

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN**



Dissertation

**Power Purchase in India trending towards E-Auction: A comparative study**

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### **Student Declaration**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

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Energy Trading

2015-2017

College of Management & Economic Studies, UPES

### **Acknowledgment**

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I take this opportunity to express my gratefulness to my family for their blessings in the successful completion in this endeavour

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## Certificate

This is to certify that the dissertation report entitled “Power Purchase in India trending towards E-Auction: A comparative study”, submitted by Priyanka Jyotishi to UPES for partial fulfillment of requirements for Masters of Business Administration (Energy Trading) is a bonafide record of the dissertation work carried out by her under my supervision and guidance. The content of the report, in full or parts have not been submitted to any other Institute or University for the award of any other degree.

(\_\_\_\_\_)

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## 1. Introduction

E-Auction methodology was adopted in the auction of coal mines earmarked for power sector under the provisions of Coal Mines (Special Provisions) Act, 2015 and the rules framed in order to ensure that there is no further rise in power tariffs. This was stated by Shri. Piyush Goyal, Minister of State for Power, Coal & New and Renewable Energy.

This new proposal aimed to bring tariffs down which can benefit the distribution companies as targeted by UDAY scheme. Under the e-auction, the centre awards the coal block to the company which quote the lowest charges for mining. Power producers are allowed to add those charges with price at which they will sell the power to distributor.

This time the government has replaced the conventional tendering process for power purchase by a state power distributor with an e-bidding platform as an attempt to make the bidding much more efficient and transparent by bringing up power procurement contract details to the public domain.

Three states like Kerala, Bihar and Andhra Pradesh have already sought out 1,000 megawatt (MW) of short-term power through the power trading portal, which was being opened by power minister Shri. Piyush Goyal in the presence of state power secretaries at New Delhi.

The Discovery of Efficient Electricity Price (DEEP) e-bidding reverse auction portal for now will cover short-term power purchase of less than a year and in the next few months; it will also start offering the options for longer-term power purchase too.



## 1.1. Power Scenario in India

India from past several years is facing challenges in the power sector. After the introduction of the electricity act 2003 which came into force from 15.06.2003. The objective was to protect the consumer's interests and provide power to all the people of the country without any discrimination. The act provides the certain policies like national electricity policy, open access in transmission, rural electrification, phased open access for distribution, free license for generation and distribution, power trading, metering should be mandatory and penalties on theft of power or electricity.

It has been seen that India has significant growth in generation over the years, but still it is suffering shortage and supply constraints.

Electricity generation performance:

The target for the electricity generation for the financial year 2016-17 has being fixed as 101.063 billion units (BU) i.e. there will a growth of 5.67% over actual generation 95.331 BU as compared to the 92.129 BU which was generated.(According to the power ministry of India.

## 1.2. Basic of Power Market

The basic things which should be known by anyone who wishes to understand about the power market or about power trading & exchanges or the E-auctioning system.

Power: The rate of doing work. Unit: Joule/sec or Watt

Energy: A practical commercial unit of electrical energy or work performed, it can be said that for any device with a power rating of 1kW is connected with the electric supply for 10 hours then it will consume 10kWh. Here power is 1 kW and energy is 10 kWh being consumed.

Power factor: It is the ratio between real and apparent power.

Plant Load factor: It is the actual energy produced in a given period of time in MWh in respect of the maximum possible energy in MWh which can be produced if plant has operated to its full capacity.

How the demand is being calculated for the procurement and billing purpose?

Demand is the active power required in MW over any designated period of time. Demand forecasting and procurement is done on the basis of three type of demand i.e. Sanctioned Demand, Maximum Demand and Contract Demand.

Electricity Duty: It is the charge levied for and paid to the state government electricity dept. against the energy consumed by a person in his day to day life use.

Fuel Adjustment Cost: It is the cost that permits a jurisdictional utilities on a regular basis to adjust the price of electricity which can reflect the fluctuation in the cost of the fuel used to generate the. It is being decided after it is being approved from CERC & SERC.

Fuel costs are generally the major part of the cost for generating electricity. Fuel prices i.e. cost of coal, oil etc fluctuate widely over relatively short periods of time.

The FAC allows utilities to adjust those fluctuations in their electric tariff.

Power trading: According to the Electricity Act 2003 it is the purchase of electricity for the resale thereof.

Types of power trading:

- Bilateral exchange
- Exchange

Bilateral trading: Power trading done between two parties and here both the parties know each other. It is done through short term, medium/long term and banking of power.

Exchange: Exchange is a platform where bidding is done anonymously i.e. buyer and seller are unknown to each other.

Currently there are 2 power exchanges are operational in India i.e. (IEX) & (PXIL)

### 1.3. Background of Power Market

The transformation of power sector in the past decade was accompanied by the creation of institutions which was used to enhance the efficiency of the market with bilateral trading and then later in 2008 the trading was started through power exchanges.

The electricity act 2003, along with pursuant regulations from given by CERC gave a way for the paradigm shift in the field of power sector. The act gives a platform for the development for a new competitive market which can be efficient and economical strong and can mobilize the new investments done in the power sector.

Long term contract in power market have dominated in the power sector, but it still need to meet the full requirement of the market participation and they are as:

- Electricity cannot be stored
- For peak load requirement are economically inefficient

Short term trading market is always necessary to appreciate the long term trades that cater to the core demand in the power market sector. The issues were partially addressed by traders operating in the bilateral short term markets and they are:

- Absence of a mechanism permitting correction of positions taken by the players in the long term market and short term market both which are close enough to the real time and hence they can be more efficient in the generation and the demand side of management.

- If there is an absence of mechanism where multiple players can come together and can have an interaction with others to determine a market price that can reflect the connection in with the players because in real time scenario all the players put their respective supply and demand.
- Auctioning of the surplus electricity resulting in discriminatory pricing.
- Insufficient price signals for the investment growth.

The exchanges are designed with an idea to make electricity market more effective, competitive and transparent. Successful development of exchanges is characterized by increasing the trade volume and reducing the price volatility over the period of time.

For the development of short term market in India, we have to analyze the power exchanges we have to do the following and they are:

- Increase in the participation and volume of the short term market
- Improving the market efficiency
- Use an efficient method for congestion management

#### **1.4. Indian Energy Exchange (IEX)**

It is India's premium power trading platform. It provides transparent, neutral and automated platform for the physical delivery of electricity. It enables the efficient pricing structure and counter party risk management for the participants in the electricity market who are eligible for the open access criterion.

There are various benefits of IEX and they are being described as:

- **Transparent Nature**
- **Access a diversified portfolio**
- **Secured Payment**
- **Minimal transaction overheads/charges**
- **Efficient portfolio management**
- **Hedging UI risks**

**IEX has various segments where trading is being done & they are:**

- Day ahead market(DAM)
- Term ahead market(TAM)
- Renewable energy Certificate(REC)
- Energy saving certificates(Eserts)

### **1.5. Power Exchange of India Limited (PXIL)**

Power Exchange of India Limited (PXIL) is India's first institutionally promoted Power Exchange that provides innovative and credible solutions to transform the Indian Power Markets. A deep understanding of the local markets is matched by PXIL's non-partial, unbiased and often fearless functioning, at time even in the face of uncomfortable conclusions. Their core values are – integrity, excellence, commitment and continued innovation. These are the bedrock on which the edifice of PXIL stands.

PXIL's unique combination of local insights and global perspectives helps its stakeholders to make better informed business and investment decisions, improves the efficiency of the power markets, and helps shape policies and projects.

PXIL is promoted by two of India's biggest exchanges and they are:

- National Stock Exchange of India Limited (NSE) and
- National Commodity & Derivatives Exchange Limited (NCDEX).

PXIL has taken so many initiatives so as to improve the exchange driven power market.

**1. Removing of regulatory hurdles:**

PXIL have identified some of their solutions for the following levels in power exchanges.

