

ANNEXURE - A

BEFORE THE CENTRAL ELECTRICITY REGULATORY
COMMISSION,
3RD AND 4TH FLOOR, CHANDERLOK BUILDING,
36, JANPATH, NEW DELHI.

Petition No. /RC/2018

IN THE MATTER OF:

Introduction of New Bid (Order) types at Indian Energy Exchange.

AND

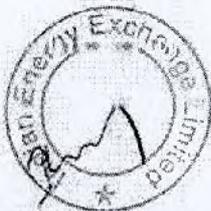
IN THE MATTER OF:

Indian Energy Exchange Limited (IEX)
Fourth Floor, TDI Centre,
Plot No - 7, Jasola,
New Delhi - 110025

---Petitioner

INDEX

Sr. No.	Description	Page No.
1.	Index	1-2
2.	Application and Prayer for Introduction of New Bid (Order) types at Indian Energy Exchange.	3-26



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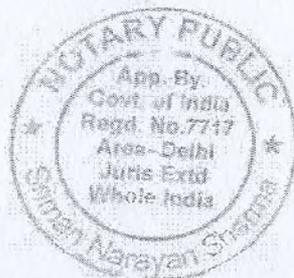
3.	Affidavit	27-28
4.	Annexure-A	29

For Indian Energy Exchange Limited



At New Delhi

Dated: 17th July, 2018



BEFORE THE CENTRAL ELECTRICITY REGULATORY
COMMISSION,
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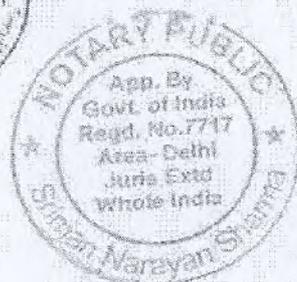
Indian Energy Exchange Limited (IEX)

---Petitioner

Fourth Floor, TDI Centre,
Plot No - 7, Jasola,
New Delhi - 110025

MOST RESPECTFULLY SHOWETH:

1. That, the petitioner, Indian Energy Exchange Limited, by order dated 31.08.2007 in the Petition No. 38/2007 was accorded approval by the Hon'ble Commission to establish and operate a power exchange in India.



2. By this Petition, the Petitioner herein seeks approval of this Hon'ble Commission for introduction of New Bid (order) types at Indian Energy Exchange.

3. Part- 4 of the CERC (Power Market) Regulations, 2010 provides the Principles of Market and Market Design. It details the objectives with which the Power Exchanges in India shall function and stipulates the market design that the Power Exchanges shall adopt in case of day ahead markets.

"10. A Power Exchange shall function with the following objectives:-

(i) Ensure fair, neutral, efficient and robust price discovery

(ii) Provide extensive and quick price dissemination

(iii) Design standardized contracts and work towards increasing liquidity in such contracts.

4. Pursuant to the principles enshrined in the CERC (Power Market) Regulations, 2010, Indian Energy Exchange has formulated its Business Rules wherein all the terms and conditions of the contracts including the trading sessions, matching rules, order types, delivery procedure, etc. have been mentioned. The Business Rules of the Indian Energy Exchange have been duly approved by this Hon'ble Commission.



5. The Hon'ble Commission took an approach of 'principle based regulation' to manage the macro picture with adequate safeguards and left micro management to the participants of the power market. This was done in order to leave enough space for innovation by the markets while complementing the security of the grid and the reliability of the power system.
6. The Hon'ble Commission has recognized the fact that building a market place, of which Power Exchanges are a part, is not a one-time activity. The Commission has highlighted that with the changing needs and continuous dialogue with the stake holders, regulations will have to evolve for an efficient and robust functioning of the Power Markets as whole and Power Exchanges in particular. Furthermore, the Hon'ble Commission also acknowledged that exchange may introduce innovation in the price discovery methodology.
7. Keeping in mind the basic principles and premises on which the CERC (Power Market) Regulations, 2010 were formulated and acknowledging the changing needs of participants of power market, IEX endeavors to infuse innovation and efficiency in the present exchange market design. However, we solemnly understand that any modification in the Power Exchange Market design, which has a material impact on the price discovery and cleared volumes, will need to be approved by the Hon'ble Commission.



