Dated: December 18, 2019

The Manager
BSE Limited
Corporate Relationship Department
Phiroze Jeejeebhoy Towers
Dalal Street
Mumbai- 400001

The Manager
National Stock Exchange of India Ltd
Listing Department
Exchange Plaza, 5th Floor, Plot no C/1
G Block, Bandra Kurla Complex
Bandra (E), Mumbai-400 051

Scrip Code: BSE- 540750; NSE- IEX

Subject: Investor Presentation Q2 FY 2020

Dear Sir / Madam,

Pursuant to Regulation 30 of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, please find attached an Investor Presentation for Q2 FY 2020.

This is for your information and records.

Thanking You

Yours faithfully,

For **Indian Energy Exchange Limited**

Indian Energy Exchange Limited

Vineet Harlalka
Company Secretary & Compliance Officer

Encl: as above

Investor Presentation
- Q2 FY'20

In this presentation

IEX : Who we are

Sector transformation

Electricity value chain & Power market structure

Way forward

Who we are

- Automated, open and transparent platform for physical delivery of electricity
- Commenced operations in 2008, CAGR 33%, CERC regulated
- India's leading power exchange, Market Share: **97%**
- Average daily trade **6000+ MW**
- Record day volume : 308 MU's (12,900 MW)
- Our customer base

  4000+ Industries **I** **55** Discoms (all) **I 100+** ESCert Entities

  400+ Generators **I** **1500+ RE** Generators & Obligated entities
- *Publicly listed company (NSE and BSE)*
- *ISO 9001:2015, ISO 27001:2013, ISO 14001:2015*

Transparency

Liquidity

Competition

Benefitting Power Sector….and the nation

- Provides benchmark prices for all electricity transactions
- Transparent Mechanism for Price Discovery
- High liquidity on exchange has ensured lowest cost and assured supply

Truly benefited Indian Power Sector

Generation

Signals for Generating Capacity addition (~35 GW Merchant plants)

Transmission

Investments in transmission- congestion free – One Grid One Price

Distribution

- **Lower power prices** for discoms, end consumers.
- **Avoids buying under take-or-pay contracts.**
- **Flexibility** on 15-min basis

Market segments

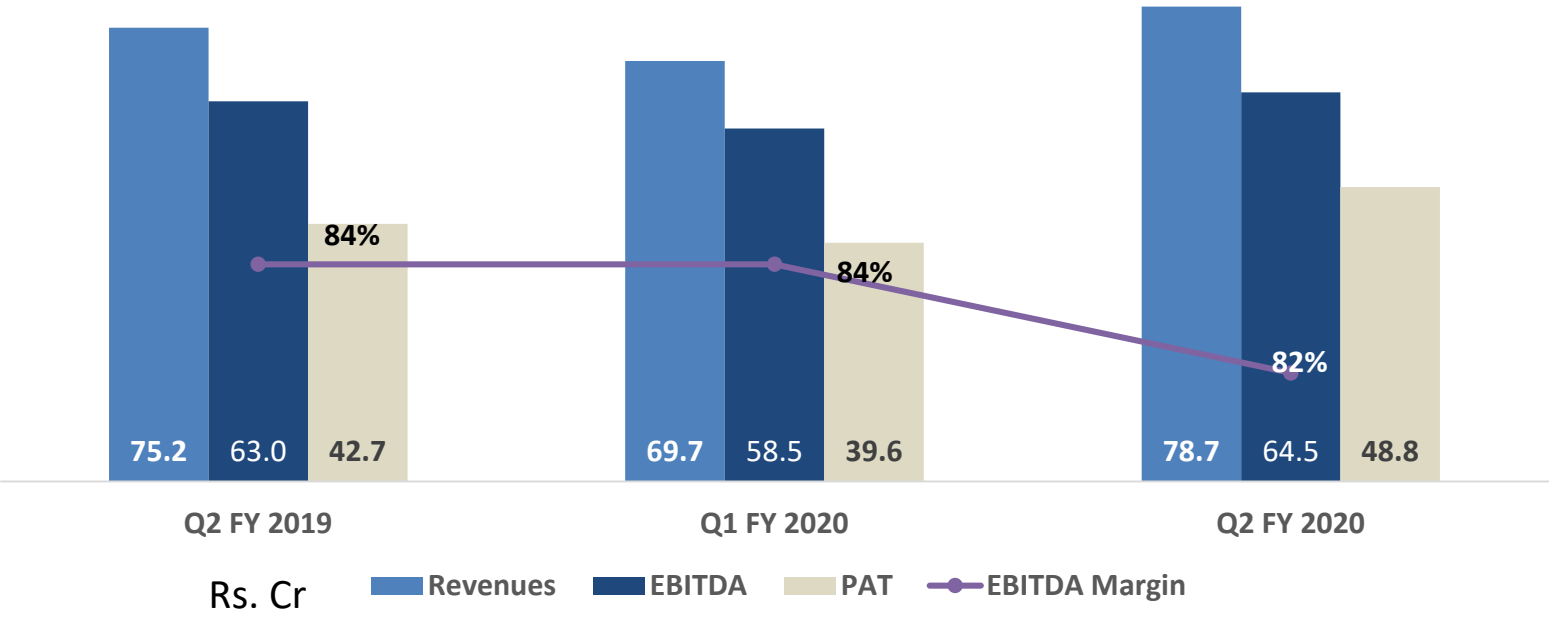
Day-Ahead Market	• *Delivery for next day* • *Price discovery: Closed , Double-sided Auction*
Term-Ahead Market	• *Intraday: For Delivery within the same day* • *Day Ahead Contingency: Another window for next day* • *Daily and weekly contracts*
Renewable Energy Certificates	• *Green Attributes as Certificates* • *Sellers : RE generators not under feed in tariffs* • *Buyers: Obligated entities; 1MWh equivalent to 1 REC*
Energy Saving Certificates	• *1 ESCert = 1 mtoe (metric Tonne of Oil Equivalent)* • *Trading Session on every Tuesday of the Week* • *Trading time 1300 hrs to 1500 hrs*

Auction

Continuous

Source: Company

Robust financial performance



Focus on operational excellence and financial prudence

Breakup of revenues	Q2 FY 2019	Q1 FY 2020	Q2 FY 2020
Transaction Fees	82%	81%	80%
Admission and Annual Fees	6%	6%	6%
Other Income	11%	13%	14%

Source: Company

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Sector transformation drivers

Decarbonization

Deployment of low-carbon technologies - wind and solar.

