JULY'16 ISSUE 7 | VOLUME 3

IEX Bulletin

NEWS AND INFORMATION

IEX INDIAN ENERGY EXCHANGE India's No.1 Power Exchange

8 YEARS OF EMPOWERING INDIAN POWER MARKET

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Message from the MD & CEO Desk

Dear Readers,

On 27 June, 2016, IEX completed eight successful years of operations, marking entry into the ninth year.

In fiscal 2016, the short-term market traded about 115 BUs, constituting about 10.5% of total generation of 1,103 BUs. The trade on power exchanges constituted about 3.1% of total generation, up from 2.7% in the fiscal 2015. For IEX, fiscal 2016 was an exciting year as we were the fastest growing segment of the short term market. We traded 34,286 MUs in the Electricity (Day-Ahead and Term-Ahead) market and 3,139 MUs in the REC Market, marking a growth of about 21% in the Electricity Market and 103% in the REC Market over fiscal 2015. However, increase of cross subsidy surcharge across a few States: Daman and Diu, Himachal Pradesh, Gujarat, Odisha, Bihar, Chhattisgarh, West Bengal, Meghalaya, Karnataka, Telangana and Uttarakhand as well as introduction of additional surcharge may impact volumes in the near future.

Even though volume increased, the Market Clearing Price (MCP) was ₹ 2.73 per unit, about 22% lower than ₹ 3.51 per unit in the previous fiscal. Competitive prices indeed boosted liquidity on the Exchange. The registered participant base reached 3,872, up by 11% over previous fiscal. Of the total participants, 3,421 were open access consumers.

The aim of the government to provide 24x7 electricity paved way for better fuel availability to power plants, increased addition in generation capacity and strengthening of transmission and distribution infrastructure. According to CEA, the availability of domestic coal increased by about 9% to 539 MT (Million Tonnes) as compared to 494 MT produced last fiscal. Generation capacity addition of 31 GW took place and consequently the installed capacity reached 298 GW as on March, 2016. The fast paced increase in generation capacity also improved the power supply position. The energy deficit reduced to 2.1% from 3.6% and peak deficit reduced to 3.2% from 4.7% in fiscal 2015. The demand for power however, showed subdued growth of 6%, from 1,045 BUs in fiscal 2015 to 1,103 BUs this fiscal.

On the transmission front, reinforcement and augmentation of the network was carried out with great vigor with commissioning of transmission lines such as the Gwalior – Jaipur line (Double Circuit), the Jaipur-Bhiwani line (single circuit), the Narendra – Kohlapur Line and the Kurnool – Raichur line. As a result, the volume lost by the Exchange due to congestion reduced by about 31% to 2,144 MUs compared to 3,086 MUs lost in fiscal 2015. The enhanced availability of corridor also led to about 28% reduction in prices in South in fiscal 2016. For Andhra

Pradesh, Telangana and Karnataka, ACP was ₹ 3.79 per unit and for Tamil Nadu and Kerala ACP was ₹ 4.28 per unit.

The One Nation, One Grid, One Price aspiration of the government became a reality since our Day-Ahead Market (DAM) saw single price on six different occasions. In July 2015, we extended trade in Intra-day contracts on round the clock basis, based on CERC directions. This development has indeed facilitated distribution companies to balance their demand-supply requirements close to real time basis and has helped in maintaining the grid discipline too. Besides, we interacted with distribution companies across States and facilitated them to optimise their power procurement cost by replacing their high variable cost power with low cost power on the Exchange.

In an endeavor to provide greater transparency and to aid the stakeholders get access to short-term buy-sell by States, the Government launched Vidyut Pravah initiative – a web/mobile based platform that gives demand-supply situation, volume and price of electricity traded for each 15 minute time block. The data displayed on Vidyut Pravah platform is based on volume and price discovered at IEX reflecting the trust and confidence of the stakeholders in the exchange platform.

The Council of Power Utilities recognized the commendable work done by IEX for immense contribution to power market and conferred it with the "Leader in Market Development" Award for 2015-16.

IEX has been working closely with stakeholders advocating on the various policy and regulatory enablers to foster power market development. To keep yourself updated about the market developments on a consistent and regular basis, you may follow us through our website (www.iexindia.com), mobile application (IEXApp), Twitter (@IEXLtd) and on Facebook (IndianEnergyExchangeLtdIEX).