8. The need for introduction of new bid (order) types stems from the fact that today the Exchange Market in India has considerably matured. The number of participants in the exchange market has increased significantly over the years. The power market scenario viz. the number of generators, types of generators, load pattern, peaking load pattern, increase in the renewable generation capacity etc. has significantly changed. Our participants have on a number of occasions requested us for introduction of such tools and services to cater to their changing needs. One of the most recurring requests by our clients has been in regard to the introduction of new bid (order) types.

9. In order to cater to the requirements of the clients, IEX conducted detailed research and development for introduction of different types of bid (order) types. Different bid (order) types existing in the International exchanges were also studied and presentations were made on the Introduction of New Bid (order) types at CERC and NLDC on 19th Feb, 2018 and 14th Mar, 2018 respectively. The presentations were followed by discussions and deliberations along with suggestions made on the same. While finalizing this petition on the Introduction of New Bid (order) types IEX has tried to ensure that concerns are addressed and suggestions incorporated. Thereafter, IEX convened a seminar and invited various stake holders while introducing the new bid (order) types conceptualized by IEX and seeking further comments and inputs from the participants. The seminar was held on 22nd June, 2018 which was attended by over 40 participants from across 20 members of the exchange. There a wide-spread consensus



amongst the participants who attended the seminar on the usefulness of the new bid (order) types being introduced. There was an interactive discussion and the participants were enthused about the launch of the new bid (order) types. The list of participants is attached herewith as Annexure-A.

Complex Bids in other International Power Exchanges:

ORDER TYPES	EPE X SPOT	NOR D POOL SPOT	N2E X	OMI E	IEX *	IEX- Propose d Bid Types*
Single Bid	Y	Y	Y	Y	Y	
Regular Block	Y	Y	Y	Y	Y	
Linked Block	Y	Y	Y		Y	
Profile Block			Y			P
Flexi Bid		Y	Y			P
Min Quantity Bid						P
MIC				Y		P
Scheduled Stop				Y		P
Load Gradient				Y		P



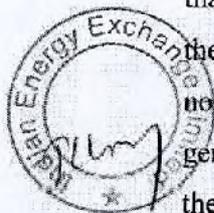
The table lists the international power exchanges and different bid (order) types available at those power exchanges.

Y – Yes/ Existing & P - Proposed

10. Presently, the members of IEX in the day ahead market are able to submit either Single Bid or Block Bids.

- I. A Single Bid specifies multiple sequences of price and quantity pairs in a portfolio manner. The quantity is assumed to vary linearly between two price pairs.
- II. Whereas a Block Bid specifies one price and one quantity for a combination of continuous 15 minute time blocks. Selection criterion is the average of area clearing price (ACP) for the quoted 15 minute time blocks, of the respective Client's bid area. A block bid is an 'all' or 'none' type wherein they are either selected or rejected in toto. Another variation in block bid available at the exchange for submission of bid is called as 'Parent-Child' Block bid. It is a linked block bid which provides conditional selection. In this type of block bid, the child bids will only be considered for selection post the selection of the parent or the main bid.

11. In the present market scenario, the issue with Single Bid is that it does not cater to the complex constraints of generators and demand pattern of the buyer. If the selected bid quantum is less than the technical minimum requirement of the generator, it leaves the generator in a situation where he is obliged to generate notwithstanding the fact that the quantum which he would generate is less than his technical minimum. Similarly, for buyers, the partial selection of single bids or selection of single bids in few



time-blocks and rejection in other time-blocks makes it difficult for the buyer to make the arrangement from different sources. Unreliability of the contracted quantum is one of the major flaws associated with single bid (order) type.

12. Similarly, a Block Bid specifies one price and one quantity for a combination of continuous 15 minute time blocks. The rigid feature of the block bid doesn't allow the change in quantum of power across the time blocks. This stands as a major disadvantage for renewable generators, thermal generators with partial LTAs, etc. Also, the issue of paradoxical rejection in case of block bids stands as a major concern. A block bid might get rejected by the system even though it would appear to be a valid bid for selection. This happens in a situation when inclusion of such a block bid might result in the change in MCP at which the bid cannot be accepted. In a nutshell, if the system accepts those bids, the average price of the market changes in such a way that the block bids are no longer justified to be selected.

