15-minute quotation of quantity (MW) and price (Rs/MWh)
- Price discovery and matching on 'Continuous Trade' basis
- Revision in schedule not allowed

Energy Saving Certificates

Since Sep'17

- 1 ESCert = 1 Mtoe (Metric Tonne Oil Equivalent)

Renewable Energy Certificates

Since Feb'11

- Green Attributes as Certificates
- **Sellers:** RE generators not under feed in tariffs
- **Buyers:** Obligated entities; 1MWh equivalent to 1 REC

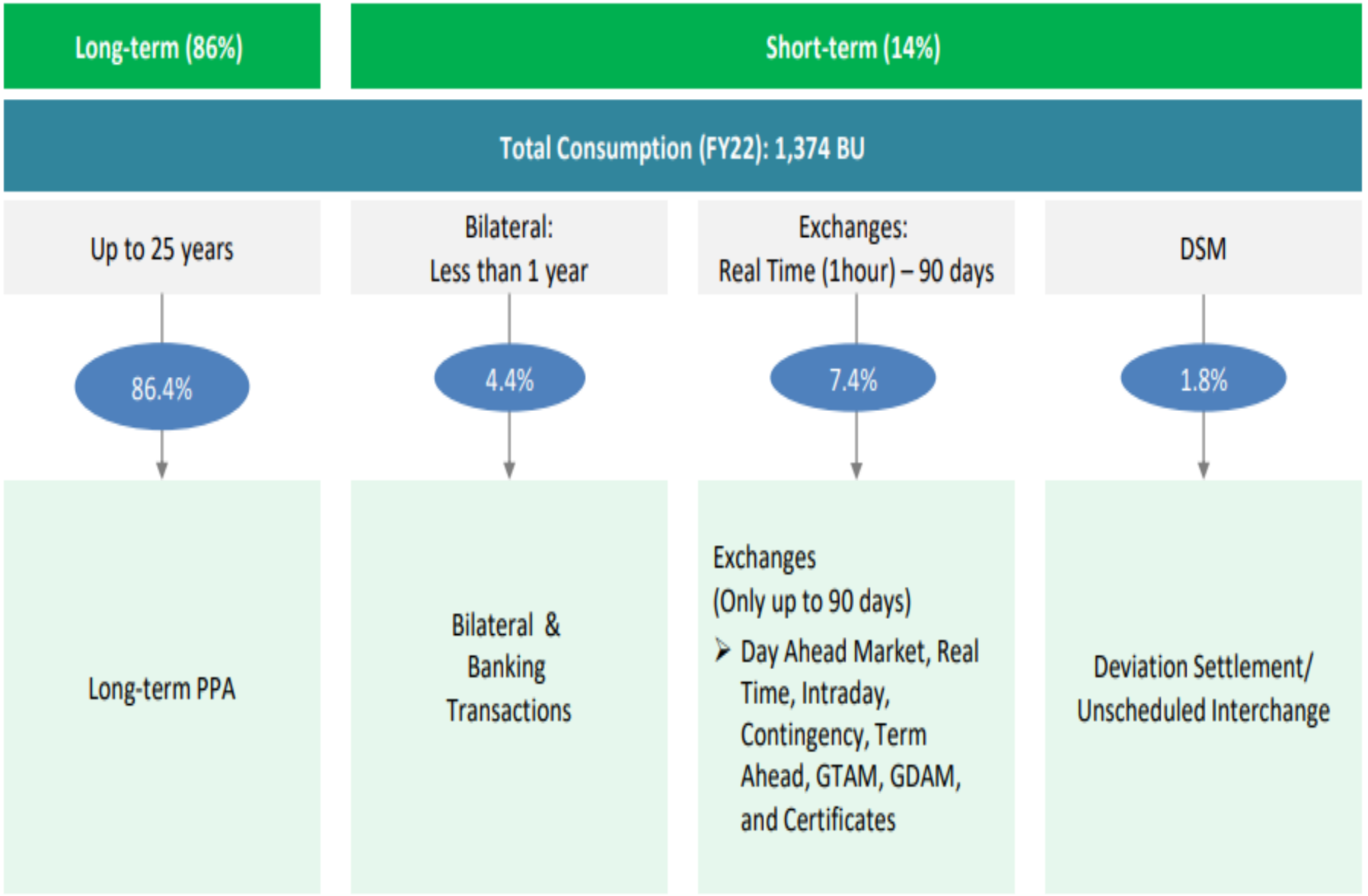
NEW PRODUCT LAUNCHES

2021 - Launched Cross-border electricity trading with Nepal, and Bhutan.