S.N. Goel
Managing Director and CEO

REGULATORY NEWS

Rajasthan High Court remands back RERC additional surcharge

The Rajasthan High Court on 1st June, 2016, set aside the RERC order dated 12th May, 2016 wherein RERC imposed additional surcharge of ₹ 1 per kWh and remanded the matter to RERC with the following directions.

RERC to issue a public advertisement notifying the objectors on the Discoms' application for levy of additional surcharge and the data/information furnished by Discoms to be available at RERC's office for collection by interested parties within 3 days from the publication of the advertisement.

The advertisement has to be published in two vernacular newspapers and an English language newspaper, notifying the date of hearing within one week of the last date for collection of data.

RERC will then hear the objectors and pass orders within ten days and the objectors will not be entitled to any adjournment.

Additional surcharge would be payable from the due date as mentioned in the order dated 12th May, 2016.

More information: www.rerc.rajasthan.gov.in

RERC issues order regarding setting up Intra-state power market in Rajasthan

RERC on 24th May, 2016, issued an order regarding setting up Intra-state power market in Rajasthan. They dismissed the petition with the following observations:

- There are two power exchanges at national level under the supervision of CERC handling intra-state trade and inter-state transactions. Thus, a separate power exchange at Intra-state level is not required.
- Development of power market does not necessarily mean setting up of a power exchange.
- There are no regulations to develop a power exchange.
- No impediments in the development of market were observed by the Commission in the State of Rajasthan.

More information: www.rerc.rajasthan.gov.in

UPERC directs UPPCL on power procurement through Exchanges

The UPERC on 9th June, 2016, issued an order in matter of Suo-Moto Proceedings on purchase of power from Power Exchange by UPPCL. Key highlights are as below:

- UPERC has expressed keenness to introduce a philosophy of scheduling on everyday basis in which before giving the schedule the opportunity of cheaper power from exchange is explored and effort is made to reduce the power purchase cost.
- UPPCL has to submit a power purchase plan showing how it will take the advantage of cheaper power either through the Energy Exchanges or other sources.
- The Commission will be monitoring the steps taken by UPPCL in future on monthly basis.

More information: www.uperc.org

UERC rejects UPCL's petition regarding carry forward of RPO

The UERC rejected a petition filed by Uttarakhand Power Corporation Limited (UPCL), seeking carry forward of Renewable Purchase Obligation (RPO). The key highlights are as below:

- For 2014-15, for UPCL, RPO amounts to 526.8 MUs for non-solar and 2.5 MUs for solar.
- For 2015-16 RPO amounts to 699.6 MUs for non-solar and 8.1 MUs for solar.
- UPCL cannot be allowed to continue carrying forward all the unmet non-solar RPOs, since it has failed to tap the available power due to its own distribution system for power evacuation.
- Accordingly, non-solar Renewable Energy Certificates (RECs) equivalent to 7.5 per cent of the unmet non-solar RPOs up to 2015-16 have to be procured by July 31, 2016.
- UPCL has to fulfil the balance unmet non-solar and solar RPO up to 2015-16 along with its obligation for 2016-17.
- UPCL has to meet the overall RPO either through the purchase of energy from renewable energy sources or through the purchase of RECs equivalent by March 2017.
- Any non-compliance with the RPO will result in action against the officers responsible for compliances of regulations.

More information: www.uerc.gov.in

Millenium Cement files petition before CERC against NOC denial

Millenium Cement Co. Pvt. Ltd. has filed a petition before the CERC against denial of NOC by WBSLDC for collective transactions on IEX. Brief of the Records of Proceedings is as under:

- The present petition has been filed to set aside SLDC and West Bengal`s letter claiming that no objection could not be granted due to constraint in the inter-State network.
- On 2nd November, 2015, the petitioner made an application to SLDC of West Bengal for grant of prior standing clearance for collective transactions through inter-state open access from 1st December, 2015 to 29th February, 2016.
- In response, SLDC of West Bengal informed the petitioner that open access cannot be granted due to limitation in transmission capability for inter-State import by STU (WBSETCL). Whereas, the Petitioner argued that there was no constraint and short term open access had been wrongly denied in violation of the provisions of the Open Access Regulations.
- The Commission admitted the petition and has directed the SLDC to issue notice to the respondents.
- The hearing for the same is scheduled on 7th July, 2016.