13. IEX vide its circular dated 11th April, 2017 (circular no. IEX/MO/237/2017) increased the maximum quantity per Block Bid from 50 MW to 100 MW w.e.f. 12th April, 2017. Meetings were conducted on 14th June, 2017 and 25th August, 2017 by Hon'ble Commission with POSOCO and IEX to better understand the issues related to the Block Bid viz. Size of the Block Bid, Duration of the Block Bid, Impact on MCP, MCV and Social Welfare Maximization, Paradoxical rejection of Block Bids,



Impact on small players, etc. Based on the discussion in the meeting the Hon'ble Commission vide the letter dated 6th September, 2017 suggested that POSOCO, in coordination with IEX and CERC, shall examine the potential impact of 100 MW Block Bids. The Hon'ble Commission also suggested that POSOCO may consult any other academician or professional having expertise in power sector/exchanges to assist them in undertaking the study related to Impact of Block Bids. In this regard, we would like to mention that Prof. S.A. Soman & Dr. Rajeev Gajbhiye from IIT- Bombay presented before NLDC on 7th September, 2017 on 'Advanced Bid Structures'. The academicians highlighted paradoxical rejection, volume rigidity, etc. as the major problems associated with the present structure of block bids. The presentation included discussion on:

- a) Reasons for Introduction of Block Bids
- b) Problems with Block Bids
- c) Flexible Structures in Bids

The presentation concluded with the recommendation for introduction of New Flexible Bid Structure as an alternative to present Block Bids. The experts also concluded that this would allow the block bidders to be even more competitive and would reduce the possibility of Paradoxical Rejection.

14. In another presentation made by Prof. S.A. Soman from IIT-Bombay and Dr. Rajeev Gajbhiye on 13th July, 2017 on 'Introduction to Power Exchange', the problems with the existing



block bid such as Paradoxical Rejection of Bids (PRB) and the inflexible nature of the bids were discussed. These experts from the academia have suggested the introduction of Flexi Bids with features of volume flexibility, time flexibility, minimum income criteria for bid clearing, etc. to address the issues related to block bids. All these recommendations made by the power sector experts were put forward to the committee and these inputs were considered while finalizing the report.

15. In a meeting dated 27th September, 2017 for further deliberation on the issue related to Block Bids at the Power Exchange, NLDC in a presentation on '**Discussion of Market Design related to Block Bids**' contemplated the alternatives to the existing Block Bids at the Power Exchanges. Also the questions related to introduction of Flexible Block Bids, specifications of such Flexible Block Bids and their product design was broached.

16. In the report on '**Review of Block Bids at Power Exchanges**'- May 2018 (submitted in compliance to CERC letter dated 6th Sept, 2017), it was recommended to the Hon'ble Commission that new types of bids, 'exotic bids' may be examined to cater to the specific requirements of the different types of participants in the power market. The recommendation made to the Hon'ble Commission by the committee in the abovementioned report is quoted below:



New types of bids, 'exotic bids' should be examined to cater to specific requirements of the different types of participants in

market. For example, while placing bids, the Hydro generators may give energy on RTC/ defined time blocks, and allow for flexibility in the volume cleared in each time block depending on say, the price (high prices would indicate higher demand to be met & hydro optimization will help)."

17. In light of above mentioned concerns and deliberations, IEX proposes the introduction of new bid (order) types in the day ahead market.

The table below lists the new bid (order) types for the day ahead market proposed by IEX. The key benefits to the market participants are also listed in the table.

Serial No.	New Bid types	Bid Type	Key Benefits to Market Participants
A	Minimum Quantity Block Bid	Block Bid	Help reduce cases of paradoxical rejection of bids for sellers and buyers in DAM.
B	Profile Block Bid	Block Bid	Bring flexibility for various generators to model their bidding pattern and also help the Discoms for their demand side management.
	Minimum	Single	Provide flexibility for participants to



	Income Condition Bid (MIC)	Bid	plan for their Max Revenue Realization and would help recovering costs such as start-up cost in addition to variable cost.
D	MIC Bid with Schedule stops condition	Single Bid	Prevent an abrupt plant shut down in case MIC order is not accepted.
E	Load Gradient Bid Type	Single Bid	Increase flexibility in the day-ahead market and help the plants to manage technical criteria of ramping.
F	Flexi Bids	Single Bid	With this bid type, Pump based hydro plants can optimise their revenue by using Flexi bid and also add flexibility to the supply bids and help meet the peaking demand.
G	Enhancement in Link Bids	Block Bid	Parent-Child Bid combination's trade value would be considered for allocation with this enhancement.