- Launched MILP based Trading Algorithm and Web-based Platform Highest single day volume of 383 MU across all market segments.
- Launched a new market segment – Green Day-Ahead Market

2022 - Launch of Hydro-power contracts in Green Term-Ahead market segment

Highest yearly volume of 102 BU across all market segments


Long-term (86%)
Short-term (14%)
Total Consumption (FY22): 1,374 BU
Up to 25 years
Bilateral:
Less than 1 year
Exchanges:
Real Time (1hour) – 90 days
DSM
86.4%
4.4%
7.4%
1.8%
Long-term PPA
Bilateral & Banking Transactions
Exchanges
(Only up to 90 days)
Day Ahead Market, Real Time, Intraday, Contingency, Term Ahead, GTAM, GDAM, and Certificates
Deviation Settlement/ Unscheduled Interchange

GROWTH DRIVERS

New launches	➢ Upcoming product launches – Ancillary Market, Capacity Market, Gross Bidding Contract ➢ Derivatives – IEX price to be used as reference ➢ Diversification opportunities – Play in the energy basket of India
Efficient Price discovery	➢ Efficient price discovery has been the biggest growth driver for exchanges in the past ➢ Discoms can source cheaper power through Exchange to meet shortages ➢ Industries can source competitive power to reduce their input costs ➢ Prices at Exchange lower than Bilateral contracts
Flexibility	➢ Exchange provides flexibility to purchase power as per requirement throughout the year ➢ Option available to Buy/Sell different quantum for each 15 mins time block. Minimum bid quantum can be as low as 0.1 MW ➢ Availability of power within 1hour of requirement

Favorable Policy and Regulatory Initiatives

- **Connectivity and General Network Access to the inter-State Transmission System Regulations (CERC):** GNA will rationalize transmission charges for exchange transactions and will further promote deepening of markets.
- **Draft sharing of ISTS charges and losses regulations (CERC):** This will ensure avoidance of duplication of transmission charges in collective transactions
- **Final Electricity (promoting renewable energy through Green Energy Open Access) Rules, 2022 (MoP):** Addressing the issues that have hindered the growth of open access in India and also incentivize the consumers to go green.
- **Terms and Conditions for trade of Renewable Energy Certificates (CERC):** This will create fungibility of RECs issued irrespective of the type of renewable technology and will provide flexibility to the RE generators to sell their power in green markets or in DAM market and get REC in addition to DAM sale price.
- **MoP notified Late Payment Surcharge and Related Matters Rules, 2022:** The Gencos are now free to sell power on the Exchanges:
  - ✓ If a distribution licensee does not intimate their schedule for requisitioning power on day ahead basis from generating company under PPA for purchase of power by 10am
  - ✓ If the Discom doesn't establish Payment Security Mechanism (PSM) or continues to default for a period of 30 days from expiry of the notice
- **Directions for coal-based GENCOs (MoP):** All imported coal-based plants directed to operate and generate to their full capacity till Oct'22. The generators will have an option to make payment according to the benchmark rate or at a mutually negotiated rate. The GENCO can sell on power exchange if the rate of payment is not agreed and in case of surplus power beyond beneficiary requirement.

ANOTHER DRIVER IS THE LONGER-TERM CONTRACTS AND 'DERIVATIVES TRADING' IN ENERGY.

Introduction of longer duration delivery bases contracts in power exchanges

CERC has approved IEX the to Introduce long dated electricity contracts, which includes monthly and quarterly contracts and soon it could also approve half yearly and even yearly contracts. CERC has also allowed cost plus generators to sell on exchanges if not scheduled by 10 am. This move would also benefit state power distribution companies to tie up short-term power supply for up to three months on power exchanges at a better and transparent price

THREAT TO MONOPOLY

- The biggest threat is the emergence of the new power exchange in the country - Hindustan Power Exchange (HPX). Backed by BSE and Power Trading Corporation (PTC), HPX was launched mid-week; the operations of which were commenced upon receiving all necessary approvals from Central Electricity Regulatory Commission, after being floated in 2019.
- **PTC India and BSE Investments hold approximately 25 per cent each in HPX, followed by 9.9 per cent held by private sector lender ICICI Bank.**
- With the commencement of HPX, it becomes the third power exchange in the country. The exchange is backed by the latest technology and a series of innovative features. It will initially offer trading in contingency contracts, green contingency contracts, and renewable energy certificates. It will slowly and steadily increase its product portfolio and provide a wide range of contracts to address the demand of different segments of the electricity market.

