Introduction to Law on Electricity
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Lecture 23
Trading and Power Market

Welcome to all of you. We have studied that trading is now a recognized activity, regulated activity in the Electricity Act. We have also discussed as to how trading brings in benefit for gerning units, brings in benefit for utilities, brings in benefit for the consumers. Now, let us look at how the power market works. Let us try to just get an overview of this that how power market operates.

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So, in today's session, we will be looking at power market and power exchange and also, we will see that what kinds of market is there in the power sector.

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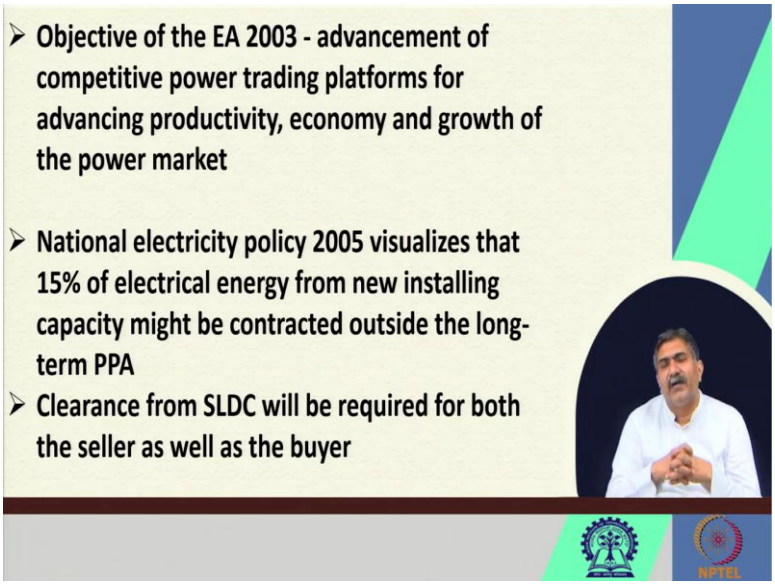

Now, when you look at the power market, it is very well connected with the aim and objective of the 2003 Act. The 2003 Act itself talks about bringing in competitiveness in the power market, it says that let there be a trading platform for facilitating buying and selling, for strengthening the financial health of the entities operating in power market and consequently, adding to the growth of power market.

The idea is that more trading of electricity should happen in the power exchange. More trading should happen where buyer and seller are coming together and getting the best available price. Not in a situation which is now traditionally being operated where you have PPAs, long term agreements and where a tariff has been fixed and that tariff is now onerous one, it is either becoming too harsh on the licensee to pass on to the consumer or it is very high for the consumer to pay and therefore bring in the issue of evasion. Evasion in terms of paying the electricity bill or influencing the political dispensation to announce free electricity.

So, electricity policy of 2005 somewhere indicated this that let the 15 percent of the electricity be traded and to be bought and sold outside the long term PPA. Because in long term PPA, it is all about entering into a contractual obligation where either party cannot deviate unless and until it is allowed under the law.

So, that is what is being envisaged under the policy of 2005 that 15 percent. Obviously, for this, there is a requirement of getting clearance from SLDC, and the reason of getting the clearance is to see that whether the transmission system is well equipped for facilitating such open trading of electricity or not.

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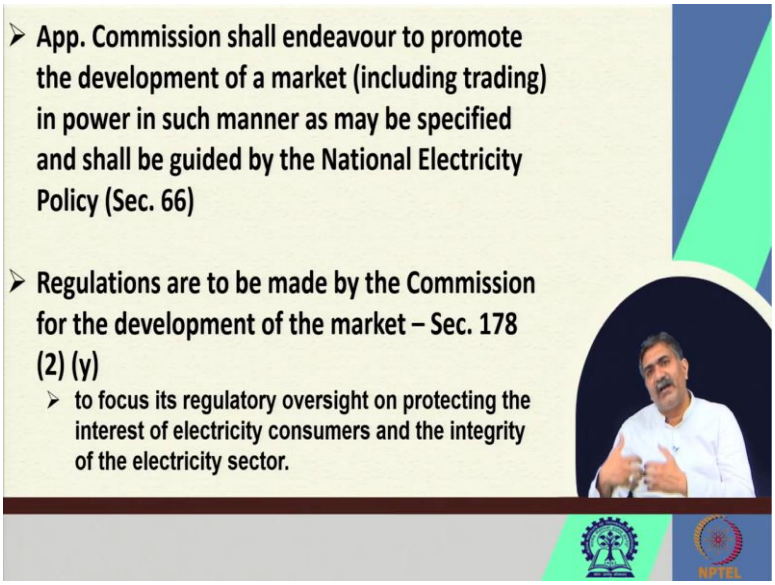

Because this is a situation, we are talking that there is a generation happening and the generating unit is looking for buyer. So, that electricity generated can be bought without channelizing it to licensees with whom generating unit had power purchase agreement. Section 66 of the Act entrusts this responsibility on the regulatory commission that you plan in such a manner so that power market can develop and flourish and ensure that competitive price is offered to the consumer.