Elaborate explanation of the new bid types being proposed is given below:

A. Minimum Quantity Block Bid:

As per prevailing mechanism, the quantity defined in a block bid is either 'All' or 'None' trade. The new order type will provide the facility to define **minimum quantity**. The Balance Quantity will be placed in multiple block bids as a sub set of the entire bid. For matching the system would first consider 'Minimum Quantity' bid in selection criterion. If the 'Minimum Quantity' bid is selected, the system would then consider remaining sub bids for selection. If 'Min Quantity' bid gets rejected then the system would reject its sub bids also. An example is illustrated below:

Minimum Quantity Block Bid: - Bid Entry Window

Description of Min. Quantity Block Bid:

Portfolio ID	From Period	To Period	Price	BID Quantity	Min. Tradable Quantity	No. of Sub Bids
N2DL0TST000	0:00	24:00:00	5000	100	50	10



Main Bid	50
Sub Bid-1	5.0
Sub Bid-2	5.0
Sub Bid-3	5.0
Sub Bid-4	5.0
Sub Bid-5	5.0
Sub Bid-6	5.0
Sub Bid-7	5.0
Sub Bid-8	5.0
Sub Bid-9	5.0
Sub Bid-10	5.0

The maximum quantity of a Minimum Quantity Block Bid would be the same as that a normal Block Bid which is 100 MW. The Minimum Tradable Quantity would be parameterized. For example if minimum tradable quantity is 50% of the total bid size and if the total bid size is 100 MW then the minimum tradable quantity has to be at least 50 MW. This parameterization shall be specified by IEX and would be notified to its participants. Also the number of Sub-Bids with each Minimum Quantity Block Bid shall be defined by IEX from time to time.

Benefit:

- The introduction of Minimum Quantity Block Bid would optimize the selection of bids and thereby minimize the chances of paradoxical rejection.



- Introduction of such bids would cause convenience to the users while entering bids.

B. Profile Block Bid

Provision to enter same or different quantity for each period would be provided at the time of block bid request. However, price would be same across all block period. Block bid price would be compared with Weighted Average price instead of Average price for the selection of the block. Weighted Average price would be computed using following formula:

Profile Block Bid: - Bid Entry Window

BID Reference	Standard/User Defined	Block	From Period	To Period	Quantity
E38	User Defined		06:00	06:00	50.0
E39	User Defined		06:00	12:00	40.0
E40	User Defined		12:00	18:00	60.0
E41	User Defined		18:00	20:00	40.0
E42	User Defined		20:00	22:00	50.0
E43	User Defined		22:00	24:00	60.0



Profile Block Bid Description:

Portfolio	Buy/Sell	Price
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N2DL0TST0001		Buy		5000
Bid Ref No.	Standard/User Defined	From Period	To Period	Quantity
BR1	User Defined	0:00	6:00	50
BR2	User Defined	6:00	12:00	40
BR3	User Defined	12:00	18:00	60
BR4	User Defined	18:00	20:00	40
BR5	User Defined	20:00	22:00	50
BR6	User Defined	22:00	24:00:00	60

i) Price: - Fixed price for whole segment of the bid; Price is compared with weighted average of the system price for matching.

Weighted Average Price would be computed using following formula:

$$\frac{\sum [\text{Bid Quantity (Buy/Sell)} * \text{Clearing Price}]}{\sum [\text{Bid Quantity}]}$$

ii) Volume: - It is possible to enter different bid qty. for different segments of Block Bid.

Profile Bid Selected if;



- a) {Sell Profile Bid Price < Weighted Avg. Price}
- b) {Buy Profile Bid Price > Weighted Avg. Price}

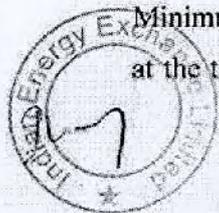
The maximum quantity of a Profile Block Bid would be the same as that of Normal Block Bid. The number of Profile Block bids would be parameterized and notified by IEX from time to time.

Benefit:

- Introduction of Profile Block Bids would facilitate the Variable Renewable Generators (Solar and Wind) bid according to the varying generation profile.
- Thermal Power plants with variable demand from its beneficiaries would be able to bid a varying generation profile at the exchange.
- DISCOMs and OA Consumers would be able to meet their variable loads through Profile Block Bids.

C. Minimum Income Condition Bid (MIC)

It is a new type of single bid which would allow the member to place a bid with a requirement of minimum revenue condition to be fulfilled. This condition establishes that, regardless of the price-volume matched for each single block of the next day, the bid would be taken out of the matching process entirely if the income obtained for the whole day is below a defined threshold, defined with two components: fixed amount (Rs.) and variable amount (Rs./MWh).