THREAT : MARKET COUPLING

Shares of Indian Energy Exchange (IEX)are down over 43% from all time high price of Rs. 318.66 per share.

The government wants to bring in a ‘market coupling’ mechanism — a common price clearing for both the exchanges. IEX opposes this as it fears diminution in its market share.

A competitive market might also increase the options of discoms and other consumers when it comes to purchasing spot power according to their requirements. Effectively, they might be able to cut costs.

Through the market coupling approach, orders received from multiple power exchanges will be combined and cleared by a common algorithm, resulting in a single price for the same delivery periods and geographies. “Once market coupling is applied, exchanges would be reduced to bid aggregators, which in turn would diminish the competitive advantages enjoyed by the IEX”.

LEGAL ISSUES

- Today, if you are a buyer of electricity (say, a factory), and wish to buy from the market, you can do so only for a period up to the next 11 days. Nor are forward contracts allowed — yet.
- These had got stuck in a tussle over jurisdiction — who should oversee these, SEBI or Forward Markets Commission? The matter has since been resolved (SEBI for cash-settled trades and FMC where electricity is supplied), but the Supreme Court has to formally approve this — which is pending for about a year-and-a-half.
- Whenever longer-term contracts — say, for three or six months — and derivatives are allowed, more players will jump to the exchanges. IEX's blue ocean will hence get bigger.
- Another external issue is that of trading in renewable energy certificates (REC), which is also stuck in the courts. This is not a big part of IEX's business, but a revenue-earner, nevertheless. RECs are tradable instruments given to renewable energy generators who settle for a less-than-premium for their electricity, for which sacrifice they get the RECs that they can sell in market (IEX or PXIL).
- The buyers of RECs are the 'obligated entities'— utilities and industries like cement and steel, who have a Renewable Purchase Obligation to meet. The court case is over whether the abolition of a minimum (floor) price for the RECs by the Central Electricity Regulatory Commission is valid or not. When this is decided, one way or the other, REC trading will resume, meaning more earnings for IEX.

IGX

- Indian Gas Exchange Limited (IGX) is India's first authorised Gas exchange offering a nationwide automated trading platform for the physical delivery of Natural Gas. It is the subsidiary of IEX.
- On the gas market front, the Indian Gas Exchange (IGX) traded 4.7 million mmbtu in terms of cumulative volume. It has posted a PAT of 1.5 crore during the quarter.
- The total number of participants at the Gas Exchange has increased to 30 with the addition of four new members: OPAL, HPCL, SHELL and GSPC.
- IGX also received approval from PNGRB to commence domestic gas trading on its platform. This development will help IGX fulfill its commitment to increase the sell side liquidity, along with creating more opportunities for the sale of domestic gas and the discovery of a unique price.

FINANCIALS

(Amount in ₹ lakh)

Particulars	Standalone		Consolidated	
	FY22	FY21	FY22	FY21
Revenue from operations	42,554.94	31,711.38	43,103.51	31,785.06
Other Income	5,232.81	4,027.17	5,336.67	3,838.04
Total Revenue	**47,787.75**	**35,738.55**	**48,440.18**	**35,623.10**
Less: Total Expenditure	7,827.09	7,559.02	8,658.24	8,578.17
Profit before share of profit of associates, exceptional items and tax	39,960.66	28,179.53	39,781.94	27,044.93
Share in profit of associate	-	-	144.27	-
Profit before tax and exceptional items	39,960.66	28,179.53	39,926.21	27,044.93
Exceptional items (Profit on loss of control of subsidiary)	-	-	597.77	-
Profit before tax	39,960.66	28,179.53	40,523.98	27,044.93
Less: Provision for Tax	9,709.44	6,830.71	9,660.40	6,501.81
Profit after tax (A)	**30,251.22**	**21,348.82**	**30,863.58**	**20,543.12**
Other comprehensive income for the year, net of income tax (B)	11.25	25.46	9.45	18.72
Total comprehensive income for the year (A+B)	**30,262.47**	**21,374.28**	**30,873.03**	**20,561.84**
Profit for the year attributable to:				
Shareholders of the Company	30,251.22	21,348.82	30,925.55	20,609.33
Non-controlling interests	-	-	(61.97)	(66.21)
Earnings per equity share [face value ₹1/- per share]				
Basic (₹)*	3.38	2.38	3.45	2.30
Diluted (₹)*	3.38	2.38	3.45	2.30