Outlook:

- Renewables to become leading energy sources
- Emerging new tech like hybrids

Decentralization

Small-scale generation across T&D network

Outlook:

- RE a threat to centralized energy production
- Requirement of local solutions

Digitization

Intelligent CS and Apps to optimize plants and grid

Outlook:

- Digital Tech to promote aggregation solutions

Democratization

Empowered consumers - economic power shift

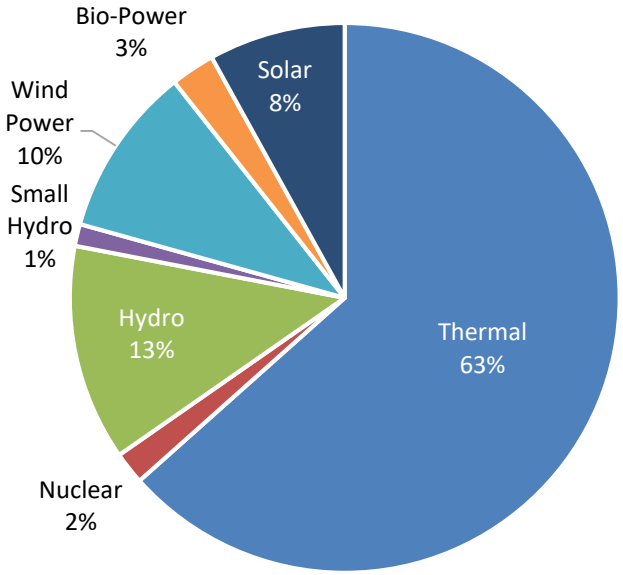
Outlook:

- Peer to peer energy trading

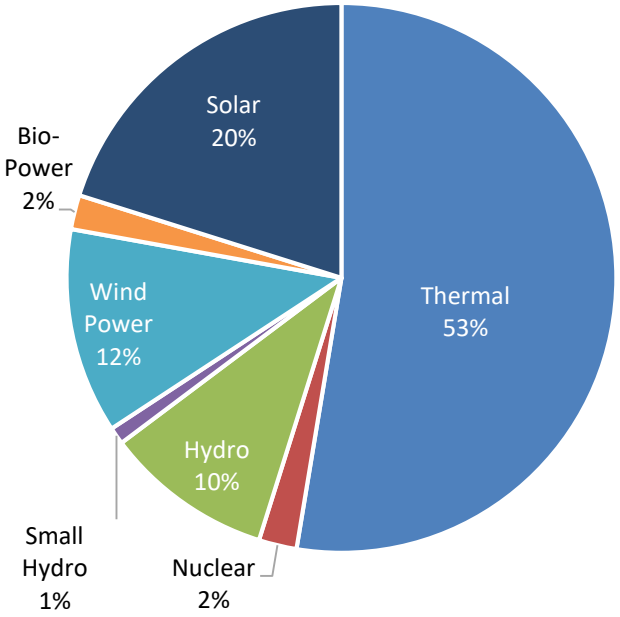
Sector transformation drivers

Paris Climate Agreement – Renewable energy to constitute 40% of total installed capacity base of 1250 GW

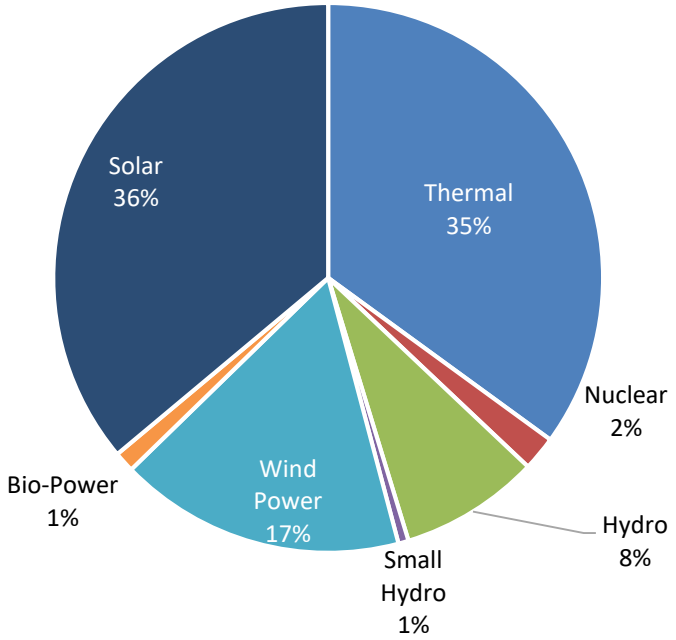
Hybridization requires technology driven apps and automation