That is what section 66 is. And this is very important; why? Because Electricity Act does not talk only about bringing benefit to the traders, bringing benefit to the one who has invested money, utilities. Electricity Act also talks about consumer welfare and that has to be kept in mind when you are talking about development of power market. In order to channelize, in order to streamline, in order to create a facilitative environment, regulatory commission has been interested to frame regulation under Section 178.

If you look at it, what it says to focus its regulatory oversight on protecting the interests of electricity consumers and integrity of the electricity sector. So, regulatory commission has a dual role to play and dual role to play, which are very delicate. On the one hand, to see that there is return on equity for growth of the electricity sector. On the other hand, it is also to be seen that affordable pricing is being offered to the consumer

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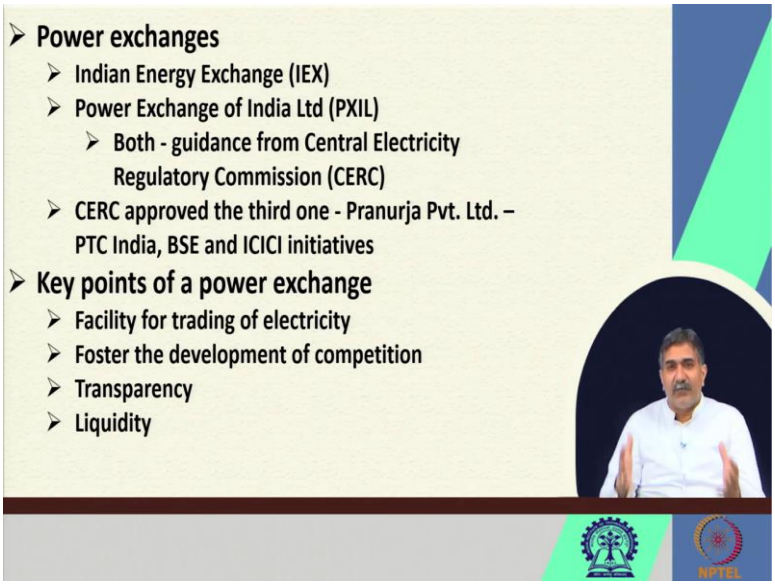

For the development of power market, we have in India two power exchanges, operating since 2008. These are Indian Energy Exchange and Power Exchange of India. Both of them work under the guidance of Central Electricity Regulatory Commission; it is Indian Energy Exchange which has major presence in the market in around 90 percent of trading happens on the platform of Indian Energy Exchange.

Now, you have a third exchange also; CERC has approved it, Pranurja Private Limited. Now, this company has submitted its rules and bylaws to the regulatory commission, which regulatory commission is waiting and perhaps after waiting it and seeing that it is as per the regulation passed by CERC, final approval may be given to Pranurja Private Limited.

This is promoted by Power Trading Corporation, BSE and ICICI. So, the approval is provisional one at this stage, the bylaws are being submitted by the company, the rules are being submitted by the company, and now the CERC is evaluating the same. Now power exchange, when you look at it, it facilitates the trading in electricity, but at the same time, it is not that it is the only way to trade, power exchange is not the only way to trade in electricity. It is one of the ways available to trade in electricity.

It has a potential of presenting a very fertile, very conducive environment to the players to compete. And the most prominent one is that power exchange creates an ecosystem where the transaction takes place in a very transparent manner and which ultimately results into affordable pricing of electricity. It also facilitates the cash flow and needless to say, the significance of liquidity in strengthening the power market.

Because if you recall, when we are discussing about the history, the evolution of electricity law, we have discussed that one of the reasons of this unbundling electricity board was financial health and, which still is a matter of concern for DISCOMS. So, if there is flow of cash, if there is a liquidity in the market, it will certainly be contributing in a positive manner for the growth of the market.