More information: www.cercind.gov.in

MARKET INSIGHTS

Additional Surcharge: Applicability & Methodology

THE ELECTRICITY ACT' 2003 allows Discoms to recover Additional Surcharge (AS) from Open Access consumers, as compensation for the fixed cost for generation capacity been stranded due to open access. The relevant section of the Act is reproduced below:

"42(4)

*where the state commission permits a consumer or class of consumers to receive supply of electricity from a person other than distribution licensee of his area of supply, such consumer shall be liable to pay an **additional surcharge** on the charges of wheeling, as may be specified by the State Commission, to meet the fixed cost of such distribution licensee arising out of his obligation to supply."*

THE NATIONAL ELECTRICITY POLICY (NEP) allows Discoms to recover Cross Subsidy Surcharge (CSS) and Additional Surcharge (AS) from consumers who are opting for open access. The policy states that the amount of CSS and AS needs to be calculated in a manner that it should **not eliminate competition** (open access). Both these surcharges are compensatory in nature.

"5.8.3

….. An additional surcharge may also be levied under sub-section (4) of Section 42 for meeting the fixed cost of the distribution licensee arising out of his obligation to supply in cases where consumers are allowed open access. The amount of surcharge and additional surcharge levied from consumers who are permitted open access should not become so onerous that it eliminates competition that is intended to be fostered in generation and supply of power directly to consumers through the provision of Open Access under Section 42(2) of the Act…."

THE NATIONAL TARIFF POLICY (NTP) has formulated the methodology to calculate CSS and SERCs are guided by NTP to determine CSS for OA consumers. However, in case of AS, there is no methodology/formulae defined in the NTP. It is left to the discoms to demonstrate. The NTP has only stipulated the principles to be kept in mind while deciding AS. The relevant para of NTP is extracted below:

"8.5.4

The additional surcharge for obligation to supply as per section 42(4) of the Act should become applicable only if it is conclusively demonstrated that the obligation of a licensee, in terms of existing power purchase commitments, has been and continues to be stranded, or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract. The fixed costs related to network assets would be recovered through wheeling charges."

The important conclusions from the NTP are i) discoms may be required to justify that generation under long term is being backed down due to sole reason of open access; ii) to prove that they continue to be stranded and iii) the fixed charges for such stranded assets are unavoidable, after exploring all options.

Therefore, following important factors are to be critically analyzed while determining the AS:

1. **What is the actual reason for backing down/surrendering the generation capacity?**

   Generation capacity can get stranded due to many reasons:

   – Generator back down/ surrender for economic reasons.
     - *Costlier power under PPA replaced with cheaper power in market to ensure most optimal merit order dispatch.*

   – Power over-purchased due to error in demand forecast.

   – Return of banked power.

– Backing down only during off peak as a measure to manage loads/variations in a day.
    - *If backing down is during Off Peak duration, only then it is not because of open access. In fact, during peak hours open access will support discoms else it will add to discom load in peak duration.*

– Infirm renewable generation.

– Power purchase under open access by consumers.

> *Additional surcharge can be determined and made applicable only when the distribution licensees have surplus capacity tied up on long term basis, which is left stranded and continues to be stranded with unavoidable obligation to pay fixed charges due to open access consumers.*

The quantum of generation backdown due to open access consumers will only qualify for the purpose of AS calculation.

2. What is the continuous period for which backed down/surrendered capacity can be termed as stranded capacity?

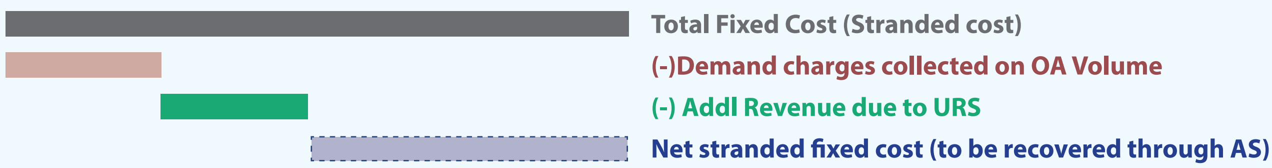
The principle set out by the NTP is clear that the capacity should be stranded on a continuous basis. The question herein arises as to what should be the continuous period for which backed down/surrendered capacity can be termed as stranded capacity. It is definite that stranding of capacity for part of the day does not entitle it to call for AS. But whether stranding of assets for a week or a month can entitle it for AS, is a question.