2019



2022



2030

Changing Installed Capacity Mix – Increasing reliance on RE

Source: CEA

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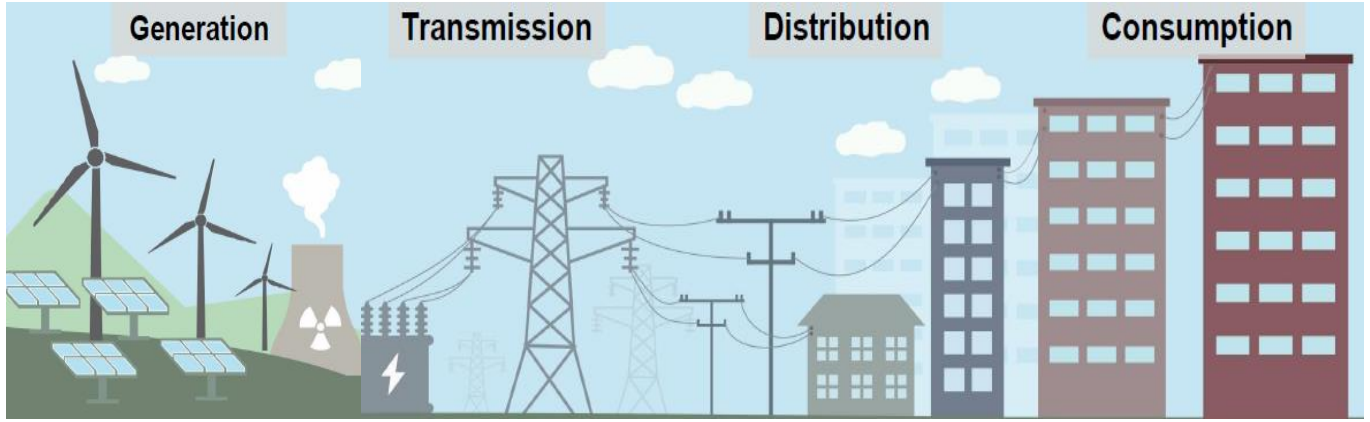
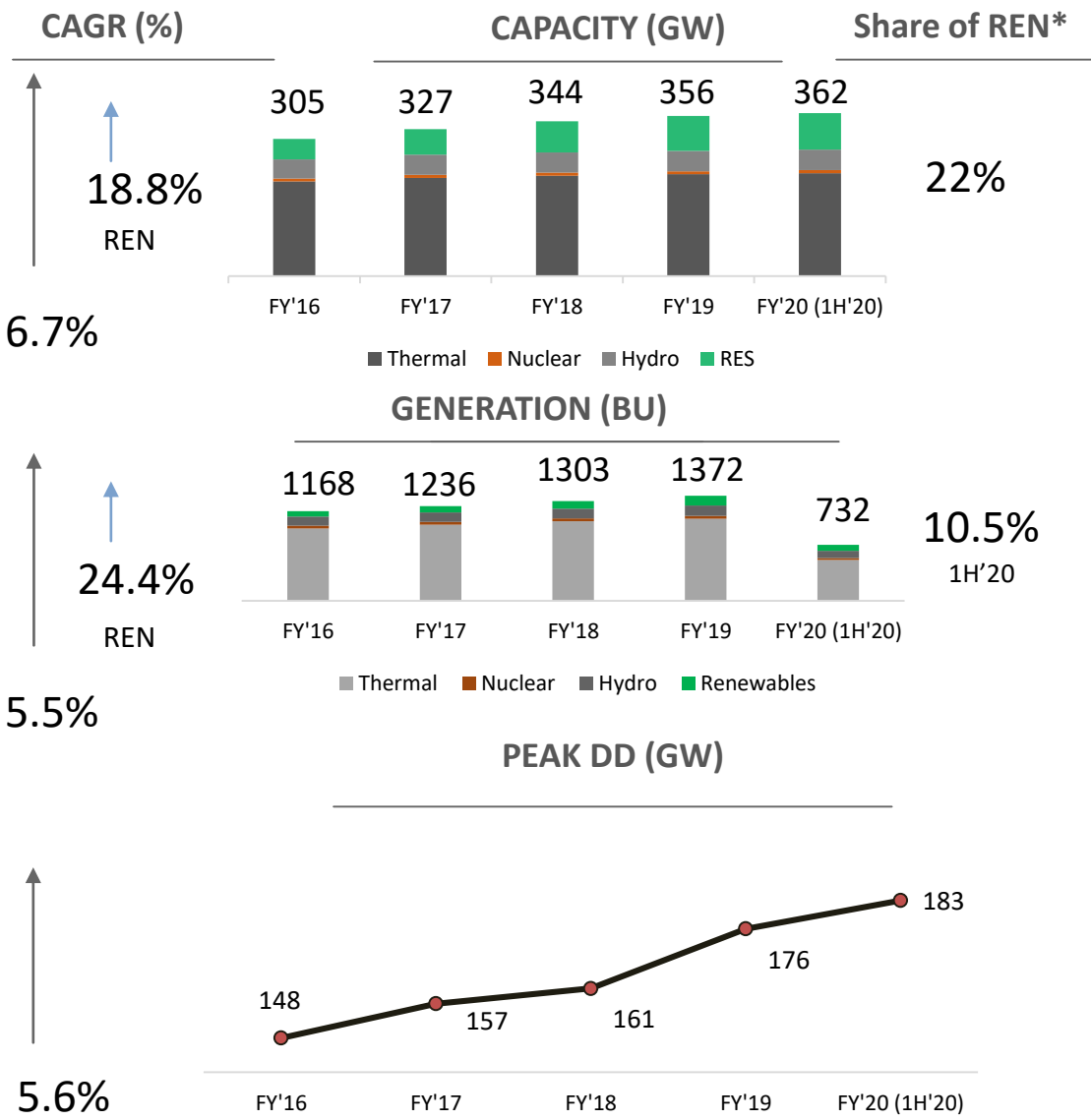
Electricity value chain



Generation	Transmission	Distribution	Consumption
Generation De-licensed	Transmission is licensed	Distribution licensed	Energy deficit decreased from 10% to 0.7% over the last decade
Private sector ~46%	World's largest network	Rs 81,468 Cr O/S*	
Generation in distress	Pvt sector ~8%	DISCOM losses ~Rs.28,000 Cr	
		AT&C Loss	



- As of Sept 2019; CAGR till FY'19, calculated as 4 yr CAGR except for Generation (3 year CAGR)
- Source: CEA; MOP 5 year vision; press

Electricity is a key driver to economic growth

- **India is:**
  - 3rd largest consumer of electricity
  - 3rd largest producer of electricity; and
  - 5th largest in the world in RE capacity[1]
- **Industries consume 42% of total electricity**
- **Agriculture and domestic consume 18% and 24% respectively[2]**

Contribution to GDP %[2]	FY'19 (%)
Agriculture, forestry & fishing	16.1
Mining & quarrying	2.4
Manufacturing	16.4
Construction	8.0
Services	57.1