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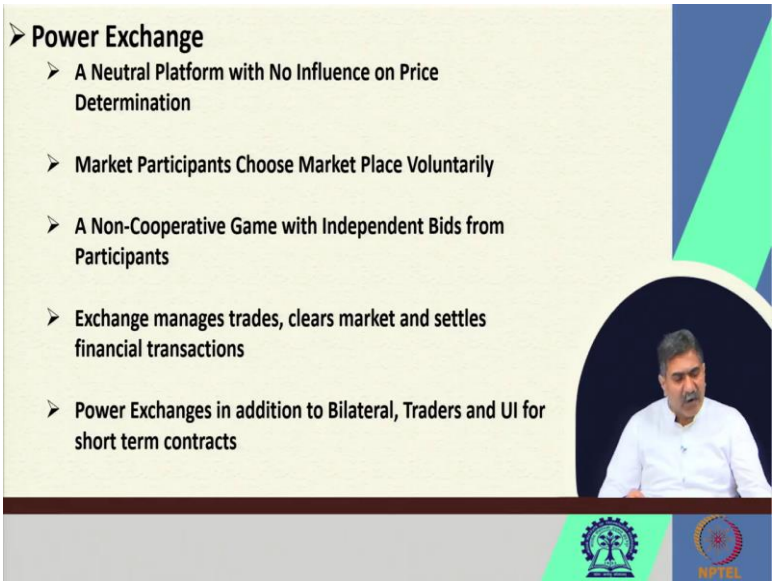

So, power exchange, what is power exchange? Power exchange is a neutral platform where there is no influence on price determination. Unlike what you see in a very traditional method, which we will be discussing in detail, the way the tariff determination is being taken place by the commission. Here, there is no tariff determination by the commission, here it is all about the price determination has been done by the buyer and seller.

Here, you would find that the choice is of the participants to enter the market; it is voluntarily nature, it is not a mandate that the electricity must be bought through this platform, it is voluntariness that if you have a, if you believe that you will be getting cheaper electricity, if you believe that you will get economic value of electricity, you come and participate in exchange.

So, voluntarily, it is there, and at the same time, it says it is a non-cooperative game with independent bids. Why non-cooperative? Because cartelization is something which is completely discouraged, which is not to be allowed at any cost. So, there is no understanding behind the curtain where there is a possibility of allowing the participants to freely bid for the electricity.

So, power exchange has a responsibility to manage the trade, clear the market and settle the financial transaction. So, good for the financial health of the market. Having said so, again, let me say because it is voluntary, it is not that the exchange happens only through the power exchanges.

Buying and selling of electricity also happens in a bilateral form. When trading is happening independent of power exchange or when unscheduled interchange is happening in a short-term contract, in those situations also buying and selling taking place. It is not that the power exchange is the only platform to buy and sell electricity.

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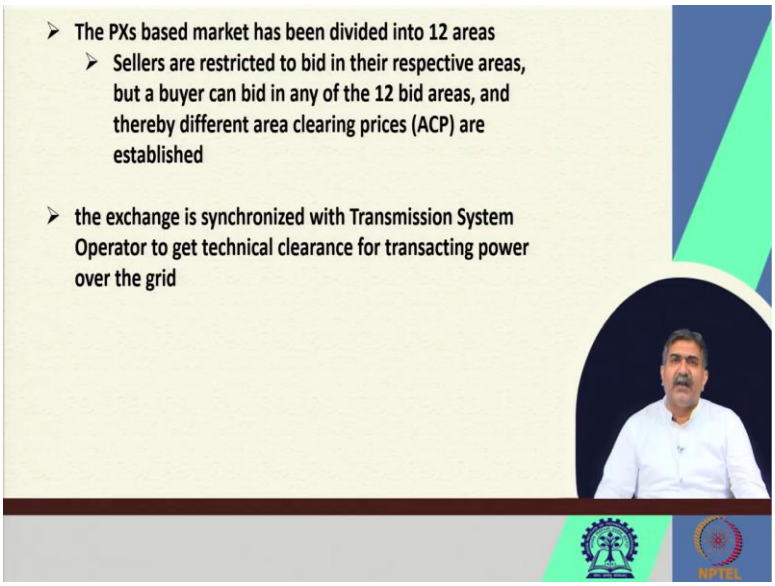

When you look at the operational part of power exchange, you find that the whole country is divided into 12 areas, where the area is restricted for the sellers, but buyer can very well bid in any of the areas. Therefore, what you find is that area clearing prices differ from one region to another region. Because the power exchange is synchronized with the system operator, with the power corporation which is into managing load dispatch centre, and grid, there is a need to take a kind of technical clearance for transacting power over the grid.

Here, you can very well understand the benefit of one nation one grid, because grid is now synchronized. Now, possibility has arisen where electricity can be bought by the buyer from any part of the country, because grid has been synchronized. Now, we have one grid. So, what is to be looked at is that whether there is a capacity to transport that electricity or not, there where the role of the system operator comes into play, where the system operator would be saying that necessary technical clearances are there or not.