- **NOC specific Exchanges:**

In earlier days SLDCs used to provide exchange specific no ObjectiOn certificate for Open access cOnsumers. The pr0cess of receiving second NOC was banned, so participants had to wait till the NOC g0t expired so that they can apply for fresh NOC. So PXIL came up with this matter and raised its query to CERC. So CERC issued an amendment explaining that f0r short term open access regulations there will an neutral exchange NOC issued by all SLDCs.

- **Allocating transmission corridors:**

Generally according to the principles applicable on transmission corridors is that the larger applicant's gets larger share of the transmission corridor whereas the smaller participant gets the smaller share in the transmission corridor, so PXIL filed a petition to CERC seeking for an equal division of transmission corridor.

- **NLDC Operation charges:**

Generally the current structure of NLDC is to charge for the operational charges which create an arbitrage that stops a participant to transact on an exchange platform. CERC is to issue orders that will help in the elimination of burden on PXIL

## **2. Focusing on the retail market platform:**

As retail market has played a significant role in creating a base for the participation from buyer side on an exchange platform. This segment has a enough potential for getting a hike across the country.

## **3. Provision of NOC automation at SLDC:**

NOC automation software was installed successfully at Punjab SLDC that automates the arranged process to generate exchange neutral NOC which was to be issued by SLDC to an applicant

They have various segments where they deal and they are:

- Day ahead market
- Term ahead market
- REC
- Intraday product
- Any day product

## 1.6. Digitalization in Power Sector:

Our union minister of state for power, coal, renewable energy and mines Shri Piyush Goyal has opened new chapter to enhance transparency in power sector by launching mobile app like Tarang,web portal sites like E-trans, Deep etc which is being developed by thr rural electrification corporation transmission projects company limited (RECTPCL), a subsidiary of REC ltd.

The minister said that with the thinking of good governance, and keeping in mind about the Digital India an initiative by government of India.

TARANG: Transmission app for time monitoring and growth mobile app and web portal has been developed by RECTPCL which is under the visibility of ministry of power.

Introducing the electronic platform can enhance the ease, accountability and transparency, will boost the confidence shown by the investors in the power sector and a better price distribution will ultimately benefit the end user.



## 2. Literature Review

S.NO	TITLE	YEAR	AUTHOR	MAJOR FINDINGS
1.	Reverse bidding methodology for Auction of Coal Mines for Power Sector	2015	Press information bureau	Under the reverse bidding method the bidder have to submit the bid under coal India prescribed price
2.	Reverse-auction of coal to power companies may be scrapped	2015	Sarita Singh	There can be a radical change in the policy for the allocation of coal assets to private power companies through reverse auction and as well as state will have a freedom to select companies
3.	Comparison with different energy products	2012	IEA	Different energy product are using reverse bidding process
4.	Digitalization of power market	2016	Ministry of power	How power market can be more efficient in terms of sacredness, transparency. Pricing.
5.	Reverse Bidding Methodology	2015	Ministry of coal	Why reverse bidding was being introduced and what were its uses.
6.	Power generation	2017	CEA	Power generated in the financial year15-16 and then till Jan'17
7.	Power market across the globe and Indian power market	2008	Vishal pandey, S.A. khaparde	This defines the restructuring of power market across the power sector. This discuss about the transparency and various reform in power sector
8.	Forecasting Electricity prices	2003	Karakatsani & Nektaria	This one was giving us detail about the issues & challenges faced in electricity price forecasting.

9.	Tender results	Till May 2015	Ministry of Power	This discussed about the bidding result for conventional bidding results.
10.	Tender results	From June 2015  Till date	Ministry of Power	This discussed about the bidding result for e- auction bidding results.

### 3. Objectives

This report has been prepared after keeping following objectives in focus:

- Comparative study of power procurement pattern before and after E-auction implementation
- Comparison between conventional tendering process & E-auction
- Comparative study of power purchase prices through conventional & E-auction
- Concept of reverse auction & its implementation
- Brief comparison of power e-auction with other products like Coal, RLng etc.

## **4. Research Methodology**

### **4.1. Research Design**

The research conducted will be descriptive in nature – that is, the data that will be collected through primary and secondary media – and it will be thoroughly analyzed, and then, the industry would be explained so as to give answers to the research questions.

### **4.2 Hypothesis**

The primary idea of the study is to identify current bidding situation in India. Another reason behind the study is to see what the loopholes are in the present trading process which led to the introduction of E-Auction in India?

### **4.3 Methods of Data Collection**

The research will be conducted on primary and secondary data. The data is mainly extracted from report provided by regulatory authorities, research papers and IEX website. The industrial experts, MSTC.

### **4.4 Limitations of the Study**

- Since the concept of E-auctioning is new in India that was introduced in April 16 there might be limitation in the collection of data.
- As limited information is available, so on selected commodities comparison is possible

## 5. Comparative study of power procurement before and after E-Auction implementation

### Before:

Earlier Power procurement is done through three ways and they are:

- a) Power Exchange
- b) Bilateral Trading
- c) Banking of Power

### Description:

#### a) Power Exchange:

Power is the key to all the economic activities generally in the manufacturing activities in the country. Power distribution losses on an average are ranged between 15-20%. Likewise fluctuation in the power supply has become a problem with peak hour shortage of power as a threatening to upset production of power. For the regional supply and demand mismatch also are to add up to the transaction costs apart from the power losses.

As in such scenarios it has become more imperative to ensure a normal supply of power. Basically the selling of electricity is done through long-term, bilateral power purchase agreement between the buyers and the producers and the distributors had a faith upon the traders for the short term agreements.

The deals were generally done over the phone calls and other tend to be non transparent and counterparty's were never sure that they have got the best price in that deal.

Basically power exchanges are the platform where electricity generators, distribution licenses, CPPs, IPPs and MPPs at the national level can trade for small quantities and for small no of hours without any extra overload.

## Trading through PX

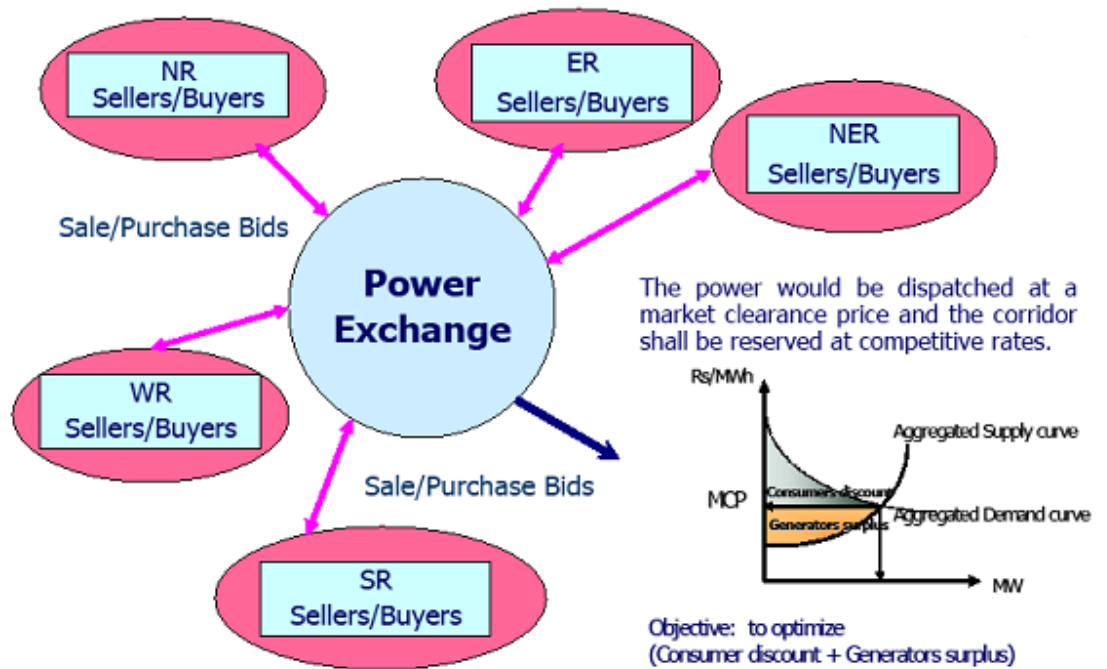


Fig A: Trading through Power Exchange

### Power Exchanges:

- (i) Indian Energy Exchange (IEX)
- (ii) Power Exchange of India Limited(PXIL)

#### (i) Indian Energy Exchange (IEX):

It is India's premium power trading platform. It provides transparent, neutral and automated platform for the physical delivery of electricity. It enables the efficient pricing structure and counter party risk management for the participants in the electricity market who are eligible for the open access criterion.