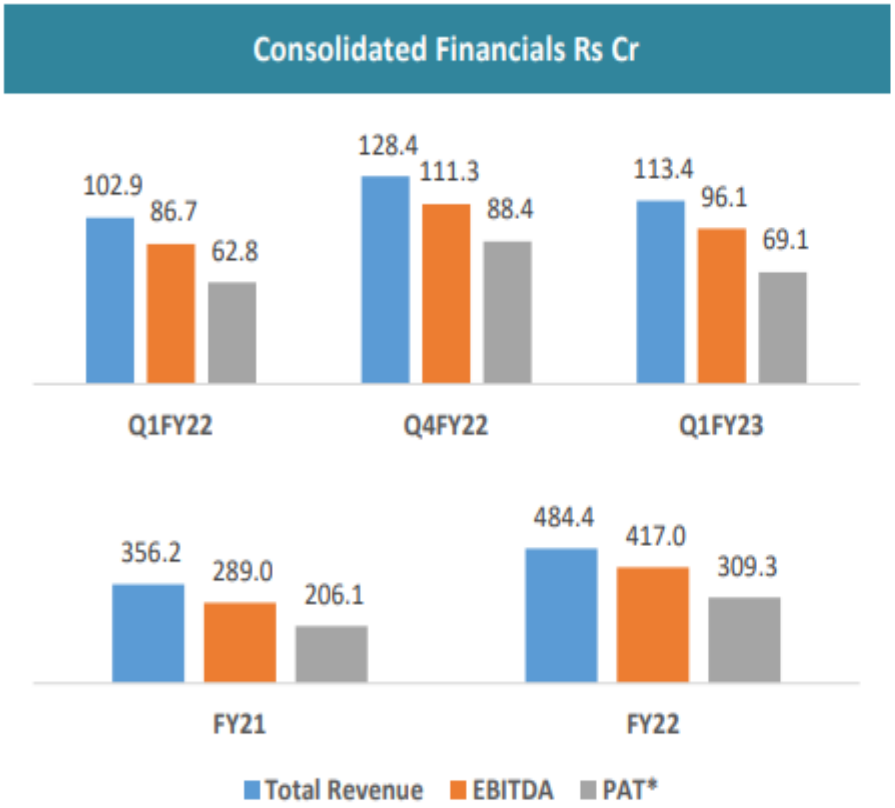
FINANCIALS ANALYSIS

- During FY22, the total revenue of the Company stood at ₹ 47,787.75 lakh as compared to ₹ 35,738.55 lakh in the previous year. The **operating revenue** increased from ₹ 31,711.38 lakh in FY21 to ₹ 42,554.94 lakh in FY22, with growth rate of **34.19%.** The growth was mainly due to higher volume from 75 BU in FY21 to 102 BU in FY22 which was mainly driven by Real-Time Market (RTM), Green Term-Ahead & Day-Ahead (GTAM and GDAM).
- The Company continued to perform well and maintain its leadership position during the financial year with **profit after tax (PAT)** of ₹ 30,251.22 lakh as compared to ₹ 21,348.82 lakh in FY21 with YoY **growth of 41.70%.**
- Depreciation charges increased by 4.3% and finance costs decreased by 3.9% YoY, respectively.
- Basic and Diluted **EPS** of the Company **increased by 42.02%** to ₹ 3.38 for the FY22 against ₹ 2.38 in FY21.

Return on Equity	
10 Years:	45%
5 Years:	47%
3 Years:	47%
Last Year:	49%

Compounded Profit Growth	
10 Years:	24%
5 Years:	24%
3 Years:	24%
TTM:	31%

Robust financial performance



Breakup of standalone revenues (%)	Q1FY22	Q4FY22	Q1FY23
Transaction Fees	83%	83%	82%
Admission and Annual Fees	5%	5%	5%
Other Income	12%	12%	13%
Total	**100%**	**100%**	**100%**