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There are different kinds of markets. One is the long-term electricity market, where you have a power purchase agreement for a longer duration. Generally, long-term market is being set for 12 plus years, but in practice, what you find is generally for 25 years, which is where the distribution licensees enter into an agreement with the generating units for a long-term contract.

Then, you have a mid-term electricity market which is from 3 months to 3 years. 3 years to 12 year is not that way demarcated, but one may bring it within the bracket or mid-term electricity market. Short term electricity market is very, very, active, and it is playing a very instrumental role in the growth of the market, which is from intraday to 3 months, where you have basically a weekly contract or shorter contract for transaction of electricity that is what you find.

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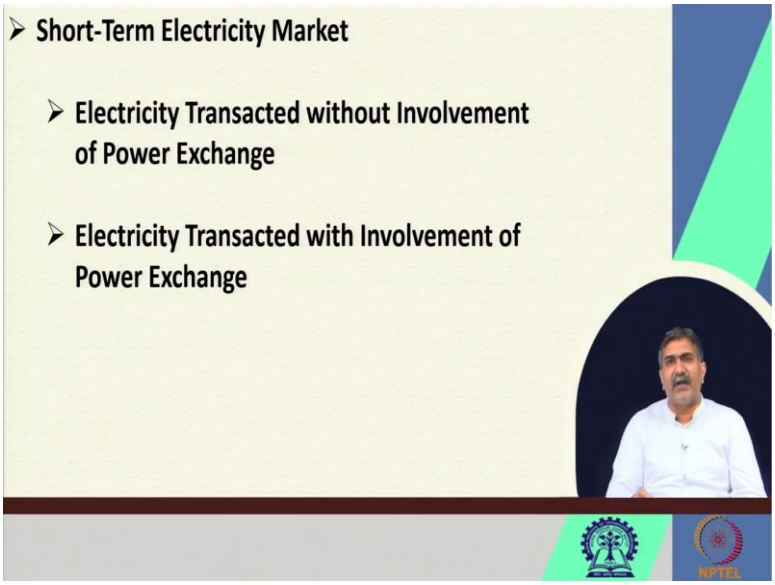

So, short term electricity market basically operates either with the involvement of power exchange or without involvement of power exchange. As I said that, it is not needed that all trade should happen through power exchange, and that is what even if you look at the policy document, it said that 50 percent should happen, meaning thereby it is not that everything is getting transacted through the power exchange. So, it is happening with the involvement of power exchange, and it is happening without the involvement of power exchange.

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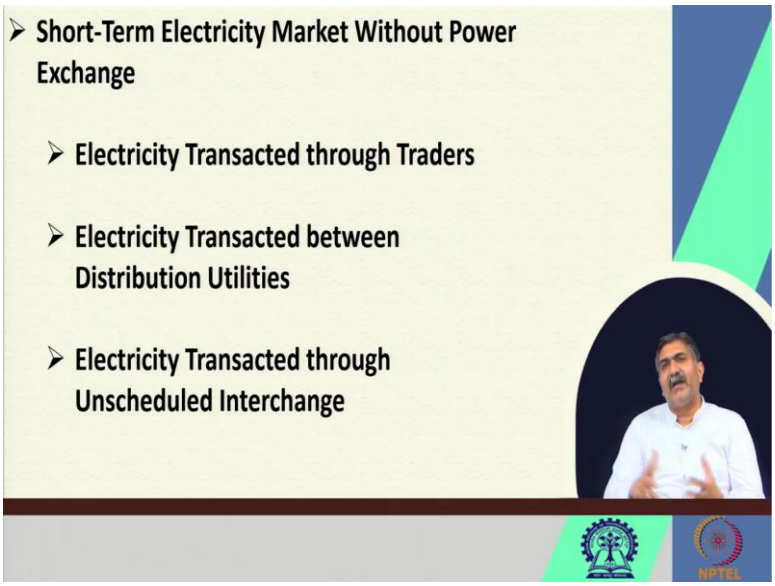

Without the power exchange, it is happening when the traders are transacting the electricity. When distribution utilities are transacting electricity that is also happening; I mean, there are

instances, let us say, where distribution utility of one area is getting electricity from distribution utility of another area.

So, the supplier is different from the licensee and then transaction is happening also through unscheduled interchange, because now you have a greater grid discipline; this unscheduled interchange is happening where there is better foresight for demand of electricity, and accordingly, buying and selling is taking place under unscheduled interchange.