There are various benefits of IEX and they are being described as:

- **Transparent Nature**

IEX generally offers a transparent and as well as national level platform for trading electricity in India by leading to an efficient power market sector.

- **Access a diversified portfolio**

IEX also offers a broader prospect to the generators and distribution licensees on the national-level so that they can trade in the smaller quantities and smaller number of hours without any additional overheads.

- **Secured Payment**

IEX stands as the counter party for all trades, so that participants need not be worried about the risk-profile of the other party present in that particular system.

- **Minimal transaction overheads/charges**

In IEX, all the charges are being displayed on the IEX trading terminals only, as there is not as many as room for negotiation work. The cost of transactions through IEX is much less than any other mode of transaction.

- **Efficient portfolio management**

IEX also enables participants to adjust their portfolio as a function of consumption or generation. Participants likewise distribution licensees are generally enabled to manage their consumption and generation pattern wisely.

- **Hedging UI risks**

They provide a tool to hedge against adverse movement in electricity prices. Thus, price risk is being minimized.

They have various segments where they deal and they are:

- Day ahead market
- Term ahead market
- REC
- Intraday product
- Any day product

**(ii) Power Exchange of India Limited(PXIL):**

Power Exchange of India Limited (PXIL) is India's first institutionally promoted Power Exchange that provides innovative and credible solutions to transform the Indian Power Markets. A deep understanding of the local markets is matched by PXIL's non-partial, unbiased and often fearless functioning, at time even in the face of uncomfortable conclusions. Their core values are – integrity, excellence, commitment and continued innovation. These are the bedrock on which the edifice of PXIL stands.

They have various segments where they deal and they are:

- Day ahead market
- Term ahead market
- REC
- Intraday product
- Any day product



**b) Bilateral Trading :**

It is the transaction for exchange of power between a specified buyer and a seller either through directly or through a trading licensee or discovered at a power exchange through anonymous bidding from a specified point of injection to a specified point of withdrawal for a fixed or variable quantum of power for any time period during that particular month.

Bilateral Trading is done through:

- i) Short term contract;
- ii) Medium term/Long term contract

**i) Short term contract:**

Short term trading market counts about the 5% of the total generation and is also projected to grow at a very fast scale in the country. The key role of any trading company is to match and avail the power from the suppliers and according to the customer's requirement, scheduling of power to be flown on a day ahead basis and as well as term ahead basis and also depending upon the account and balancing requirements of both the parties involved in that particular contract.

Here generally time period is given till 1 year. For short term only single part of bidding is needed. In short term of bidding power is required for the peak load. Tender is filled for a shorter period of time and the bidding document is being issued by the purchaser in short term.

**ii) Medium term:**

Here time period allowed is more than 3 years till 12 years. For medium term there are two parts of bidding round. In this power required for base load only. For these there are case 1 and case 2 tendering process. In this there is a use of standard bidding document only.

Several favorable factors like matured reform processes having gap between demand and supply, higher growth rate in the Indian economy are creating an environment for the private players to participate.

Trading firms offer to take power on midterm or long term contract basis based on the specific requirement of the power projects.

Eg. Tata power trading company offers to sell power on medium or long term basis under bilateral negotiation to various distribution companies or other customers.

**iii) Long term:**

Here time period allowed is more than 12 years till 25 years. For long term there are two parts of bidding round. In this power required for base load only. For these there are case 1 and case 2 tendering process. In this there is a use of standard bidding document only.

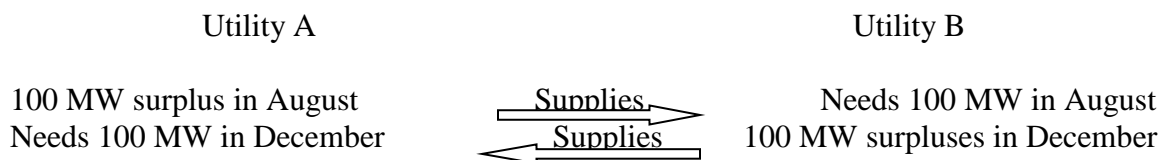
Several favorable factors like matured reform processes having gap between demand and supply, higher growth rate in the Indian economy are creating an environment for the private players to participate.

Trading firms offer to take power on long term contract basis based on the specific requirement of the power projects.

Eg: Tata power trading company offers to sell power on long term basis under bilateral negotiation to various distribution companies or other customers.

**c) Banking of Power:**

**Eg:**



**Fig B : Banking Of Power**

**After introduction of E-auction:****Introduction:**

An electronic auction is an e-business between auctioneers and the bidders which generally take places on an electronic market site. An electronic commerce which takes place or can be said as occurring in business to business (B2B), Business to consumer (B2C), or can be consumer to consumer (C2C).

The auctioneer offer commodities like power, coal, etc or services on the auctioning site. These kinds of auctions are transparent and all interested parties can easily apply to be a part of the auction.

MSTC is the site which is now being used for the bidding purpose in India.

E-Auction is of two types and they are:

- a) Reverse Auction
- b) Forward Auction

- a) Reverse Auction:

Generally E-Auction is done using reverse auction.



Fig C : The process of a reverse auction

b) Forward Auction:

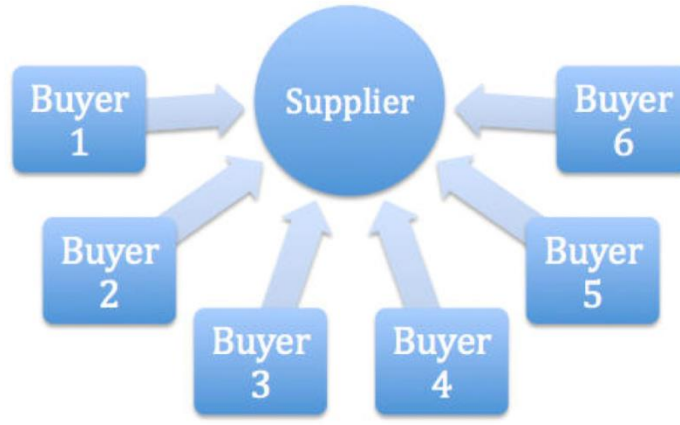


Fig D: The process of a forward auction

### Comparison between before and after Introduction of E-Auction is:

Taking an example of Punjab state power Corporation Limited:

- **Bid Quantities:**

Before E-auction came the PSPCL said that they have right to increase or decrease the quantum mentioned as per the availability of power before giving the LOI to the bidder. The minimum days given for a minimum quantum offered is 10 days for not less than 20 MW

After the introduction of E-Auction the minimum days given for a minimum quantum offered is 15 days for not less than 20 MW

- **Website**

Before E auction the tender specification was being downloaded from SPCL website i.e. <https://pspcl.in>

After the introduction of this process the tender is downloaded from [www.mstcecommerce.com](http://www.mstcecommerce.com) only.

- **Supply Of Energy:**

Before e-auction bidder can apply for only round the clock (RTC)

After e-auction came the bidder came apply for round the clock (RTC) and night power both timings.

- **Sources:**

Before e-auction the bidder has to submit the details of sources of supply i.e. whether they will supply from a specific generating source or a multiple sources. If the supplier is not able to supply the the agreement becomes voidable and hence agreement is no longer viable.

After e-auction came the agreement was same but with a new change added to it i.e. if the supplier is not able to supply the power due some constraints then he and the bidder shall have an option to schedule power from any alternative source with same landed cost charged. However it is up to the sole discretion of PSPCL whether to accept or reject.

- **Tendering process:**

Before e-auction there was a normal bidding process, basically it is paper pen process.