Minimum time period for bid selection will be defined by the user at the time of bidding. The introduction of Minimum Income Bid

would provide the members with an option to plan for the minimum revenue realization.

Selection Criteria: $\{Income \geq Fixed\ Term + Variable\ Term \times Accepted\ Quantity\}$

Portfolio Id-			Fixed Term	400000		Variable Term	
P/Q							
From Period	To Period	0	3299	3300	3499	3500	20000
0:00	0:15	0	0	0	0	-50	-50
0:15	0:30	0	0	0	0	-50	-50
0:30	0:45	0	0	0	0	-50	-50
0:45	1:00	0	0	0	0	-50	-50
1:00	1:15	0	0	-100	-100	-100	-100
1:15	1:30	0	0	-100	-100	-100	-100
1:30	1:45	0	0	-100	-100	-100	-100



Illustration 1 -A Sell Profile Bid from Hr. 1 to 7

Hour	Sell Bid Qty. (MW)	Fixed Term	Variable Term	System Price	Selected Vol.	Min. MIC required	Actual Income received	Selection
1	50	40000	3500	6000	50	1410000	1445000	YES
2	50		3500	4500	50			
3	50		3500	3200	0			
4	50		3500	3300	0			
5	100		3300	4600	100			
6	100		3300	4600	100			
7	100		3300	3200	0			

Illustration 2 -A Sell Profile Bid from Hr. 1 to 7

Hour	Sell Bid Qty. (MW)	Fixed Term	Variable Term	System Price	Selected Vol.	Min. MIC required	Actual Income received	Selection
1	50	40000	3500	3200	0	1585000	156000	NO
2	50		3500	3200	0			
3	50		3500	3000	0			
4	50		3500	4600	50			
5	100		3300	4000	100			
6	100		3300	4500	100			



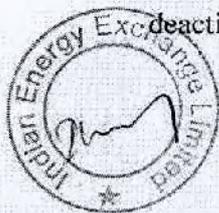
7	100		3300	4800	100			
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The Minimum Income Condition (MIC) is derived from two elements viz.; the fixed term and the variable term. The Minimum Income Condition applies a constraint which means that the amount of money collected by the order in all periods must cover its fixed term and its variable term multiplied by the total volume. The Minimum Income Condition constraint is in short defined by: a) fixed term (FT) in Rupees b) variable term (VT) in Rupees per accepted MWh. Minimum Income economic constraint means that the amount of money collected by the order in all periods must cover production costs of the plant, which is defined by a fix term (representing the startup cost of a power plant) and a variable term multiplied by the total assigned energy.

D. Schedule Stop Condition:

Minimum Income Bids can be assisted by scheduled Stop Conditions (SSCs). If MIC is not selected then it may lead to abrupt stop of a plant. Schedule Stop Condition (SSC) would prevent the same by selecting few initial bids and hence gradually bringing the plant to shut down.

To avoid the situation of abrupt shutdown, the bidder of an MIC bid has the possibility to define a "scheduled stop". Using a schedule stop will alter the deactivation of the MIC: the deactivation will not imply the automatic rejection of all the single



orders but the bid of the unsuccessful seller would be accepted at the Market Clearing Price and the quoted volume for the first time block and the volume would reduce subsequently over the next few time blocks to make the schedule of the generator as zero. In all the time-blocks the price would be the Market Clearing Price even if it is lower than the price quoted by the seller. SSC would help prevent abrupt shutdown of plant and make the grid more stable.

Benefit:

- Minimum Income Bid Condition would benefit Cold-Start & smooth shut down of a plant who would be able to factor-in their start-up cost.