Sectors	Power & fuel costs as a % Rev[3]
Utilities	44%
Communication Services	38%
Materials	17%
Industrials	14%
Consumer Discretionary	11%

1. MoP – 5 year vision document for power sector; 2. MOSPI; CEIC; 3. Company reports; CMIE; defined as per GICS classification

Electricity consumption set to increase

- **India a third of global average in per capita consumption**

- **Economic activity will accelerate**
  - Government envisions India as a $5tn economy by FY'25
  - Manufacturing contribution up from 15% to 25%
  - Core sector growth will drive electricity consumption

- **Rapid urbanization**
  - 17 of 20 world's fastest growing cities in India

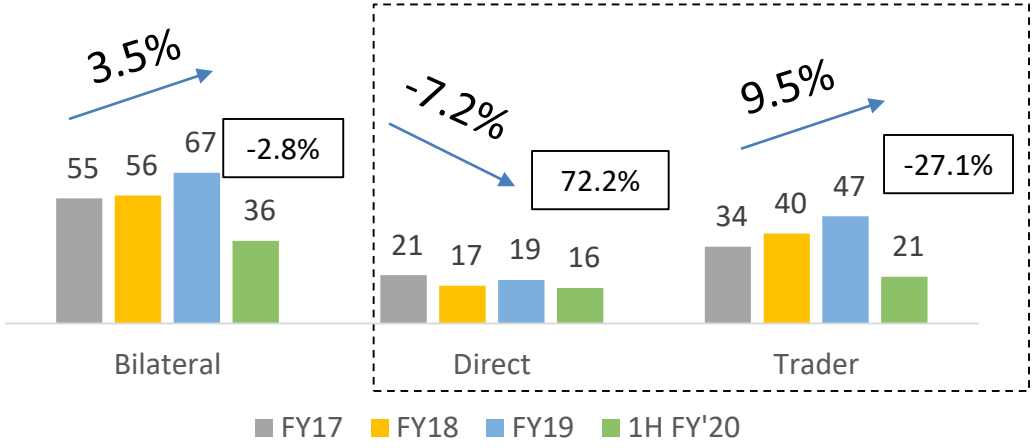
- **Consumer demand growth**
  - Last mile connectivity - Saubhagya : Power for All
  - Power on 24x7 basis

Power market structure

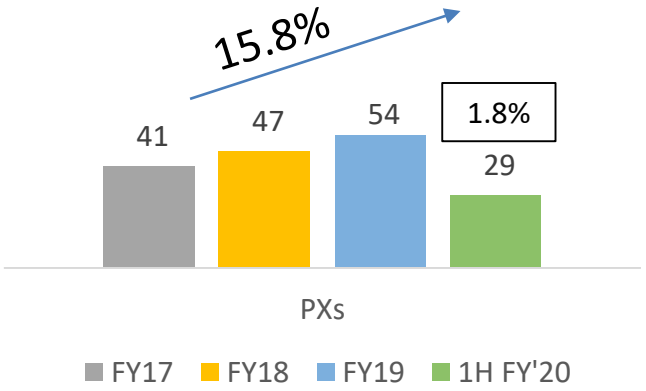
Long Term (89.4%)	Short Term (10.6%) (3Yr CAGR: 8%; 1H'20: -1.7%)		
1,372 BU (incl REN)*			
Up to 25 years	OTC: Intraday to 1 year	Exchanges: Intraday – 11 days	Real Time
1,226.5 BU	66.5 BU	53.5 BU	25.1 BU
89.4%	4.9%	3.9%	1.8%
Long-term PPA	Bilateral & Banking Transactions	Exchanges (Only up to 11 days) ➢ DAC ➢ Daily ➢ Weekly ➢ Day Ahead Market	Deviation settlement/ Unscheduled Interchange

- As of FY'19; CAGR calculated for 3 years ending FY'19
- Source: CEA, CERC

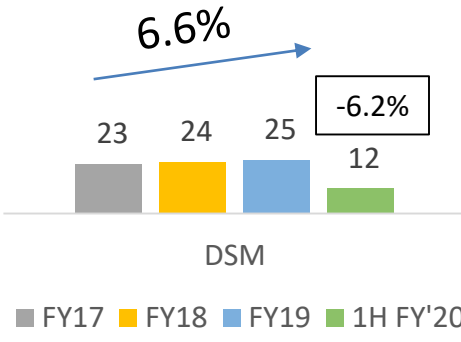
Bilateral (BU)



Exchange (BU)

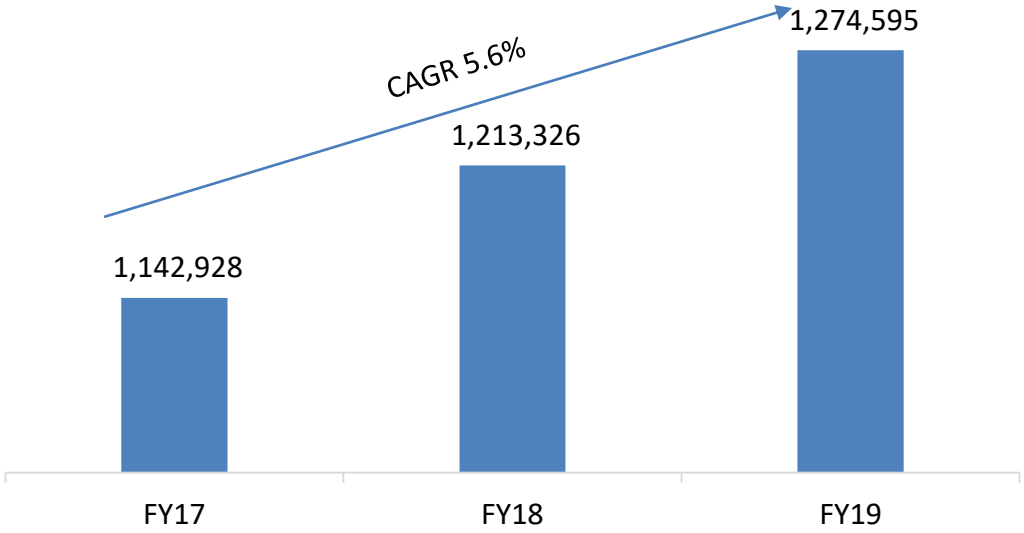


DSM (BU)