After e-auction came i.e. introduction to e-tendering and e-reverse auction the bidder can access through [www.mstcecommerce.com](http://www.mstcecommerce.com) or [www.powermin.nic.in](http://www.powermin.nic.in) or [www.pfcclindia.com](http://www.pfcclindia.com)

They have ay for one time 2000 i.e. non refundable money submitted.

- **Submission of Bids:**

The general tender process in bidding before introduction of e-auction was like the documents which were required to be submitted in triplicate in different envelopes. The tenders were submitted in three different parts and they were : part 1, part 2, part 3.

Part 1: Earnest money and cost of specification

Part 2: Technical/Commercial Bids

Part 3: Price Bid

After the introduction of e-auction the bidders were required to submit separate financial and non financial bids in 2 different parts. Like part1 & part2

Part 1: Non financial Bid

Part 2: Financial Bid

- **Price:**

Before the introduction of e-auction the charges like round the clock power were charged

After e-auction came charges like round the clock and night power were charged

- **Earnest Money Deposit:**

Before the introduction of e-auction the bidder had to submit Rs 5000000/- in the form of demand draft.

After e-auction came the bidders had to submit Rs 30000/MW/ month in the form of a bank guarantee issued by a nationalized bank in favour of pspcl provided by MSTC ltd. In portal

- **Billing & Payment :**

Before introduction of e-auction the billing process was taken as a crucial part of a bidding system. The bill always indicates the rate at which the total amount is due as per the agreement, rebate given for the prompt payment and adjustment done if left in previous period. According to the agreement a no dues certificate is issued always by the successful bidder to PSPCL within a month of final issued REA for all the final adjustment , so as to enable the PSPCL refund the EMD deposited by the successful bidder as performance guarantee.

After e-auction was introduced the billing process was taken as a crucial part of a bidding system. The bill always indicates the rate at which the total amount is due as per the agreement, rebate given for the prompt payment and adjustment done if left in previous period. According to the agreement a no dues certificate is issued always by the successful bidder to PSPCL within a month of final issued REA for all the final adjustment, so as to enable the PSPCL to refund the contract performance guarantee deposited by the successful bidder.

- **Payment:**

Before introduction of e-auction PSPCL should clear all its payment within 7 days of the receipt of the Fax bill.

After introducing the e-auction then the system is online receipt within 7 days. In case the last day is Sunday then the next working day will be taken as due day.

- **Rebate on the billed amount:**

Before introduction of e-auction the provision into which the payment is done is within a clause 8.2. In case the payment is done through cheque shall be collected by the bidder from the office of Dy. CE/ISB

After introducing the e-auction the provision into which the payment is done is within a clause 14. In case the payment is done through cheque shall be collected by the bidder from the office of Dy. CE/ISB

- There is no such clause named a under in before the introduction of e-auction I.e. **Contract Performance Guarantee (CPG)**

After the introduction of e-auction the **Contract Performance Guarantee (CPG)** that may be the bidder may be requiring to furnish the CPG within 7 days of working as an amount calculated at as 2lac per MW per month or thereof

- There is no such clause named a under in before the introduction of e-auction I.e. **Payment of liquidated damage**

After the introduction of e-auction the **Payment of liquidated damage** It is done after the failure to supply the instructed capacity: both the parties should make sure that the actual scheduling does not deviate from more than 15% of the contracted power as per approval of open access charges.

- **Payment security mechanism**

Before introduction of e-auction the PSPCL should provide a payment security mechanism as to a weekly revolving letter of credit which is equivalent to 15 days of billing and regardless to this all shall be borne by the PSCL only

After the introduction of e-auction the **Payment security mechanism** in this the PSPCL should provide a revolving LOI equivalent to 100% of the weekly energy corresponding to the contracted capacity at the tariff introduced in PPA. The LC should be opened within 10 days of the commencement of the supply of the power.



- **Scheduling Procedure:**

Earlier open access came in different clause. The scheduling and dispatch of the energy should be coordinated with respective RLDC as per the provision of IEGC and framework of ABT with the decisions of the RLDC and REB

After the introduction of e-auction the clause for a) **OPEN ACCESS:**

- a1. Scheduling Procedure:**

The scheduling and dispatch of the energy should be coordinated w.r.t. RLDC as per the provision given by IEGC and a framework made by ABT and decision take by RLDC and REB

- a2. Booking of Transmission Corridors:**

The bidder who gets the chance should apply for the booking of the open access transmission corridor to nodal RLDC. He is fully responsible for the timely filling up the documents before the nodal RLDC and coordinates with it simultaneously so as to get the timely booked Open access corridor.

The energy should be dispatched and scheduled as per relevancy of the provisions of CERC for the short term open access customers.

- **Validity of Bid:**

Before E-auction the bid offer should be valid at least for 30 days from the opening date of agreement and further no changes will be made in this.

After e-auction came the offer should be valid for at least 30 days from the date of opening or until time of signing of PPA and any withdrawal or modification of the offer prior to that shall not be permitted.

## 6. Comparison between conventional tendering process and E-Auction:

Comparing both the documents we can see that the way in which both the process actually worked.

According to the conventional pricing the charges were too high and after the introduction to the e-reverse auction the charges were came to be lower than the charges of conventional pricing.

Price discovered through e-bidding was significantly lower than prices at which power procured in the same period of time last year.

Ex:

For the 1<sup>st</sup> time through e-bidding system i.e. DEEP which was introduced as an e-portal for short term power procurement had been concluded for Kerala and Uttarakhand on given date i.e. 29/04/2016, for torrent power Ltd. Was 03/05/2016 and for Bihar it was on 09/05/2016.

Power secretary Shri P.K. Pujari congratulated the states for adopting the e-bid process and also said that this process resulted in substantial saving as prices discovered from e-bidding were lower than the prices at which the power was being purchased during the same period in the last year.

For Kerala the lowest price for the month of May slot was discovered at 3.14 Rs per unit, while in last year 2015 the short term power in the round the clock was purchased at a rate of 4.70 Rs per unit.

For Uttarakhand the lowest price short term of power for the month of July round the clock was 2.59 Rs per unit through reverse auction in the e-bidding system then power procured at the same period was 3.41 Rs per unit for last year 2015.

For Torrent power using e-bidding process, for them the lowest price for the month of May-June the rate was around 2.95 per unit. Torrent power did not participated for short term power procurement in between of years of 2014-15 and 2015-16 simultaneously.

For Bihar, the lowest bid for the month of July was 3.08 per unit. As there no procurement done in last two years through bidding done by the DISCOMs so there is no information.

After the introduction of e-reverse auction process in the power sector there was an overall reduction in the pricing for the procurement of power in different states leading to a transparent market in the auction process and finally benefiting the end users or the customers.

Shri Piyush Goyal, minister of state for power, coal, renewable and non renewable energy had inaugurated the launch of e-portal or e-app i.e. “DEEP (Discovery of Efficient Electricity Price)” for the procurement of the short term power by DISCOMs in the year 2016 with an objective of having consistency, transparency in the power procurement of power by the DISCOMs and at the same period of time promoting a sense of competition in the electricity sector.

A particular guideline for the short term procurement of power was being notified on 30/03/2016 by the Ministry of power, Government of India and makes it mandatory for all like the procurers to procure short term power by using this portal and for further in future this portal should also cover medium and long term procurement of power.