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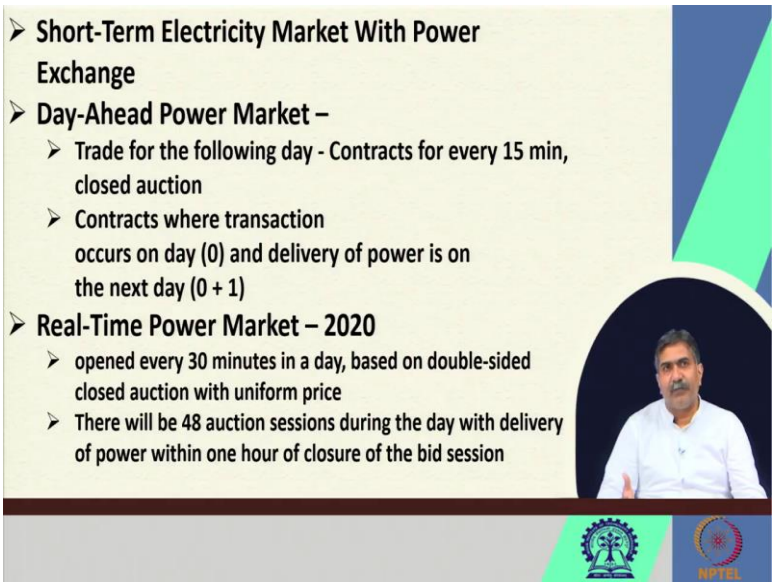

Now, with the power exchange, you have a different kind of product available. You have a day ahead power market, where trade is for the following day, where the contract is for every 5 minutes with a closed auction. Closed auction where buyer is submitting the bid and then seller as per the ability to supply is accordingly participating.

So, the contract is happening on day 0 and the delivery of power is happening on next day, 0 plus 1, what you technically also see known as transaction day that is T and T plus 1. For our purpose, we have made it 0 and 0 plus 1, 0 is the day when the contract is taking place where bid is getting finalized, and then you have the day, next day when the electricity is getting delivered.

This is a long day process, where bidding is taking place between 10 to 12 and then there is some verfication happening and ultimately, things are getting closed, and the final scheduling is being published at around 6 o'clock in the evening. So, this is how the things are happening. Real time power market has come into existence in 2020, where it is opening up for every 30 minutes based on double sided closed auction, which means that both seller and

buyer, they are bidding in the market, and then accordingly the kind, the auction is taking place.

So, obviously, 30 minutes in a day, you have a 48-auction session during the day with the delivery of power within 1 hour of closer of the bid session. So, unlike day ahead where delivery is happening the next day, here delivery is happening within one hour of closer of the bid session.

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And then, you have a term ahead contract market where from 3 hours to 11 days in advance, where you have four types of contracts, intraday, day ahead, contingency, daily and weekly. So, again here, what is happening is that contract is taking place on 0, and then electricity is been transferred, and it is being delivered on plus 2 or more days.

Basically, the contract in such market can be transacted in a weekly manner or a monthly manner or yearly or more in advanced. So, there is a particular timeline which has been defined for the expiry of contract before which delivery has to be done.

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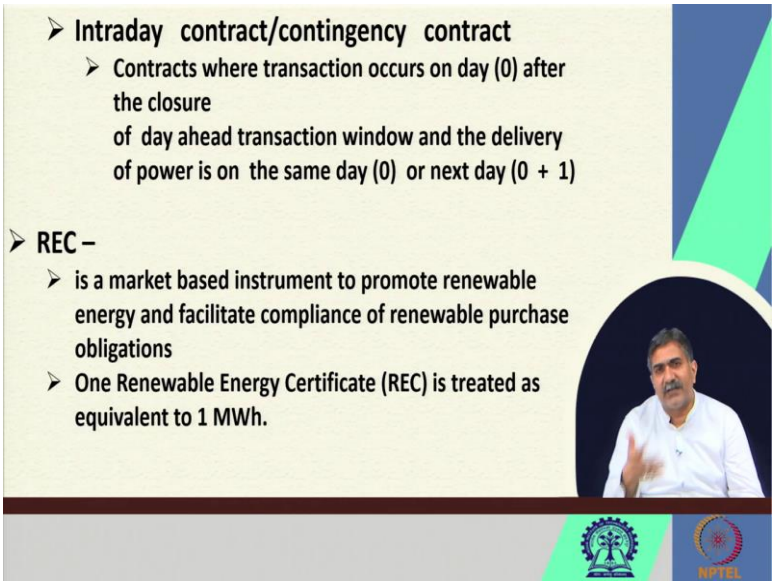

Same is the case with intraday contract or contingency contract, where you find contracts where transaction occurs on day 0 and after the closure of the day ahead transaction window and delivery of power is on the same day or on the next day that is what is happening in intraday. Now, these products which power exchange is offering is ultimately benefiting the consumers and benefiting both the utilities and the generating units because of the very simple reason that pattern of consumer is being changing.