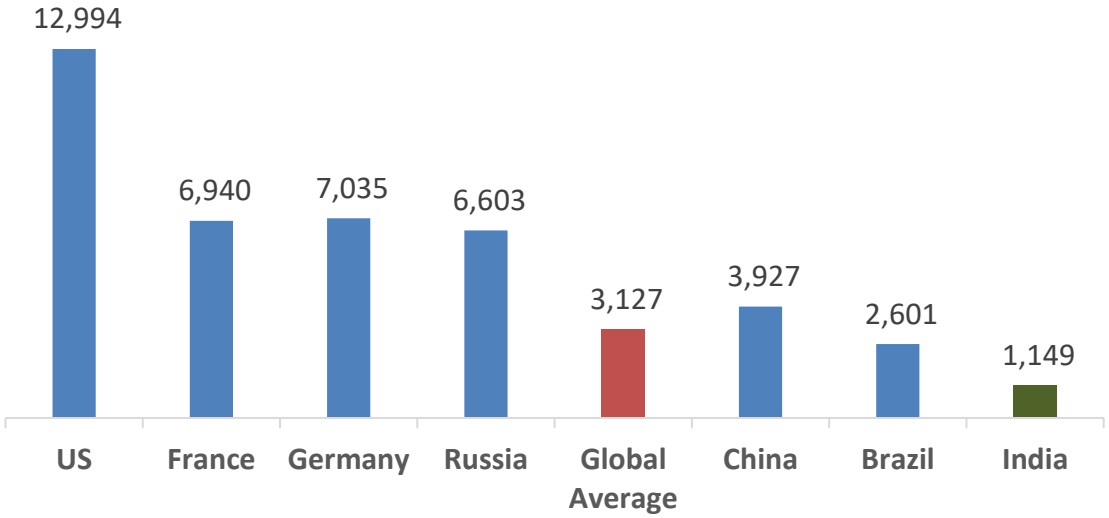


Markets have immense potential

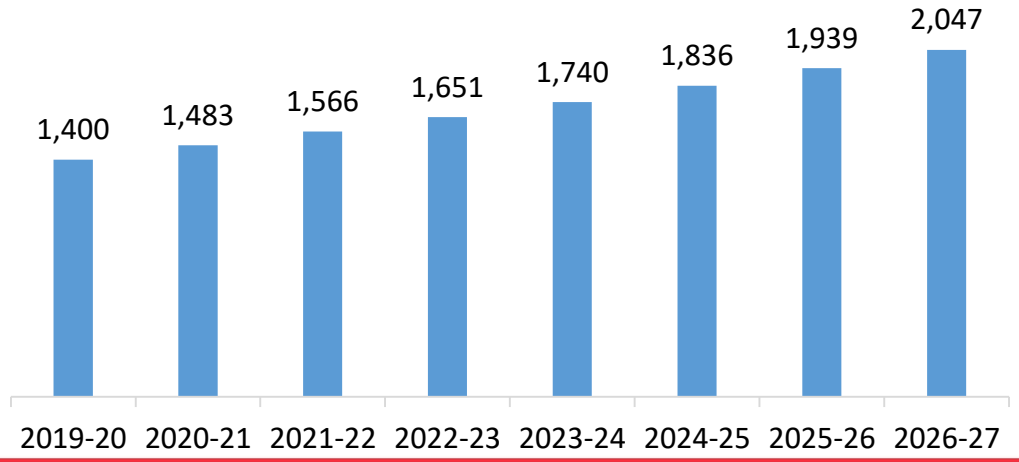
Total Electricity Demand (MU)



Per Capital Electricity Consumption (KWh)[2]



Expected Electrical Energy Requirement (BU)[3]

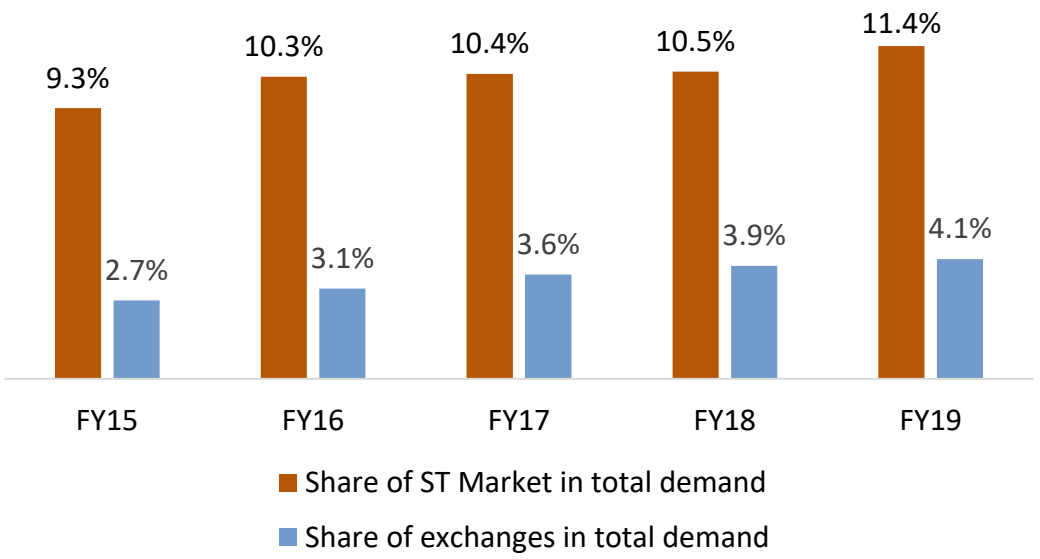


- India's per capita electricity demand is 1/3rd global average
- ~ 45 GW of PPA's retiring in the next 8 years
- ~4.3 GW of PPA's (LT and MT) expiring in the next 8 years