Power procurement pricing before introduction of E-Auction was like:

**Table no 1 : Power procurement through conventional bidding process**

S.NO	Quantity Requisitioned (MW)	Description	Trader	Seller	Bid Quantity (MW)	Price
1.	1400	10/06/2015 to 30/06/2015 (00:00 to 24:00 hrs)	Tata Power Trading	Adani Power Limited	200	3.42
			Instinct infra & power ltd	Instinct infra & power ltd	20	3.44
			PTC India ltd.	Malana	45	3.49
			PTC India ltd.	Allain Duhangan	110	3.49
			Knowledge Infrastructure	ACBIL/S CPL,WR	50	3.54
PTC India ltd	Mosear	150	3.55			

			Tata Power Trading	Vedanta Ltd	150	3.57
			GMR Energy Trading Ltd.	Kamalan-ga I	300	3.57
			NTPC Vidyut Vyapar Nigam	Vedanta Ltd.	150	3.57
			Tata Power Trading	Shree Cement ltd.	100	3.59
			NTPC Vidyut Vyapar Nigam	JPL/ JSPL	200	3.62
			Tata Power Trading	Jindal India Therma-l Power Ltd.	400	3.63
			PTC India Ltd	Adhunik power & natural resources ltd.	32	3.67

			Tata Power Trading	Adhunik power & natural resources ltd.	32	3.67
			Instinct infra & Power ltd.	Mundra OPG	35	3.73
			JSW Power Trading	Karcham Wangtoo	240	3.75
			GMR Energy Trading Ltd.	Warora	75	3.8
			NTPC Vidyut Vyapar Nigam	Tripura State Electricity Corp. Ltd.	25	3.84
			Knowledge Infrastructure	Action Ispat power Ltd	27	3.85
			Tata Power Trading	Government Of Himachal	250	3.86

				Pradesh		
			Tata Power Trading	Chuzache-n	100	3.86
			PTC India Ltd.	Diligent Power Private Ltd.	60	3.93
			MPPMCL	Madhya pradesh Power Mgmt. Company ltd.	200	3.99
			PTC India Ltd.	Grid Corporation of Orissa Ltd.	300	4.46
			PTC India Ltd.	Monnet Ispat & Energy ltd.	200	4.54
			Tata Power Trading	Adhunik Power & Natural Resources Ltd.	20	4.23

2.	1600 MW (0:00 to 24:00 hrs)	1/07/2015 to 15/07/2015	PTC India Ltd.	Adhunik Power & Natural Resources Ltd.	20	3.67
		1/07/2015 to 16/07/2015	Tata Power Trading	Adani Power Ltd.	20	3.67
		1/07/2015 to 31/07/2015	Instinct Infra & Power Ltd.	Aarti Steels Ltd	200	3.38
		1/07/2015 to 31/07/2015	PTC India Ltd.	Malana	20	3.44
		1/07/2015 to 31/07/2015	PTC India Ltd.	Allain Duhangan	45	3.49
		1/07/2015 to 31/07/2015	Kn0wledge Infrastructure	ACBIL/S CPL	140	3.49



		1/07/2015 to 31/07/2015	PTC India Ltd.	Anuppu I	50	3.54
		1/07/2015 to 31/07/2015	GMR Energy Trading Ltd.	Kamalan ga I	200	3.55
		1/07/2015 to 31/07/2015	Shree Cement Ltd.	Shree Cement Ltd.	300	3.55
		1/07/2015 to 31/07/2015	JSW Power Trading	Karcham Wangt0o	100	3.55
		1/07/2015 to 31/07/2015	NTPC Vidyut Vyapar Nigam	JPL/ JSPL	240	3.60
		1/07/2015 to 31/07/2015	Tata Power Trading	Jindal India Thermal Power Ltd.	200	3.62
		1/07/2015 to 31/07/2015	PTC India Ltd.	Adhunik Power & Natural Resource s Ltd.	300	3.63

		1/07/2015 to 31/07/2015	Tata Power trading	Adhunik Power & Natural Resources Ltd.	20	3.67
		1/07/2015 to 31/07/2015	Tata Power trading	Tata Steel Ltd.	20	3.67
		1/07/2015 to 31/07/2015	PTC India Ltd.	Government of Himachal Pradesh	20	3.7
		1/07/2015 to 31/07/2015	Tata Power	Government of Himachal Pradesh	250	3.71
		1/07/2015 to 31/07/2015	Instinct Infra & Power Ltd.	Mundra OPG	100	3.71
		1/07/2015 to 31/07/2015	GMR Energy Trading Ltd.	Warora	35	3.73

		1/07/2015 to 31/07/2015	NTPC Vidyut Vyapar Nigam	Tripura State Electricit y Corporati on Ltd	75	3.8
		1/07/2015 to 31/07/2015	Kn0wled ge Infrastru cture	Action Ispat power Ltd. Odisha	25	3.84
		1/07/2015 to 31/07/2015	Tata power trading	Chuzache -n	27	3.85
		1/07/2015 to 31/07/2015	PTC India Ltd.	Dilliigent Power pvt. Ltd.	100	3.89
		1/07/2015 to 31/07/2015	PTC India Ltd.	Monnet Ispat & energy	200	3.99
		1/07/2015 to 31/07/2015	Instinct Infra & Power Ltd.	OPGS-II , Guj	20	4.23
		1/07/2015 to 31/07/2015	MPPCL PTC India ltd	Madhya Pradesh Power mgmt. Company Ltd.	135	4.36
		16/07/2015 to 31/07/2015	Tata Power Trading	Grid corporati on of Orissa Ltd.	300	4.46

		16/07/2015 to 31/07/2015	PTC India Ltd.	Bhutan,B HPL	200	4.54
		16/07/2015 to 31/07/2015	Tata Power Trading	Adhunik Power & Natal resource Ltd.	125	3.63
		16/07/2015 to 31/07/2015	MPPCL PTC India Ltd.	Adhunik Power & Natal resource	55	3.67

Here we see that whatever quantum of power was being asked by the buyer were given but at a very high cost asked by the seller.

Eventually it was increasing day by day there was a change in the tariff which was high but not in good way. It had to be decreased but rather it was increasing.

So we can also that it was not good to afford that much of increment by a common man. It had to be more transparent about the charges because lately whatever charges were transferred had to be paid be the consumer only.

Power Procurement pricing scenario after introduction of E-auction in India:

As we know that power procurement after the introduction of E-auction is done by reverse bidding, so that the charges get lower and can be affordable by everyone.

Type: IPO/RA

Table No 2: Power procurement after E-Auction

Sl.no.	Requisition details	Quantity Requisitioned	Description	Booking Quantity	Booking Amount	Allotted Quantity	Accepted Price
1.	1(Punjab Periphery)	600 MW	From 01.06.2016 to 14.06.2016 (00.00 to 24.00 hrs)	400	2.68	400	2.68
				200	2.68	200	2.68
2.	2(Punjab Periphery)	1400MW	From 15.06.2016 to 30.06.2016 (00.00 to 24.00 hrs)	400	2.68	400	2.68
				200	2.68	200	2.68
				100	2.68	100	2.68
				200	2.68	200	2.68
				70	2.68	70	2.68
				150	2.7	150	2.7
				250	2.72	250	2.72
50	2.72	30	2.74				
3.	3(Punjab Periphery)	1400MW	From 01.07.2016 to	100	2.69	100	2.69
				200	2.69	200	2.69

			15.07.2016	100	2.69	100	2.69
			(00.00 to 24.00 hrs)	100	2.69	100	2.69
				150	2.7	150	2.7
				250	2.72	250	2.72
				50	2.74	50	2.74
				50	2.74	50	2.74
				120	2.75	120	2.75
				100	2.76	100	2.76
				50	2.8	50	2.8
				400	2.8	400	2.8
4.	4(Punjab Periphery)	1150 MW	From 16.07.2016 to 31.07.2016	100	2.69	100	2.69
			(00.00 to 24.00 hrs)	200	2.69	200	2.69
				100	2.69	100	2.69
				100	2.7	100	2.7
				150	2.72	150	2.72
				250	2.74	250	2.74
				50	2.74	50	2.74
				120	2.75	120	2.75
				100	2.76	100	2.76
5.	5(Punjab Periphery)	1300 MW	From 01.08.2016 to 15.08.2016	400	2.65	400	2.65
			(00.00 to 24.00 hrs)	200	2.65	200	2.65
				500	2.65	500	2.65
				100	2.65	100	2.65
				100	2.65	100	2.65
6.	6(Punjab Periphery)	1300 MW	From 16.08.2016 to 31.08.2016	400	2.64	400	2.64
			(00.00 to 24.00 hrs)	200	2.64	200	2.64
				500	2.64	500	2.64
				100	2.64	100	2.64
				100	2.64	100	2.64