3. Generators are also required to prove that they exhausted all options to sell power

Open Access Consumers pay various charges like demand charges (fixed charges), transmission & wheeling charges besides Surcharges. Since all fixed cost against network cost is being levied through transmission and wheeling charges, therefore, logically demand charges are compensation against fixed cost of generation. Therefore, AS must exclude Demand charges paid by OA consumers.

As per new NTP, Central Generating Stations have been allowed to sell their surrendered power on exchange and can earn additional revenue and share it with the respective discoms. In such case, discom should reduce their fixed cost obligation to the extent of the URS sold in the market from such plant.

Net Stranded Cost Calculation



4. Should we use past data for AS calculations or projected data?

AS should reflect the actual stranded cost and hence it should be calculated on the basis of actual data and not projected data. If it is done on projected data then it should be reviewed and corrected (if charged more in actual) periodically. To avoid complexity, past data should be used to determine AS for subsequent period.

Conclusion

There is need for determination of AS in a more transparent manner backed with actual data. It is clear that AS can be imposed only if there is an actual burden of stranded generation cost on the discom. Principles engraved in NTP should be our basis for AS calculation. More structured methodology should be evolved at Forum of Regulators (FoR) level.

MARKET NEWS

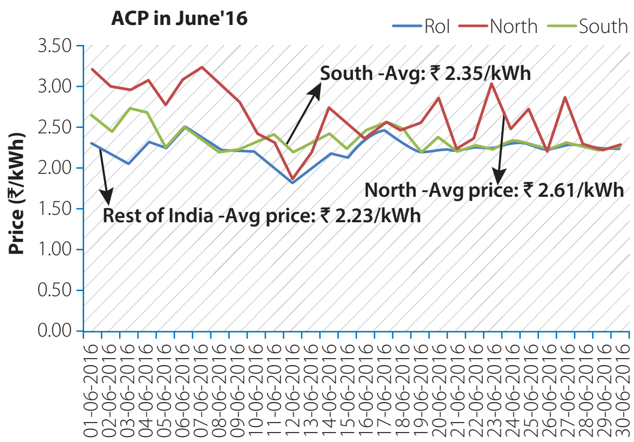
Power Market Update: June'16

The Day Ahead market at IEX traded about 105 MUs on a daily average basis in June'16, 11% increase over 94 MUs traded on a daily average basis last month. A total of 3,147 MUs were traded this month, an increase of about 7% over 2,929 MUs traded in May'16 with average daily purchase bids of 5,118 MW and average daily sell bids of 8,200 MW. Last month, average daily purchase bids of 4,603 MW and sell bids of 7,710 MW were received.

Although the volume traded this month increased by 7%, the price continued to be ₹ 2.31 per unit, at par with MCP of ₹ 2.32 per unit in May'16. With easing of transmission congestion, the average Area Clearing Price (ACP) - the price at which settlement takes place varied from ₹ 2.23 per unit to ₹ 2.61 per unit across regions during the month. Both Northern and Southern States saw reduction in ACP over May.

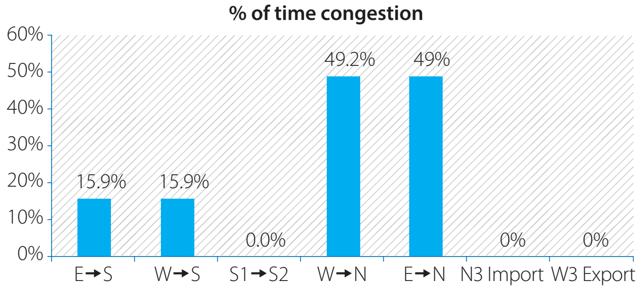
- **ACP in North:** ₹ 2.61 per unit, 4% decrease over May.
- **ACP in South:** ₹ 2.35 per unit, 15% decrease over May.
- **ACP in North-East, East and West:** ₹ 2.23 per unit, 8% increase over May.

The graphical depiction of average ACP in June is as below:



Congestion

About 3 MUs were lost per day due to congestion. The ER->SR and WR->SR interconnections were congested about 16% of the time, 70% less than last month, mainly due to higher wind and conventional generation in the Southern Region. The ER->NR and WR->NR interconnections continued to remain severely congested for 49% of the time during the month.



Participation

1,028 participants traded in the spot market on an average daily basis. The highest participation was on 2 June, 2016 when 1,136 participants traded on the Exchange.