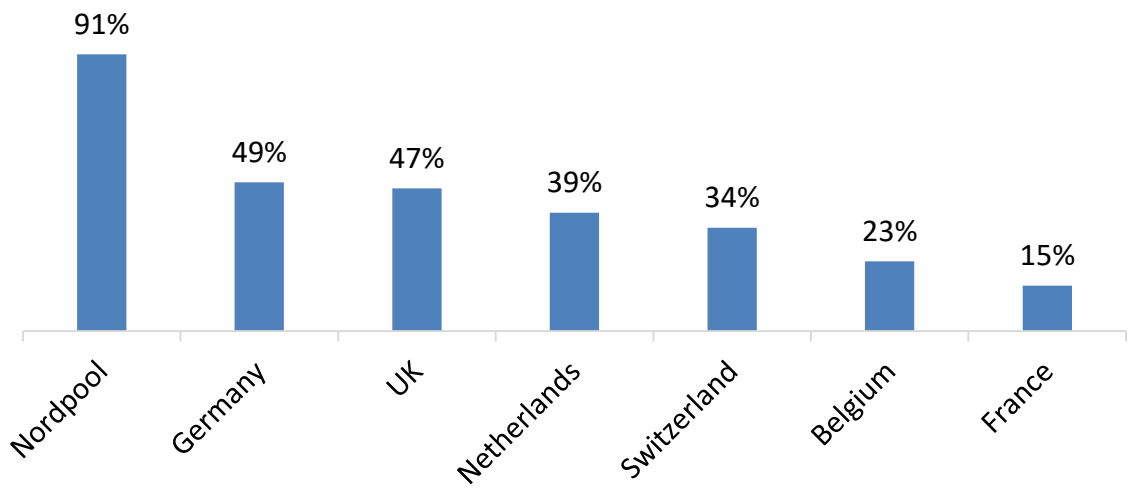
Source: 1. CERC; 2. World Bank; 3. CEA

Global benchmarking

Exchange market and ST market a % of total demand – India[1]



Exchange market as a % of total demand – Global[2]



Power markets in developed economies are in the range of 30-80% of total power demand vis a vis 4% in India

Source: 1. CERC; 2. CRISIL Study

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Way forward

Way forward

1. **Expand coverage and market**
   - Launch new products
   - Advocacy to increase short term market
2. **Best in class, futuristic Technology Infrastructure**
   - Enterprise IT, trading platform
   - Technology & analytics solutions for customers
3. **Strengthen the organisation**
   - Capacity building, hi-performance culture
   - Talent acquisition, development and retention
4. **Business diversification**
   - Play in the energy (eg. - gas) basket of India
   - Energy efficiency technology solutions

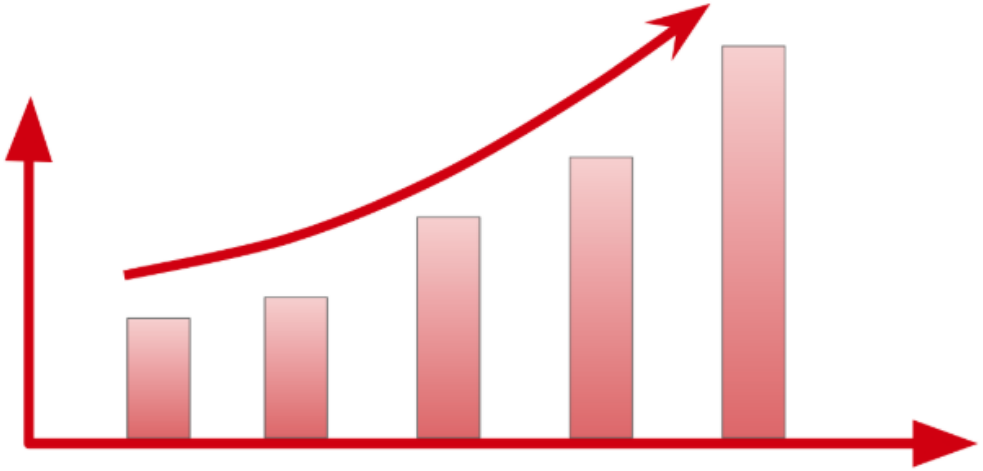
Expand coverage and market

New Product Launches

- Real time electricity market
- Cross Border Trade
- Longer Duration Contracts
- Green TAM
- Exchange based Ancillary Market
- Gross Bidding

Tech based

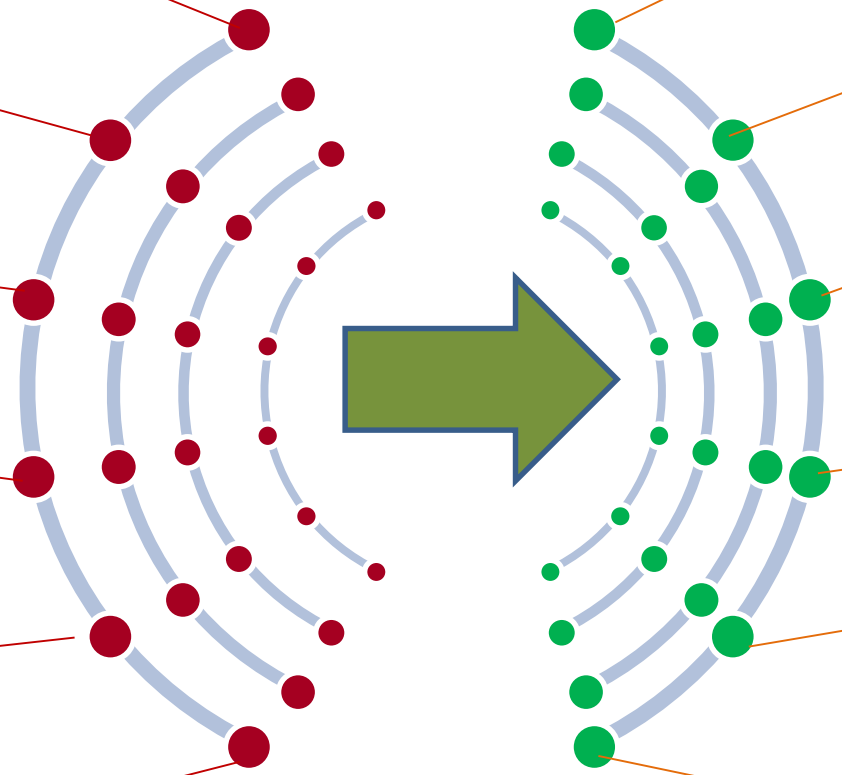
- Smart Power Procurement
- Analytics
- New Product Development