7.	7(Punjab Periphery)	800 MW	01.09.2016	200	2.62	200	2.62
			to	500	2.62	500	2.62
			15.09.2016	100	2.65	100	2.65
			(00.00 to 24.00 hrs)				
8.	8(Punjab Periphery)	500MW	From	200	2.62	200	2.62
			16.09.2016	500	2.62	500	2.62
			to				
			30.09.2016				
			(00.00 to 24.00 hrs)				

Fig. E: Graph for month June(15-16)

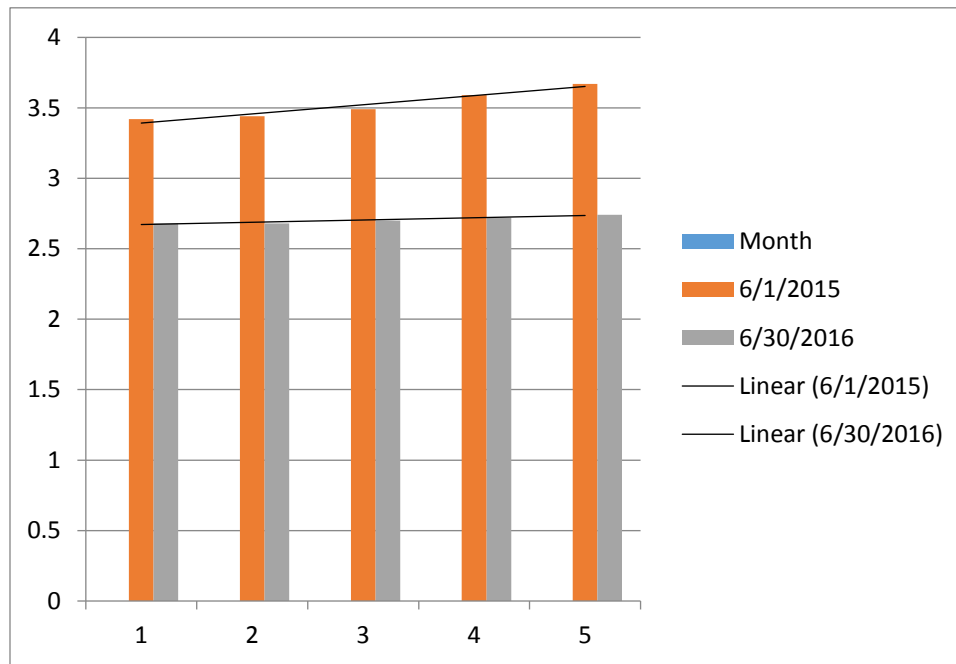


Fig. F: Graph for month July(15-16)

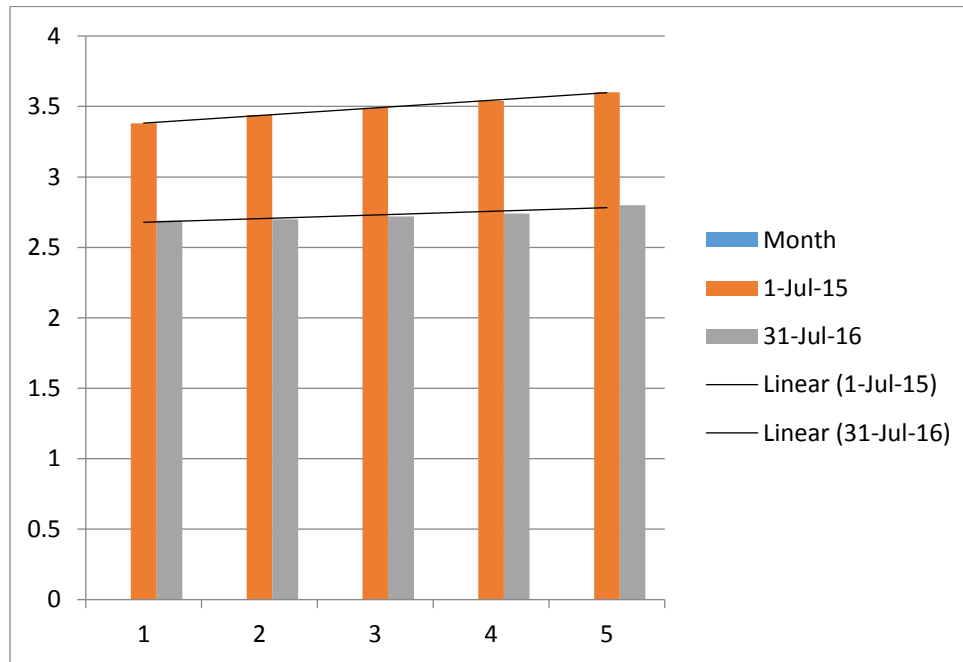


Table 3(a) Prices of IEX Average for June-July 15(Punjab Region(N3)):

S.No	Date	Price
1	10-6-2015	3.41
2	11-6-2015	3.60
3	12-6-2015	3.27
4	13-6-2015	3.01
5	14-6-2015	2.99
6	15-6-2015	3.00
7	16-6-2015	3.34
8	17-6-2015	3.66
9	18-6-2015	3.99



10	19-6-2015	3.98
11	20-6-2015	4.46
12	21-6-2015	4.35
13	22-6-2015	3.99
14	23-6-2015	3.49
15	24-6-2015	3.37
16	25-6-2015	2.72
17	26-6-2015	2.99
18	27-6-2015	3.24
19	28-6-2015	2.62
20	29-6-2015	3.44
21	30-6-2015	3.2
22	1-7-2015	3.29
23	2-7-2015	3.55
24	3-7-2015	2.65
25	4-7-2015	4.10
26	5-7-2015	3.20
27	6-7-2015	3.55
28	7-7-2015	3.24
29	8-7-2015	3.19
30	9-7-2015	3.22
31	10-7-2015	2.99

32	11-7-2015	2.88
33	12-7-2015	2.47
34	13-7-2015	3.18
35	14-7-2015	2.99
36	15-7-2015	3.21
37	16-7-2015	4.11
38	17-7-2015	3.63
39	18-7-2015	3.66
40	19-7-2015	3.19
41	20-7-2015	3.19
42	21-7-2015	3.19
43	22-7-2015	3.77
44	23-7-2015	3.90
45	24-7-2015	3.21
46	25-7-2015	3.05
47	26-7-2015	3.04
48	27-7-2015	3.04
49	28-7-2015	2.58
50	29-7-2015	3.48
51	30-7-2015	3.32
52	31-7-2015	3.09

Table 3(b): Prices of IEX June-July 16

S.No	Date	Price
1	10-6-2016	2.40
2	11-6-2016	2.30
3	12-6-2016	1.86
4	13-6-2016	2.15
5	14-6-2016	2.72
6	15-6-2016	2.53
7	16-6-2016	2.34
8	17-6-2016	2.54
9	18-6-2016	2.45
10	19-6-2016	2.54
11	20-6-2016	2.82
12	21-6-2016	2.19
13	22-6-2016	2.32
14	23-6-2016	2.99
15	24-6-2016	2.47
16	25-6-2016	2.69
17	26-6-2016	2.19
18	27-6-2016	2.82
19	28-6-2016	2.27
20	29-6-2016	2.22

21	30-6-2016	2.26
22	1-7-2016	2.77
23	2-7-2016	2.56
24	3-7-2016	1.89
25	4-7-2016	2.13
26	5-7-2016	2.14
27	6-7-2016	2.02
28	7-7-2016	2.03
29	8-7-2016	2.26
30	9-7-2016	2.26
31	10-7-2016	2.03
32	11-7-2016	2.21
33	12-7-2016	2.16
34	13-7-2016	2.16
35	14-7-2016	2.11
36	15-7-2016	2.29
38	16-7-2016	2.27
39	17-7-2016	2.09
40	18-7-2016	2.06
41	19-7-2016	2.05
42	20-7-2016	1.94
43	21-7-2016	2.51