We find that also, let us say, for example, weather condition changes, changes on a gradual basis where all of a sudden you find that summer is getting extended and you need to operate more appliances and then in accordingly, the demand is being shot up and in order to fulfil that demand, this kind of transaction can very well help the consumer.

So, this kind of demand can be met through the power exchanges, which can help the consumer. So, when you look at the power exchange and the benefit to the consumer, it is all about how meticulously the demand can be visualized. Accordingly, the demand will be met by the generating units.

So, sort of foresight and then with that foresight bringing in win-win situation for the players. So, that is what very important role which power exchange plays. In this power exchange, you have another product that is called as Renewable Energy Certificate that is to promote cleaner source of energy, wherein if there is a responsibility to buy electricity from renewable sources and if situation demands where it cannot be bought, then there is an alternative level where certificate can be taken, and that one certificate has a value of 1 megawatt.

So, this is all about facilitating the growth of renewables and this is also one of the products which is there to meet the responsibilities which are being entrusted, the obligation which are entrusted under the law to promote renewables to ensure that renewables also get the market.

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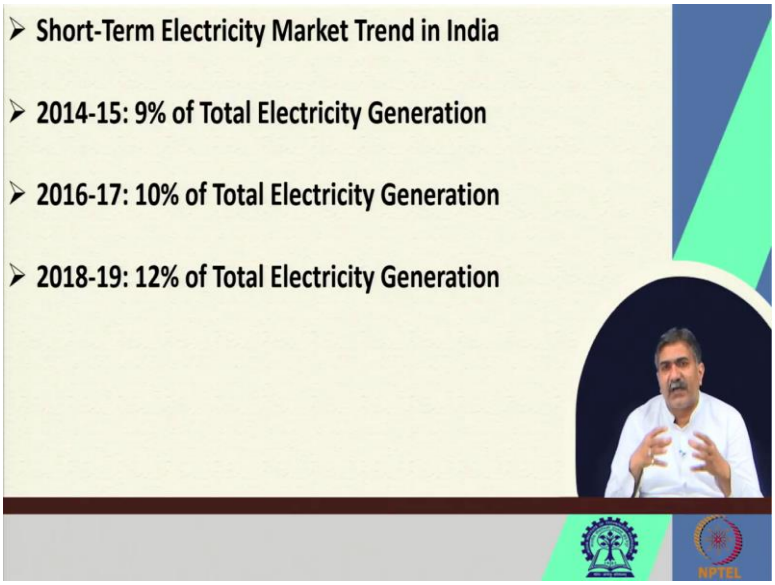

You have a short-term electricity market trend in India. If you look at it, it is gradually growing; why these statistics, these statistics to say that power market is now becoming vibrant, more transaction happening in short term electricity market reflects the confidence of the consumer, reflects the confidence of the utilities to get the electricity even when there is lesser period to place the demand before the generating units.

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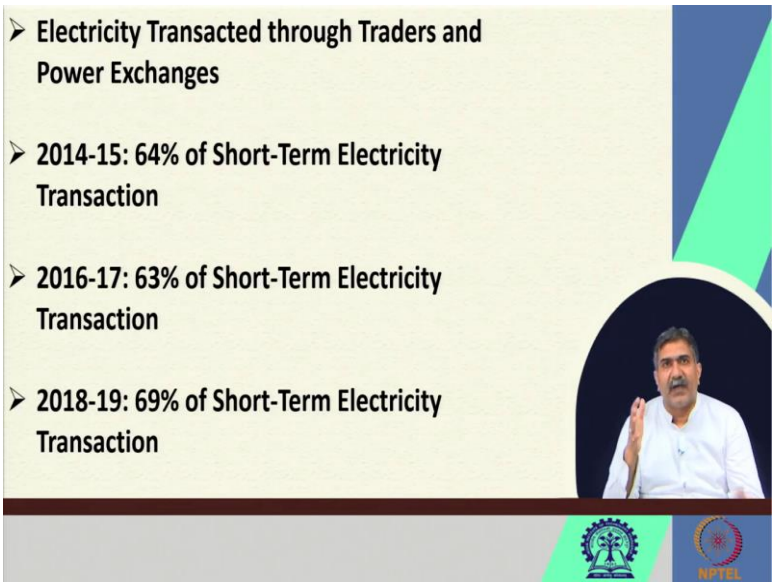

When you look at the electricity transacted through the traders and power exchanges, you find again short-term electricity transaction is again doing well there. Obviously, it is in total statistics where both traders power exchanges. So, there again, one can very well say that short of market in a way is giving confidence to both the players in the market.