Term-Ahead Market:

About 31 MUs were scheduled in June'16 in Intraday and Day Ahead Contingency contracts.

Volumes

The key highlights for June'16 are as below:

- **Total Sell bids:** 5,904 MUs
- **Total buy bids:** 3,685 MUs
- **Total Cleared Volume:** 3,147 MUs
- **Northern, Western & Southern States:** Net Buyers
- **Eastern & North-Eastern States:** Net Sellers

The table below gives the average daily buy-sell picture at regional level for June'16 vis-à-vis May'16:

REGION	AVERAGE DAILY BUY (MW)			AVERAGE DAILY SELL (MW)			NET
	June'16	May'16	Change (%)	June'16	May'16	Change (%)	
North East	79.24	62.29	▲ 27%	305.85	254.50	▲ 20%	SELL
East	292.67	479.66	▼ -39%	651.38	682.14	▼ -5%	SELL
North	1680.57	1466.46	▲ 15%	1376.19	1418.45	▼ -3%	BUY
West	1453.48	1089.65	▲ 33%	1379.17	1181.75	▲ 17%	BUY
South	864.83	838.39	▲ 3%	658.20	399.61	▲ 65%	BUY

REC MARKET UPDATE: JUNE'16

A total of 3.86 lacs RECs were traded in the REC trading session held on 29th June, 2016 at IEX.

The market saw 264% increase in trade over 1.06 lacs RECs traded in May'16. In the same month last year, 1.51 lacs RECs were traded, about 39% of RECs traded in June'16.

The change in market dynamics over the previous month was mainly on account of purchase by Captive Power Producers towards meeting their RPO compliance for FY 2015-16.

The key details of this trading session are as below:

- **Non-solar segment:** Total buy bids were 3,50,362 and total sell bids were 87,45,523.

  All buy bids were cleared at floor price of ₹ 1,500 per REC.
- **Solar segment:** Total buy bids were 35,649 and total sell bids were 28,69,142.

  All buy bids were cleared at floor price of ₹ 3,500 per REC.

In the first quarter of fiscal 2016-17, IEX has traded 7.53 lacs RECs, an increase of over 54% over 4.88 lacs RECs traded in the first quarter of fiscal 2015-16.

Participants

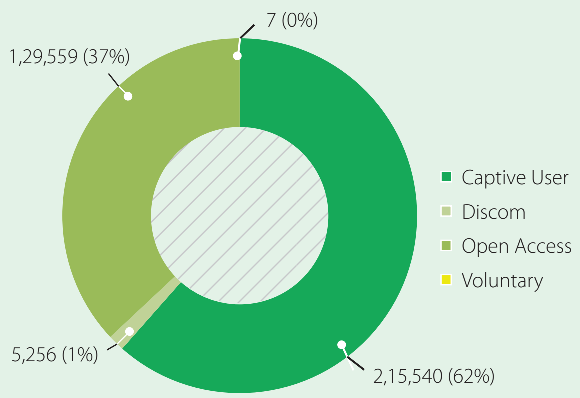
A total of 1,466 participants traded at IEX with 941 participants in non-solar segment and 525 participants in the solar segment.

On an overall basis, a total of 3,192 participants are registered in the REC segment at IEX. Of this, 831 are Eligible Entities (RE Generators) 2,344 are Obligated Entities (DISCOMs, Open Access Consumers & Captive Generators) and 17 are registered as Voluntary Entities.

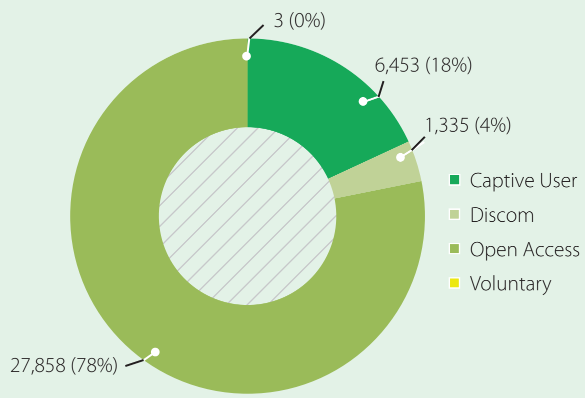
An overview of participation in the REC Market at IEX as on 30th June, 2016:

Total number of registered participants	3,200
Obligated Entity	2,353
DISCOMs	32
Open Access Consumers	2,158
Captive Consumer	113
Voluntary	17
Eligible Entity (Private Generators)	830
Highest participation in a session (March'16)	2,105

Non Solar Buyer Mix



Solar Buyer Mix



TRADE INFO: JUNE'16

MONTHLY PRICE SNAPSHOT

Minimum MCP	Maximum MCP	Average MCP
₹ 0.80/kWh	₹ 3.45/kWh	₹ 2.31/kWh

AREA PRICES

Prices (₹/kWh)						
Area	**Min**	**Max**	**RTC* (0-24 hr)**	**Peak* (18-23 hr)**	**Non Peak* (1-17 & 24 hr)**	**Night* (1-6 & 24 hr)**
East, North East & West	0.70	3.41	2.23	2.45	2.15	2.09
North	0.80	6.00	2.61	2.78	2.55	2.55
South	0.80	4.50	2.35	2.74	2.23	2.10

* Simple Average of Area Clearing Prices for specified duration of time.

MONTHLY VOLUME SNAPSHOT

1 MU = 1 Million kWh = 1 GWh

VOLUME	Unconstrained Volume	Cleared Volume	Purchase Bids	Sell Bids	Average Daily Volume	Cumulative Cleared Volume (MU)
Total Volume (MUs)	3,247	3,147	3,685	5,904	105 MUs	9,541 For FY'17
Average Daily (MW)	4,510	4,371	5,118	8,200		

TERM AHEAD MARKET SNAPSHOT (June'16)

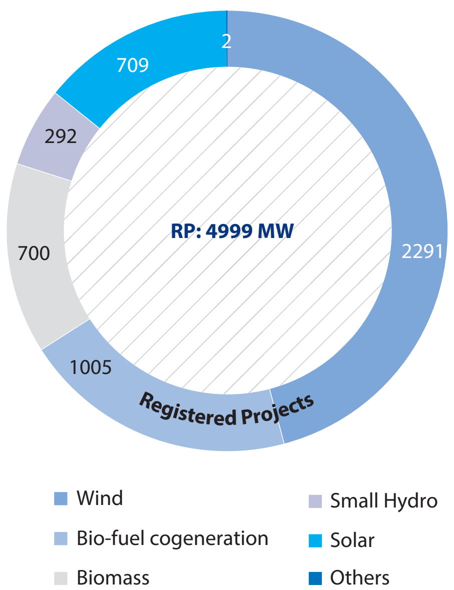
Contracts	Total Volume (MWh)	Max Price (₹/kWh)	Min Price (₹/kWh)
Weekly	-	-	-
Intraday	14,323	3.70	2.40
Day-Ahead Contingency	16,764	3.50	2.65
Daily	-	-	-

REC MARKET SNAPSHOT

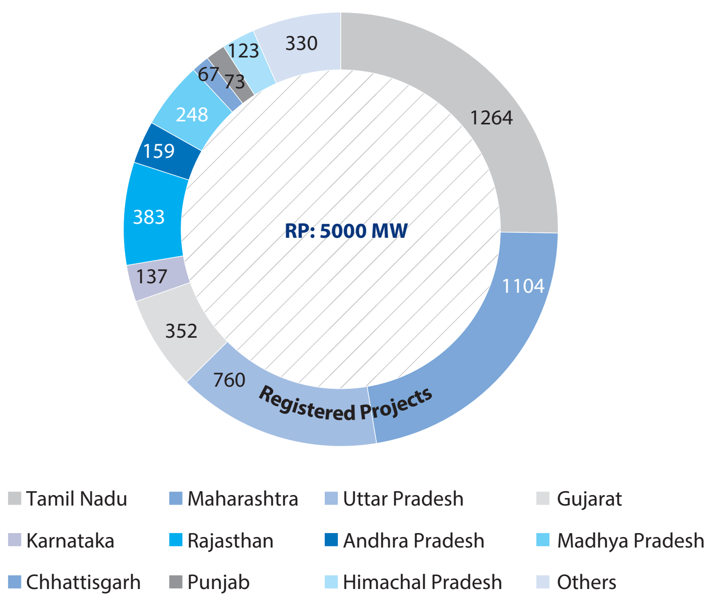
Trade Session on 29th June, 2016

REC	Purchase Bids	Sell Bids	Cleared (REC)	Price (₹/REC)	Participants
Non Solar	3,50,362	87,45,523	3,50,362	1,500	941
Solar	35,649	28,69,142	35,649	3,500	525