44	22-7-2016	2.18
45	23-7-2016	2.34
46	24-7-2016	1.72
47	25-7-2016	2.35
48	26-7-2016	2.79
49	27-7-2016	2.89
50	28-7-2016	2.62
51	29-7-2016	2.36
52	30-7-2016	2.79
53	31-7-2016	2.49

Table showing the comparison between the bilateral vs IEX & E-auction vs IEX

<b>Date</b>	<b>Bilateral</b>	<b>IEX</b>	<b>Difference</b>
1-6-2015	3.42	2.38	1.04
2-6-2015	3.42	2.01	1.41
3-6-2015	3.42	2.01	1.41
4-6-2015	3.42	2.40	1.02
5-6-2015	3.42	2.1	1.31
6-6-2015	3.44	3.32	0.12
7-6-2015	3.44	2.99	0.45
8-6-2015	3.44	3.27	0.17
9-6-2015	3.44	3.36	0.08
10-6-2015	3.55	3.41	0.14

11-6-2015	3.55	3.60	-0.05
12-6-2015	3.63	3.27	0.36
13-6-2015	3.63	3.01	0.62
14-6-2015	3.73	2.99	0.74
15-6-2015	3.73	3.00	0.73
16-6-2015	3.75	3.34	0.41
17-6-2015	3.75	3.66	0.09
18-6-2015	3.85	3.99	-0.14
19-6-2015	3.85	3.98	-0.13
20-6-2015	3.86	4.46	-0.6
21-6-2015	3.86	4.35	-0.49
22-6-2015	3.99	3.99	0
23-6-2015	3.84	3.49	0.35
24-6-2015	3.86	3.37	0.49
25-6-2015	3.86	2.72	1.14
26-6-2015	3.93	2.99	0.94
27-6-2015	3.99	3.24	0.75
28-6-2015	4.46	2.62	1.84
29-6-2015	4.54	3.44	1.1
30-6-2015	4.23	3.2	1.03
1-7-2015	3.38	3.29	0.09
2-7-2015	3.38	3.55	-0.17

3-7-2015	3.38	2.65	0.73
4-7-2015	3.38	4.10	-0.72
5-7-2015	3.38	3.20	0.18
6-7-2015	3.38	3.55	0.17
7-7-2015	3.38	3.24	0.14
8-7-2015	3.38	3.19	0.19
9-7-2015	3.38	3.22	0.16
10-7-2015	3.38	2.99	0.39
11-7-2015	3.38	2.88	0.5
12-7-2015	3.38	2.47	0.91
13-7-2015	3.38	3.18	0.2
14-7-2015	3.38	2.99	0.39
15-7-2015	3.38	3.21	0.17
16-7-2015	3.38	4.11	-0.73
17-7-2015	3.38	3.63	-0.28
18-7-2015	3.38	3.66	0.19
19-7-2015	3.38	3.19	0.19
20-7-2015	3.38	3.19	0.19
21-7-2015	3.38	3.19	0.19
22-7-2015	3.38	3.77	-0.39
23-7-2015	3.38	3.90	-0.52
24-7-2015	3.38	3.21	0.17

25-7-2015	3.38	3.05	0.33
26-7-2015	3.38	3.04	0.31
27-7-2015	3.38	3.04	0.31
28-7-2015	3.38	2.58	0.8
29-7-2015	3.38	3.48	-0.1
30-7-2015	3.38	3.32	0.06
31-7-2015	3.38	3.09	0.29
<b>Date</b>	<b>E-auction</b>	<b>IEX</b>	<b>Difference</b>
1-6-2016	2.68	3.18	-0.5
2-6-2016	2.68	2.99	-0.31
3-6-2016	2.68	2.94	-0.26
4-6-2016	2.68	3.05	-0.37
5-6-2016	2.68	2.77	-0.09
6-6-2016	2.68	3.05	-0.37
7-6-2016	2.68	3.22	-0.54
8-6-2016	2.68	2.99	-0.31
9-6-2016	2.68	2.80	-0.12
10-6-2016	2.68	2.40	0.20
11-6-2016	2.68	2.30	0.38
12-6-2016	2.68	1.86	0.82
13-6-2016	2.68	2.15	0.53



14-6-2016	2.68	2.72	-0.04
15-6-2016	2.68	2.53	0.15
16-6-2016	2.68	2.34	0.34
17-6-2016	2.68	2.54	0.14
18-6-2016	2.68	2.45	0.23
19-6-2016	2.68	2.54	0.14
20-6-2016	2.68	2.82	-0.14
21-6-2016	2.68	2.19	0.49
22-6-2016	2.68	2.32	0.36
23-6-2016	2.68	2.99	-0.31
24-6-2016	2.68	2.47	0.21
25-6-2016	2.68	2.69	-0.01
26-6-2016	2.68	2.19	0.49
27-6-2016	2.68	2.82	0.16
28-6-2016	2.7	2.27	0.43
29-6-2016	2.72	2.22	0.5
30-6-2016	2.72	2.26	0.44
1-7-2016	2.69	2.77	-0.08
2-7-2016	2.69	2.76	-0.07
3-7-2016	2.69	1.89	0.82
4-7-2016	2.69	2.73	-0.04
5-7-2016	2.69	2.14	0.55

6-7-2016	2.69	2.02	0.67
7-7-2016	2.69	2.03	0.66
8-7-2016	2.7	2.26	0.44
9-7-2016	2.72	2.26	0.46
10-7-2016	2.74	2.03	0.71
11-7-2016	2.74	2.21	0.53
12-7-2016	2.75	2.16	0.58
13-7-2016	2.76	2.16	0.6
14-7-2016	2.8	2.11	0.69
15-7-2016	2.8	2.29	0.51
16-7-2016	2.69	2.27	0.42
17-7-2016	2.69	2.09	0.42
18-7-2016	2.69	2.06	0.63
19-7-2016	2.69	2.05	0.64
20-7-2016	2.69	1.94	0.73
21-7-2016	2.69	2.51	0.81
22-7-2016	2.69	2.18	0.51
23-7-2016	2.69	2.34	0.34
24-7-2016	2.69	1.72	0.97
25-7-2016	2.72	2.35	0.37
26-7-2016	2.74	2.79	-0.05
27-7-2016	2.75	2.89	-0.14

28-7-2016	2.75	2.80	-0.05
29-7-2016	2.76	2.36	0.4
30-7-2016	2.75	2.79	-0.04
31-7-2016	2.76	2.49	0.29

While comparing the above cases we can see that in case of Bilateral and IEX the maximum difference is 1.41 and the minimum difference was -0.49

While comparing the other case we can see that in case of E-auction and IEX the maximum difference is 0.71 the minimum difference is -0.54

So we can say that the pricing of bilateral changes more than the E-auction pricing and E-auction is reasonable to pay by the end user so E-Auction is more beneficial than bilateral.

## 7. Concept of reverse auction and its implementation:

Generally E-Auction is done using reverse auction.



Fig F: the process of a reverse auction

Reverse auction: it is defined as a tool which can be availed for procuring by improving its function as well as its effectiveness. It can be either defined as an auction that allows the organization that procures goods from the sources decreasing the bidding auction features.

Stages like primary preparation, conducting auction on a particular date, past auction date and monitoring the process are the general functions for the reverse auction.

As reverse auction is new for the market (for suppliers or bidders), the bidder needs to understand the whole process and their role to be played. The reverse auction can be done online as the E-auction self says electronic auction as a service availed from the market for a bidding process. The bidders can submit their bids online only keeping in mind that the bid has been submitted on a fixed time limit.

At the end of the process the bidder who places the lowest bid get the order. However one should always keep in mind that if the order is not being fulfilled in time then the agreement can get cancelled. So a fresh bidding process can take place in such cases.

Shri Goyal said that introduction to e-reverse auction process for medium term will take (1-5 years) this time span for the completion of the complete bidding process. Cost for the procurement of power is expected to be reduced and hence the end user will be last benefiter.

This system for e-reverse auction is being introduced as a concept for L-1 matching purpose and it depends upon the fuel chooses by the system.