Open Access + DISCOM Maximization

Technology in transformation

- Manual Workflow
- Monolithic
- Desktop Based
- Disparate System
- Limited Products
- In-House Development



Automated Digital Mesh
- *Digital Inside*
- Open API integration
- *Robotic Process Automation*

Modular Digital Twins
- Service Oriented Architecture
- *Automated Bank Integration*

All Platforms
- *Web Based Portal*
- *Trading App*

Intuitive System
- *Customer Survey Driven UX design*
- *Unified Risk Management*
- Proactive Alerts

Configurable Products
- *Re-architecture*
- *Long Duration Contract, RTM*

Partnerships
- Product: GMEX, UTrade, Nagarro, Twilio
- System Design: Cap Gemini, TCIL, Akamai
- Automation Anywhere,UIPath, Pentaho

Smart Product/Bids

Customer Experience

S – Self-service web/mobile applications

- enable customers anytime anywhere easy access

I – Intelligent process automation

- reduce customer effort; insights to enable effective decision making

M – Matching engine optimization

- increase social welfare

P – Product launches

- meet the needs of all customer segments

L – Learning opportunities for our customers

- experiential learning for customers through organizing events

E – Energy portfolio management solutions

- optimize procurement cost for customers

Create effective solutions to fulfil all Power Procurement related needs of our customers

Gas Exchange

GoI vision of gas based economy

- GoI policy targets to increase share of natural gas in India's energy basket from 6.5% to 15% in 5 years.
- This would lead to Indian Gas market growing 2.5X (166 to 380 MMSCMD) by 2030.
- A robust gas trading exchange enabling seamless transactions can help GoI realize this ambitious target.

Market gaps and need

- Buyers desire price transparency, flexibility and anonymity to overcome suppliers' bargaining power.
- MoPNG has expressed the need for a Gas Trading Hub. Taken steps towards market development.

Our plan/solution

- To optimize trading value chain, plan to set up a Gas Exchange - Physical hubs near Dahej and Kakinada.
- Prompt and longer duration products with delivery facilitation by the exchange.
- State of the art and proven exchange technology backed with long experience in electricity

Enablers required for success

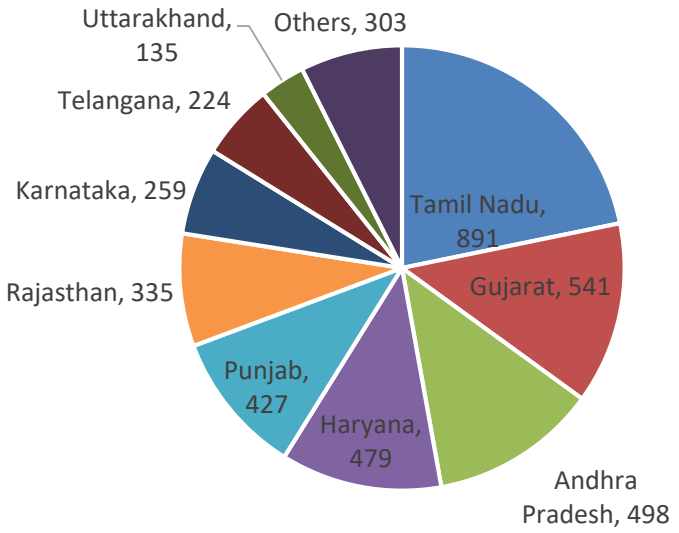
- The history of gas market hubs globally has shown that certain steps are needed to enable development
- Few technical issues need resolution to ensure liquidity and enable efficient trading at the hub

Thank You

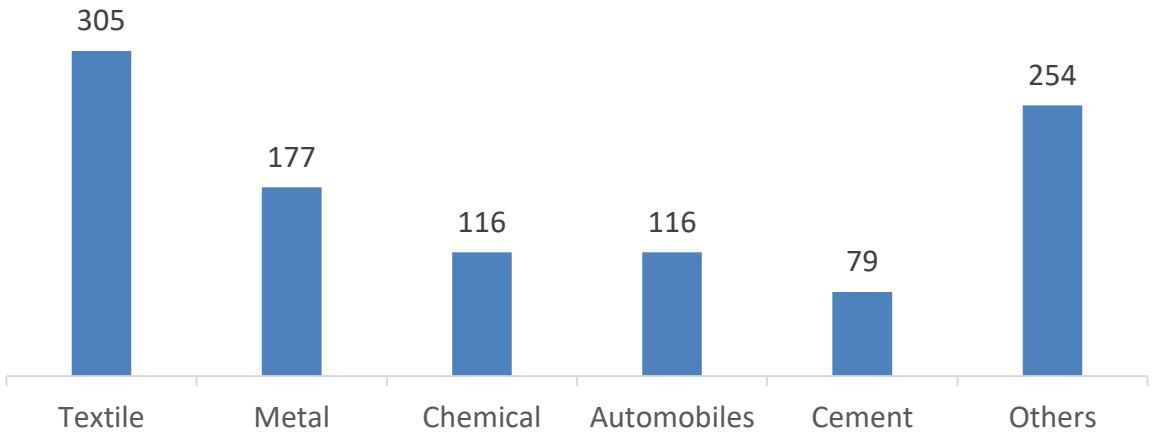
ANNEXURES

Industrial consumers on IEX

Registered open Access Consumers - By States (As on 30th September,19)



Open Access consumers spread across industries[1] (As on 30th September,19)



1. Active consumers

Cost optimization - Punjab DISCOM

Sell

Sold 1430 Mus during Sep/Oct' 18 @ Rs.5.74/u. Additional revenue of Rs.350 Cr.