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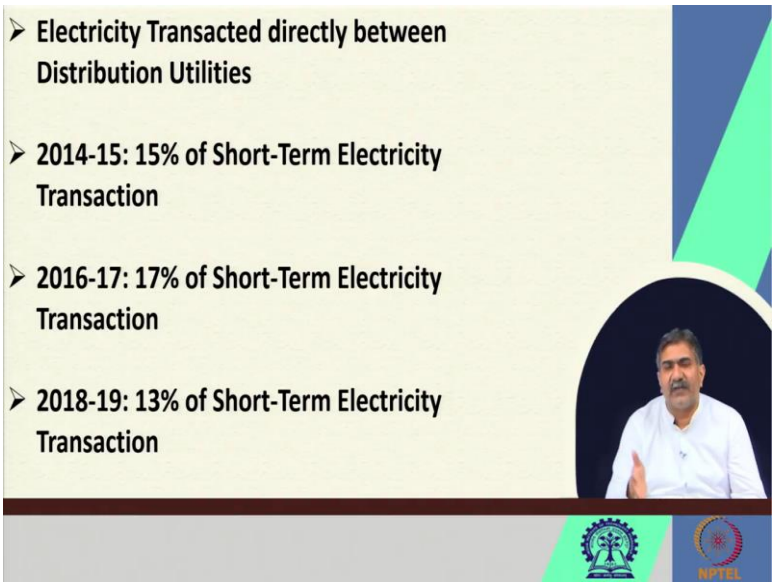

When you see the trading happening between the distribution utilities, as I said that there is a possibility that the supply is coming from some other distribution utility who has not been given license in that area.

So, in that situation, also you find that the 2019 statistic says it is 13 percent of short-term electricity transaction is happening through this trading or through this transaction between the distribution utilities.

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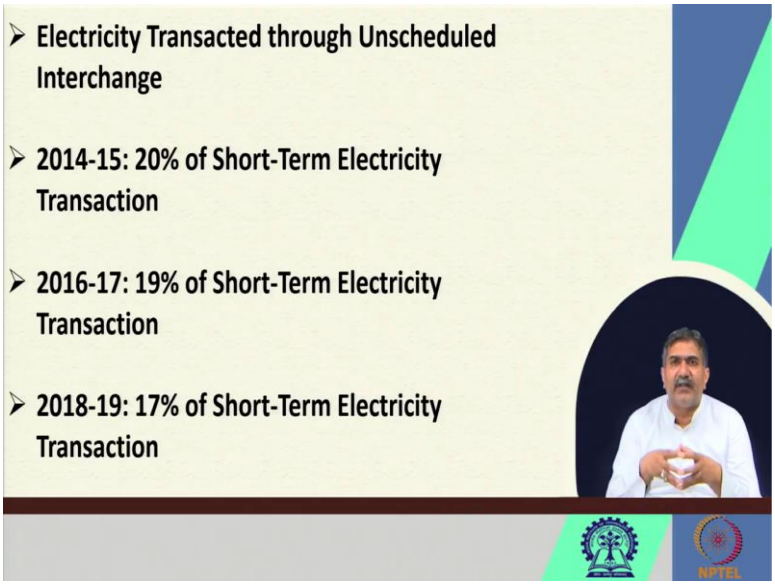

Unscheduled interchange, as I said this is another good thing, where you would find that the robust technology, the grid discipline is helping in meeting the peak demand. It is facilitating the growth because if there is a demand and if demand can be fulfilled, then it will always be good for the industry an unscheduled interchange somewhere promises that and it also helps in maintaining the optimal capacity of the trading units.

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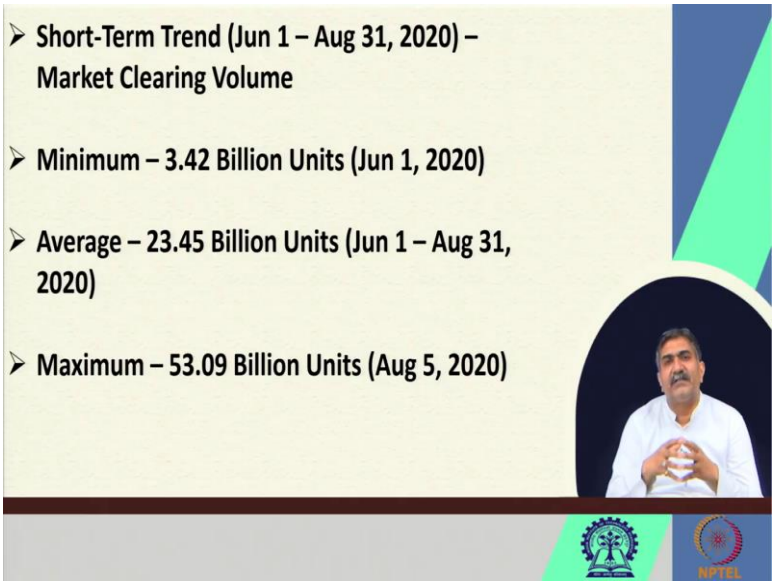

And then when you look at the market clearing volume, why these statistics just to understand that the traders, the players are showing confidence in the short-term market. You see, there was a maximum trade. This market claimed volume done on August 5, that is 53.01 billion units.