Source wise RE capacity (MW)



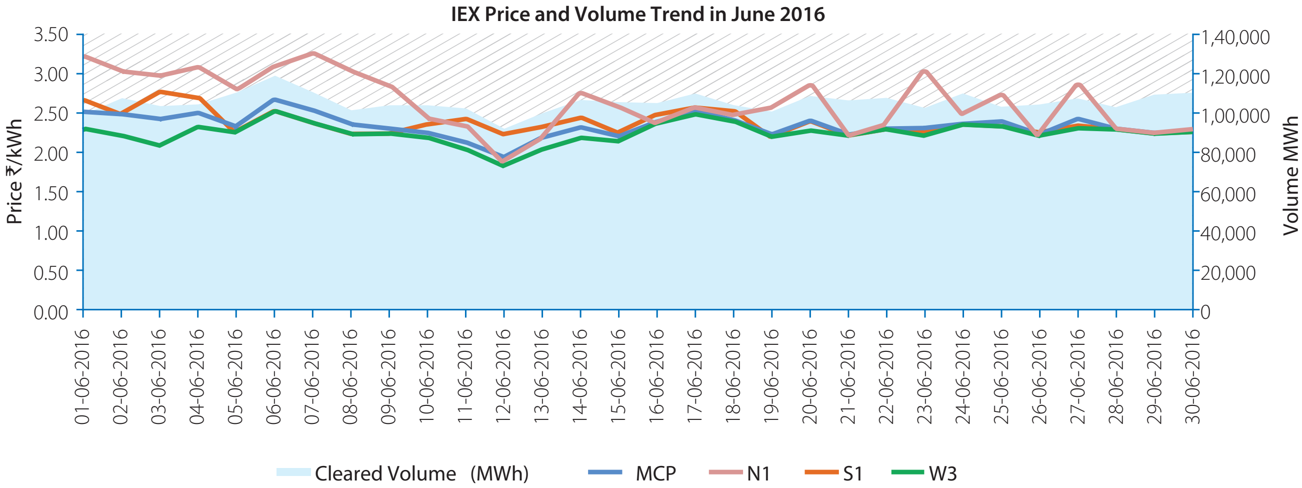
State-wise RE Capacity (MW)