Buy

Purchased 385 Mus from exchange at average rate of Rs.3.09 per unit resulting into savings of Rs.19 Cr.

Replace

Back down/reduced the power drawn from private thermal plants and replaced it with a very low cost power available at exchange during night in the month of Nov/Dec 2018.

- PSPCL case of optimization used to mobilize states currently not doing optimization through market

NAME OF PUBLICATION	PLACE OF PUBLICATION	DATE OF PUBLICATION
DNA	NEW DELHI	JANUARY 15, 2019

PSPCL announces results

Er Baldev Singh Sran, CMD PSPCL stated that power demand pattern of the Punjab is very peculiar, from June to September the demand shoots up to around 12500 MW whereas from October to May demand falls to 5500-6000 MW during daytime and during night hours it hovers around 3000-3500 MW. Power rates in Indian Power exchange are higher in summer and lesser in winters. The only option to deal with such huge variations in demand is to encourage power consumption in the state and find ways and means to sell the surplus power to other states during winter. In this regard Er.B.S.Sran lauded the initiative of the Punjab Government to introduce industry friendly policies including offering a retail tariff of Rs. 5 per unit to industry and Rs. 1.25 per unit rebate on consumption from 10 pm to 06 am (next day) during October 1 to March 31. Such measures have yielded good result and 10 % increase in Industrial consumption has been recorded during 2018-19 so far. The CMD said that during September /October power rates in exchange remain high at Rs. 5-8 per unit due to demand outside Punjab and PSPCL saved Rs. 2.42 to Rs. 2.49 per unit by selling 1430 MUs during September/ October 2018 at an average rate of Rs. 5.74 resulting into saving totalling Rs. 350 crore in these two months. During winter, due to surplus power throughout the country, the power rates in Power Exchange come down drastically and morning/ evening peak time rate is Rs. 4-5 per unit and Rs. 2-3 per unit during night time. As per the Power Purchase Agreements (PPAs) signed with IPPs (Private Thermals), NTPC and other Generators, PSPCL is bound to pay fixed charges ranging from Rs 1.00 to Rs. 2.00 per unit during winter/night due to low demand scenario even when no power is drawn from them but energy charges ranging from Rs. 3.10 to Rs. 3.85 per unit are paid for energy actually drawn. PSPCL came up with an idea to reduce variable cost of power by stopping/reducing the power drawn from private thermals to the extent possible and substituting it with a very low cost power available in the exchange particularly during night at Rs. 2.50 to Rs.2.85 per unit to bring down the basket price of its power purchase. Power from state thermals costing at Rs.3.85 per unit was also replaced with power from exchange at Rs. 3.30 to Rs. 3.70 per unit. During November/December 2018, PSPCL purchased 358 MUs from exchange costing Rs. 111 crore at average rate of Rs. 3.09 per unit resulting into saving of Rs. 19 crore. At the same time 165 MU power worth Rs. 70 crore was sold at average cost of Rs. 4.25 per unit during morning/ evening peak hours. Selling power during peak period and purchasing during lean demand period in a highly surplus scenario was unthinkable till recent past but shrewdness in managing resources and scrapping out available margins helped PSPCL achieve this feat and will translate into lower tariff during coming years by the same amount.

The CMD also highlighted the fact that to avoid purchasing high cost energy during summer/paddy season, surplus power during winter is banked to get it back during paddy season. During this winter season, banking of 1500 MW has already been done till December, 2018 and similar arrangements will be carried till May, 2019 with approximate banked energy around 6000 MUs to MP, J&K, Andhra Pradesh, Chhattisgarh and Himachal Pradesh. This banked power will be returned by these states to Punjab during the next paddy and summer season and approximately 2000 MW would be available next year from June to September from banking. Punjab Government has introduced a special tariff for use of electricity exclusively during night i.e. from 10 pm to 06.00 am (next day) for FY 2018-19 the energy charges are Rs. 4.28/kVAh and fixed charges are 50% of the normal rates of Fixed Charges applicable to the respective category. PSPCL has recommended that eight hours be extended to 12 hours as per the demand of the industry.

DEEP v/s IEX

- ✓ Telangana discoms Tender for 1000 MW RTC power for period 1st Jul, 2019 to 31st Mar, 2020.
- ✓ The prices discovered at DEEP- portal are ranging from Rs. 5.48 - Rs. 5.80 per unit, much higher in comparison to IEX prices.

Period	Energy as per Tender (MUs)	L1 Price discovered in DEEP Portal	Power Purchase cost (Rs.Cr)	IEX Avg Price FY 2018-19 (Delivered)	10% increase in IEX Prices (Delivered)	Cost if purchased at IEX (Rs Cr) (without escalation)	Cost if purchased at IEX (Rs Cr) (with escalation)	Savings – IEX price as last year (Rs.Cr)	Savings - IEX last year price with 10% escalation (Rs.Cr)
Jul-19	744	5.48	408	3.72	4.09	277	304	131	103
Aug-19	744	5.48	408	3.62	3.98	269	296	138	111
Sep-19	720	5.48	395	4.97	5.47	358	394	37	1
Oct-19	744	5.48	408	7.06	7.77	525	578	-118	-170
Nov-19	720	5.48	395	3.90	4.29	281	309	114	86
Dec-19	744	5.48	408	3.60	3.96	268	295	140	113
Jan-20	744	5.48	408	3.61	3.97	269	295	139	112
Feb-20	696	5.48	381	3.49	3.84	243	267	139	114
Mar-20	744	5.48	408	3.77	4.15	280	309	127	99
Total	6600	5.48	3617	4.19	4.61	2770	3047	**847**	**570**

*Above price comparison is at Telangana state periphery