So meaning thereby that power exchange, they are operating in a very transparent manner; they are helping the bidders to come to a price which is acceptable, which is reasonable, which is affordable and also which is better than what otherwise they would have fixed by entering into long term agreement.

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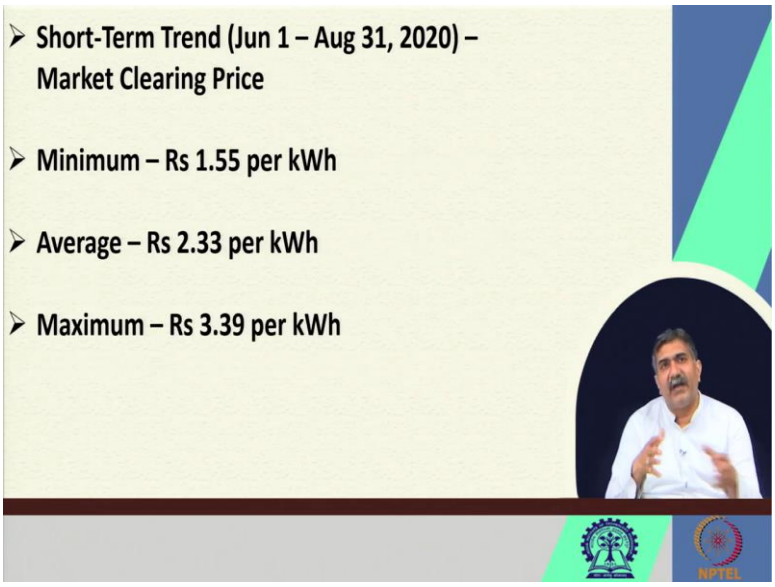

So, that is what is another benefit and then look at the pricing, you would find that it is minimum is 1.55 and maximum is 3.39. So, pricing is reasonable, meaning thereby, again, that this power exchange through this short-term market is making the electricity available for all. It is giving a message to the industry that, if you have a need, you can very well get electricity from the short-term market, there would be no adverse impact on your manufacturing ability.

Same is the case with, let us say consumers where the pattern is getting changes. Now, individuals are using more home appliances, electric home appliances, so the short market somewhere is growing, and this growth is occurring well for the power market. That is how I would say that the law is facilitating the growth of power market. Regulatory commission is very diligently doing the job of oversighting of this power market.

So, that is what is the significance of Section 66, read with section 178 of the Act and the way the power exchange is operating and ensuring transparency in the whole deal. Thank you very much.

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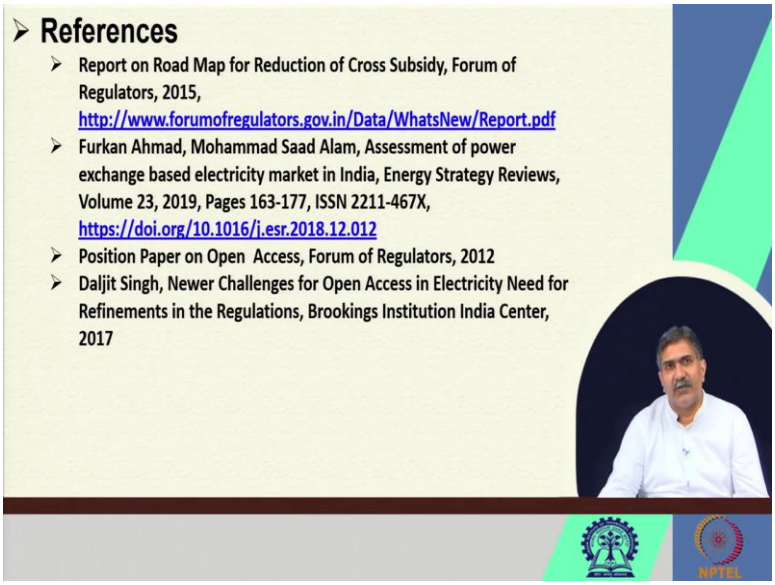

These are the references for this module. Thank you.