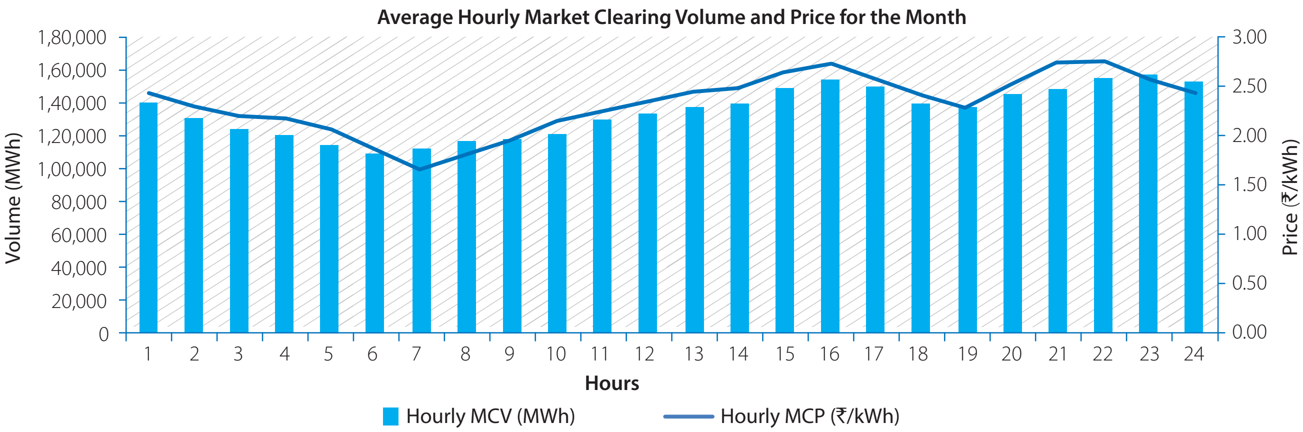


RP: Registered Projects

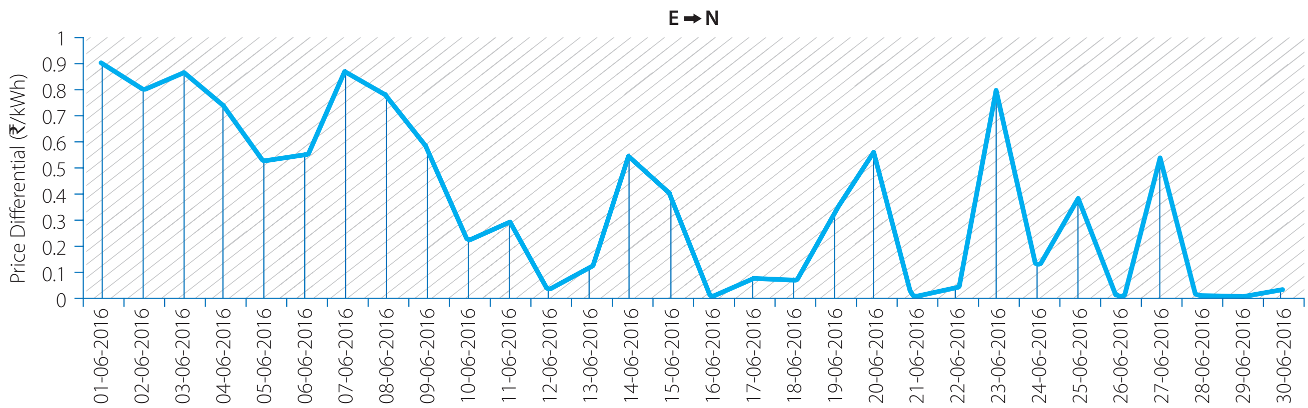
PARTICIPATION SNAPSHOT (as on 30th June, 2016)

Total Registered Participants	Open Access Consumers	Private Generators	Highest Participation
3,900+	3,521	343	1,410, 22nd June'13

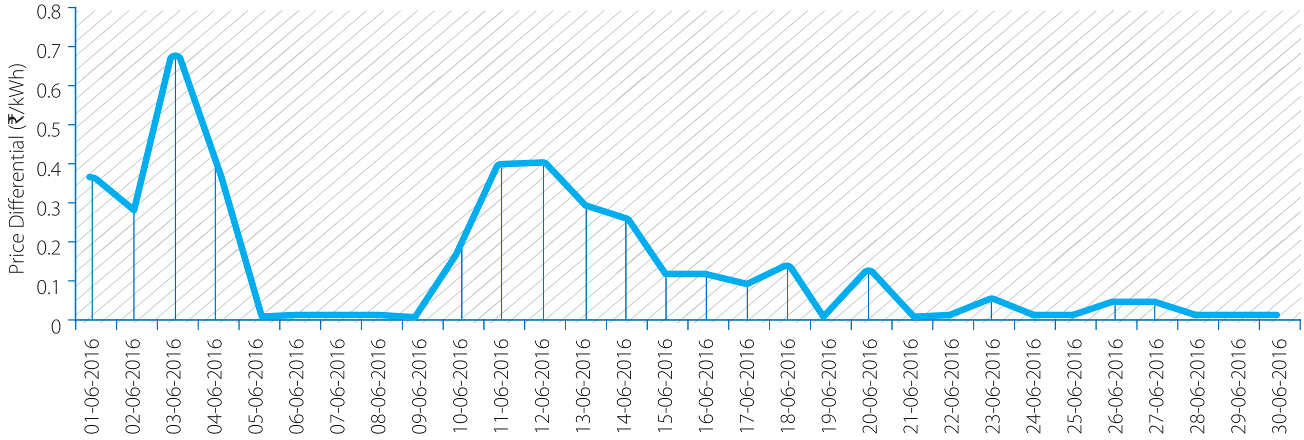




CONGESTION PROFILE (June 2016)



South Import



Now, trade 24x7 at IEX in extended market session in Intraday and Day-Ahead Contingency contracts

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Dear Readers,

We thank you for your encouraging response and support towards the IEX Bulletin. In our efforts to make this bulletin even more informative, we request you to send your suggestions and valuable feedback to kabir.wahi@iexindia.com

Warm regards,

Team IEX

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- **Financial Institution and Banks**
- **Academicians**
- **Consultants**

For registration, please contact:

Course Coordinator - Mr. Manish Arya
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