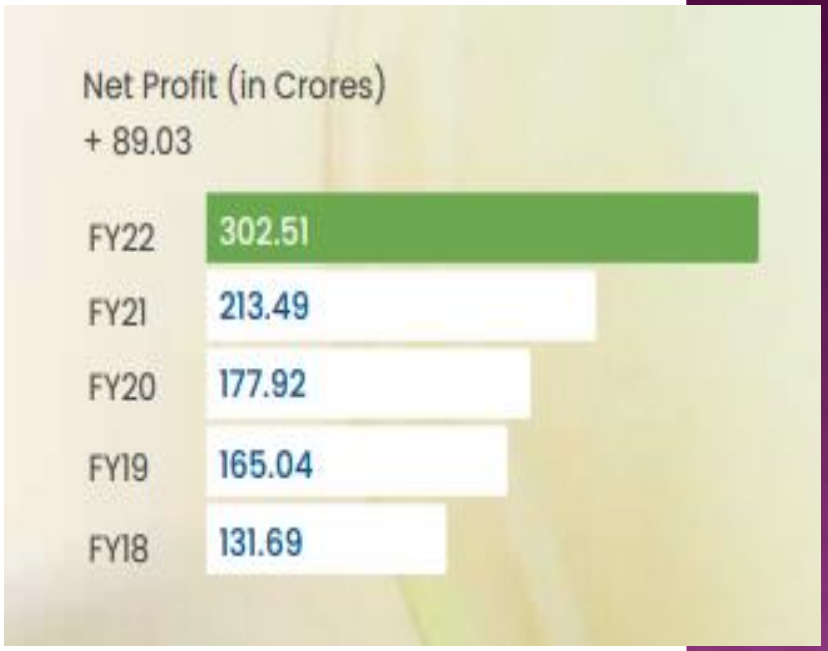
KEY RATIOS

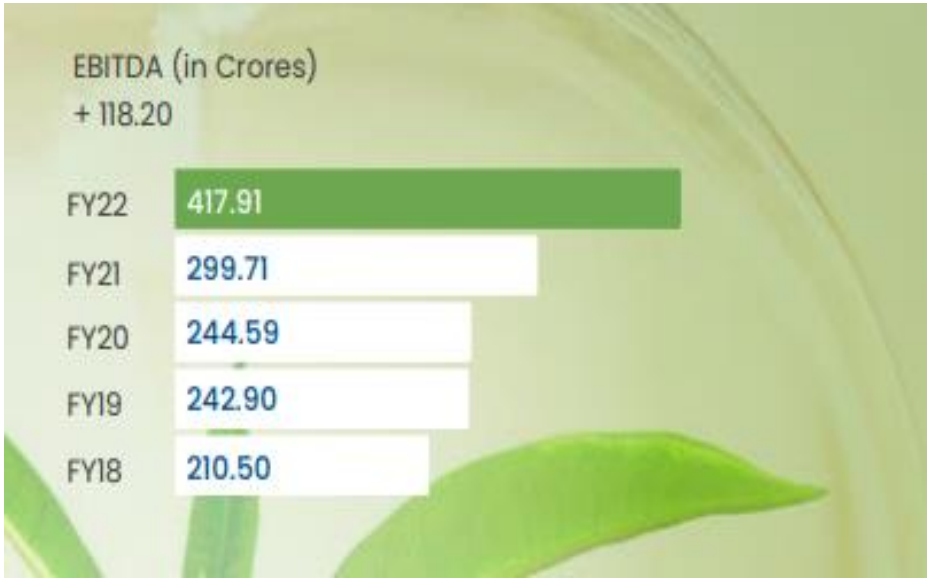
Current Ratio: The company's current ratio deteriorated and stood at 1.5x during FY22, from 1.9x during FY21. The current ratio measures the company's ability to pay short-term and long-term obligations.

Other Liabilities: Trade payables have increased from **76 crores** in Mar 2020 to **635 crores** in march 2022.

Return on Equity (ROE): The ROE for the company improved and stood at 49% during FY22. The ROE measures the ability of a firm to generate profits from its shareholders capital in the company.

Return on Capital Employed (ROCE): The ROCE for the company improved and stood at 63% during FY22, from 60 during FY21. The ROCE measures the ability of a firm to generate profits from its total capital (shareholder capital plus debt capital) employed in the company.





PEE AAR SECURITIES LTD.

CONCLUSION

Good to BUY at current levels

The market is at a very nascent stage with only around 7.4% of India's power produced transacted through exchanges compared to 30% in developed economies, but the trend is changing with preference towards short term contracts.

Also, CERC has approved IEX to Introduce long dated electricity contracts, which includes monthly and quarterly contracts.

With its large customer network and advanced technology infrastructure, the company has created highest liquidity for its traded products.

IEX is expanding its pie via adding new products to its portfolio. Recently, it has added Real Time Market (RTM) product enabling consumers to buy power just an hour before delivery.