To have a perception in make progress on everything builds so far in this way it has to be noted that e-bidding portal was being launched on 12.04.2016 for the procurement process of short term power by the DISCOMS.

So as to check this theory 8 states adopted this process and they were Uttarakhand, Kerala, Jharkhand, Bihar, Assam, Chhattisgarh, and West Bengal adding other private DISCOMs like torrent power, NPCL etc. around 18000 MW have been requisitioned with the help of DEEP portal.

As the process was transparent in nature so these states had obtained lower rates in the power for short term of procurement and these were the states like UPCL (2.57), KSEBL (3.14), Torrent power limited(2.95) PSPCL (3.6), JBVNL (2.89), BSPHCL (2.57), CSDCL (3.13) etc.

This portal is based on the given guidelines for medium term procurement of power to process which was notified by the Indian government in 2014 and was further amended on May 2015. As in a order to validate the use of the portal and have a clarity on it that the system is necessarily an amendment which will bring in the guidelines through it as soon as possible

Implementation of e-auction:

After the implementation of e-auction there were many advantages where seen in the reverse auction process.

They are:

- 1) It is a transparent process
- 2) It saves time as it is live in work
- 3) It gives vendor a base as in case of open reverse auction system
- 4) It gives us a better pricing

However in some of the instances there is certain weakness in this system too. Reverse auction cannot be run or work where there is cartel ling of suppliers. It cannot work there is a single source without any competition. In this process good relation made in past can be lost over a period of time while working with them. It is not suitable for the tailored made system.

## 8. Comparison of e-auction system for Power with other commodity.

A brief comparison of e-auction done power sector with e-auction done in other commodities like Coal, RLNG (Energy products).

E-auction in Energy commodities like Coal & Rlng:

Rlng:

The basic check on this particular commodity is done because to check whether the e-auction was suitable only for the energy commodities or other then energy commodities can also use the e-auction process.

This scheme gives a supply of imported RLNG “e-bid RLNG” to stranded gas based plants getting domestic gas up to a target plant load factor getting selected for reverse auction process

Contribution towards the process by different holders:

In order to achieve a mentioned price for power they have to be approved by central government, state government, power developers and gas transporters consequently.

Custom duty can be levied on such imports of lng which is used for the generation of power. An appropriate notification has been issued so that this benefit can be availed curriculum given by ministry of finance.

Levied on value added tax on e-bid RLNG. VAT can be waived off if e-bid done on RLNG is consumed for the generation of power which is based on the invoice given by the gas supplier.

Levied on service tax on regasification and on transportation of e-bid RLNG has been waived .

Likewise there is reduction done in pipeline tariff charges by GAIL to transport RLNG on e-bid system. Around 50% is being reduced on the pipeline tariff for the e-bid system.

Capping upon the fixed cost that has to be recovered by the developers. According to the fixed should be recovered by limited type of obligation towards debt serving and O&M cost.

Target PLF and Target Price:

The EPMC will set and fix the target PLF and target price.

**Table no 5: Indicative Target PLF %**

	FY 16	FY 16	FY 17	FY 17
	5 Monsoon Months	7 Non-Monsoon Months	5 Monsoon Months	7 Non-Monsoon Months
Stranded plants	25%	30%	30%	30%
Plants receiving domestic gas	25%	30%	30%	30%

E-bidding RLNG Operator: Gail is appointed as an operator for the e-bid process to be carried over.

Reverse e-bidding for the PSDF support & operational mechanism:

The whole mechanism is being defined in the for the e-reverse auction, while the whole procedure for the reverse bidding process is being finalized by the EPMC.

As RLNG, coal both is primary fuel which can use for generation of power. As these are the primary one and power is a secondary one, so effects on these two can also affect the power sector.

The basic comparison can done between with Power vs RLNG & Power vs Coal:

Power vs Coal:

Power vs RLNG:

**Comparison in Power with RLNG after E-Auction was introduced:**

- In terms of power in e-auction there are new law being implemented that Tax being introduced will be charged like VAT, Service Tax etc Whereas in RLNG these taxes are being levied if there are used in power generation.

- Operator in power purchase can be anyone whereas in RLNG sector the operator is GAIL.
- In power purchase there is no such obligation that even if the asked amount of quantum is not being supplied as asked by the buyer then no payment has to be done against it but in the RLNG delivery obligation are like take or pay system for it i.e. even if in the supply period in the relevant espn the buyer has to pay even if he/she has not taken that facility.
- For metering system that this much of quantum has been send is fixed only a meter in power purchasing but in RLNG there is a procedure for the metering of \equipment.
  - i.e. pressure and temperature with differential pressure transmitter is being used.
- Various test procedure for e-bid RLNG quantity are being used whereas in power these are not being used, i.e. various standards are being referred for the use of the terminology in RLNG sector.
- In power sector other then force majure suspension and termination are done if the reasons are viable to follow like if the seller is not able to arrange that much of quantum for that particular period of time then the seller is given some time added with some penalty whereas in RLNG the suspension or termination can done on the ground of seller's failure to deliver a particular quantity of RLNG  
Likewise if there bidder is not able to submit the certificates in power e-bidding it will be cancelled then and there only whereas in RLNG the bidder will begiven some time to fill up the details etc.
- Open access system is way to avail power in power sector but there is no such system for RLNG.

**Coal:**

In radical changes in the policy of allocating the coal assets to the private power purchasers through reverse auction system the government of India is looking for a change by considering a new step to use mines as well as the suppliers from coal India as they r the monopolistic authority. Under the proposal of free to choose companies in wrt



to lower power prices based on the coal coming from different blocks have adopted different UMPPs to allot coal blocks for generation of power

The introduction of e-auction in coal sector means giving a proposal for killing 2 birds from only 1 shot i.e. solving the problem of fuel supply and lack of power purchases agreement in one chances.

Under e-auction the government will award coal blocks to those who will quote the prices in the lowest mining charges only.

The introduction to or proposing of UDAY scheme for bringing the tariff down and spare the government from one of the litigations that could have aroused after coal blocks were awarded in reverse auction.

The reverse bidding methodology was accepted in the auction of coal mines to embark for the power sector under coal mines act 2015 provisions and the rules framed under that was in order to make sure that there is no drastic rise in the tariff of power prices.

#### **Comparison in e-auction for coal and power sector:**

- In coal sector while buying from the coal mine to supply the coal to the power generators the tariff used to change i.e. from initial reverse bidding to forward bidding for power sector whereas in the power sector the charges were same it changed only if the seller is not able to supply the quantum by itself then it will arrange power from other with same payment but adding an 2% extra with that much of amount.

Eg: shown for the coal purchase prices.

**Table 6: Coal Purchases**

S.No.	Name of the Coal Mine	Celing Price (Rs./MT.)	Closing Price (Rs./MT.)
<b>Initial Reverse and then Forward bidding (F) for Power Sector</b>			
1	T0kisud North	970	1110 (F)
2	Amelia North	1250	712 (F)
3	Talabira-I	620	470 (F)
4	Sarisat0lli	750	480 (F)
5	Trans Dam0dar	1500	840 (F)
6	Mandakini	860	650 (F)
7	Utkal- C	660	770 (F)
8	Jitpur	650	300 (F)
9	Ganeshpur	600	804 (F)

## 9. Conclusion & Recommendations

- After introducing e-auction use of the MSTC site is easy. The reach can easily be increased. E-auction can be used as for a better pricing option
- As standardized process is being operated by power Finance Corporation which comes under government and not utility, so preference is not being made as priority a proper channel is being maintained.
- No need of documentation for this particular option.
- For smaller utilities creating tender was a big task but coming of MSTC it is easier for the MSTC to help creating tenders for the short term period.
- Market is changing as it is shifting to a new era of power procurement system.
- In future this e-bidding portal will also use medium and long term power procurement by e-auction process.
- E-auction is not only for energy commodities it is also for other commodities and in future other commodities can also use e-auction system slowly.

It has to give sometime for getting it done in different parts of India so that the channel started has some transparency in it for everyone using this process.

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