E. Load Gradient Bid Type:

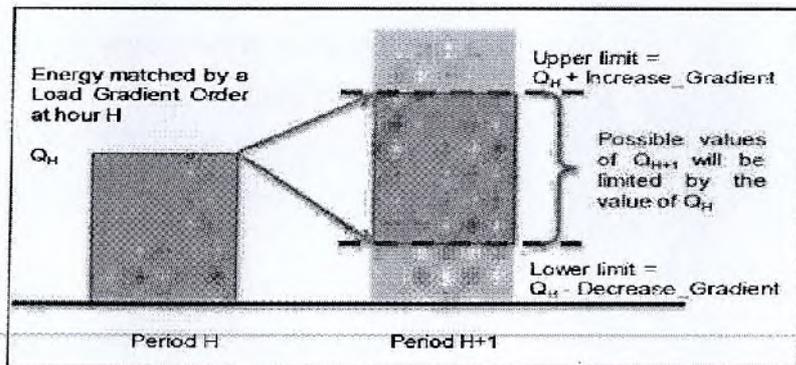
The load gradient bid would limit the variation between the accepted volume of an order at in a period and the accepted volume of the same order in the adjacent periods. Some generation technologies cannot cope with sharp variations of delivered power. With this condition, such generators would be able to specify maximum variations of power (in MW/minute or MW/15 min time-block) so that the matched energy between two consecutive time-blocks can be really supplied. The unit can state different types of ramp rates: start-up, shut-down, ramp-up and ramp-down. The indivisible block defines the gradients to use: up/down gradients over the indivisible block, start/stop gradients below the indivisible block.



A Load Gradient condition defines a maximum variation of the accepted quantity between consecutive periods which is according to the Ramping requirements as per the standards.

Increase Gradient: Maximum increase gradient in MWh.

Decrease Gradient: Maximum decrease gradient in MWh.



Benefit:

- This Bid type would benefit the Ramping requirements of the Power plants and would provide grid stability.

F. Flexi Bids

Flexi Bids would provide an option to users to place the bids wherein members can place Buy/Sell bid with quantity and price without defining the time period. User would be able to place bids with respective quantity and price.

Multiple flexi bids can be placed for the same portfolio with same or different price and quantity for the same Delivery Date. Flexi Bids can be entered between start time and end time defined for



DAM market for the respective Delivery Date in market time table.

i) **Price:** - Fixed price

ii) **Volume:** - Fixed volume and Possible to enter for one unspecified hour

iii) **Matching:** - Specific hour is assigned to the bid by algorithm during matching process based on the principle of maximization of the total welfare.

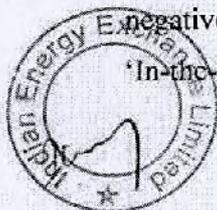
Benefit:

- Flexible Generators like Battery based storage or Pump based hydro can optimise their revenue by using Flexi bid and supply power at time of peaking demand.

G. Enhancement of Linked Bids:

In the present mechanism of Linked Bids the child bid is considered for selection only after the Parent bid is selected. However, in this new bid type (Parent/Child) would be considered for allocation even if it is 'Out of the Money i.e. there is a negative difference between Average Price and Block Bid price'.

This would occur if Bid to which it is linked compensates for the negative difference, making the total value of the linked blocks 'In-the-Money'.



	From Period	To Period	Buy/Sell	Price	BID Quantity	Average Traded Price	Result
Parent Bid	10:00	16:00	Buy	3102	1.5	2500	Included
Child Bid	22:00	24:00:00	Buy	2102	1.5	2300	Excluded

In above table, as per current implementation, Child bid would be excluded as there is a negative difference between Average Traded price and Block Bid price.

However, as per proposed enhancement, in the following example, as total value of linked blocks is 'In-the-Money' (4824) i.e. positive, Parent Child bid combination in the above table would be considered for allocation.

	BID Quantity	No of Hrs	Bid Price	Price Result	In-The-Money	In-The-Money-Value	New Result
Parent Bid	1.5	6	3102	2500	602	5418	Included
Child Bid	1.5	2	2102	2300	-198	-594	Included
Total						4824	



Similarly, in a case if the Parent bid is 'Out-of-Money' but when the child bid is included, the positive 'In-the-Money' value of child bid exceeds the negative 'Out-of-Money' making the total bid is 'In-the-Money', the total bids would be accepted.

Benefit:

- This enhancement in the Linked Bids would optimize the bid selection for both buyers and sellers.

PRAYER

1. In the premise the petitioner respectfully submits that this Hon'ble Commission may be pleased to allow IEX to introduce the new bid (order) types.
2. Amend/ modify Business Rules of Indian Energy Exchange Limited as approved by the Hon'ble Commission from time to time.
3. Pass such further order or orders as may be considered necessary in the facts and circumstances of the case.

For Indian Energy Exchange Limited



Authorized Signatory

At: New Delhi

Dated: 17th July, 2018

BEFORE THE CENTRAL ELECTRICITY REGULATORY
COMMISSION,
3RD AND 4TH FLOOR, CHANDERLOK BUILDING,
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New Delhi - 110025

---Petitioner

Affidavit

I, Indranil Chatterjee, Son of R.N. Chatterjee aged about 41 years and
having my office at Fourth Floor, TDI Centre, Plot No. 7, Jasola District
Centre, New Delhi — 110025 do hereby solemnly state as under.



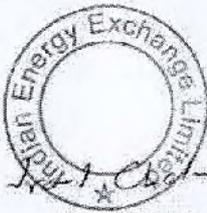
1. I am working as Chief Risk Officer in the Indian Energy Exchange Limited, New Delhi, and I am well conversant with the facts of the case and hence competent and authorized to sign this affidavit.
2. I have gone through the contents of the above Petition and I say that the facts stated therein are based on the records of the Petitioner and believed by the deponent to be true.


DEPONENT

VERIFICATION

I, the deponent above named do hereby verify that the contents of my above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

Verified at New Delhi on 17th day of July 2018.


DEPONENT



28

ATTESTED

Notary Public
(INDIA)

17 JUL 2018

ANNEXURE - A

Attendance Sheet

Date 22-Jun-2018

Training on New Bid Types

S No.	Name	Company	Signature
1	Abhishek Pandey	TPTCL	[Signature]
2	Abhishek Gupta	TPTCL	[Signature]
3	Pranav Mehta	Torrent Power Ltd	[Signature]
4	SANTANU ROY	WBSEDCL	[Signature]
5	MONOJIT DUTTA	WBSEDCL	[Signature]
6	ATIKA SHARMA	Instant Tugan & Power Ltd	[Signature]
7	Manuresh Krushnurkar	Statkraft Markets Pvt Ltd	[Signature]
8	Tanveer Singh	Statkraft Markets Pvt Ltd	[Signature]
9	GAURAV SAINI	SAINI POWER	[Signature]
10	Rakesh Kumar	Jsw Power Trading Co. Ltd	[Signature]
11	Satish Goswami	KISPL	[Signature]
12	Mritqash Kumar Shoh	CES, Pune	[Signature]
13	DHRUV DHIMAN	CUSTOMIZED ENERGY	[Signature]
14	Ranajit Bhattacharya	CEU Ltd	[Signature]
15	TILAK SENGUPTA	RPG POWER TRADING Co. Ltd	[Signature]
16	Debashish Naskar	BRPG Power Trading Co Ltd	[Signature]
17	MANAN A. GUPTA	BSES RAJDHANI POWER LTD	[Signature]
18	KALIRAJ S	BSES YAMUNA POWER LTD	[Signature]
19	Nisha Kothala	BSES YAMUNA POWER LTD	[Signature]
20	AYAN SEN	TPCL Power Trading Pvt. Ltd	[Signature]
21	RAFAT HOSEN MOLLAH	JPCL Power Trading Pvt. Ltd.	[Signature]
22	SANDEEP KUMAR	TATA POWER- DD	[Signature]
23	DEEPAIS MELIPAL	TATA POWER- DDL	[Signature]
24	JAI BARDHAN	GLOBAL ENERGY PVT LTD	[Signature]
25	Manish kumar	GEPL	[Signature]
26	PARAN BASAM	NETS	[Signature]
27	Pratyusha Khandulkar	NETS	[Signature]
28	Sunil Panikar	KISPL	[Signature]
29	Amiruddha Shukla	GMRETL	[Signature]
30	Abhinav Nitman	APPCPL	[Signature]
31	Pranay Shekhar	APPCPL	[Signature]
32	Akansha Garg	Mittal Processors Pvt Ltd.	[Signature]
33	Ashish Gupta	Mittal Processors Pvt Ltd	[Signature]
34	Jaspreet Katarwa	GMK Energy Trading Ltd	[Signature]
35	Karan Malhotra	PTC India Ltd.	[Signature]
36	BHASKAR SOREN.	PTC India Ltd.	[Signature]
37	Shashank Pandey	NTPC Vidyut V yapar	[Signature]
38	Mohit Srivastava	Jindal Power Ltd.	[Signature]
39	Shalabh Tendin	Jindal Power Ltd.	[Signature]
40	NITESH KOTHARI	SREE CEMENT LTD.	[Signature]
41	MOHIT NEBHWANI	SREE CEMENT LTD.	[Signature]

