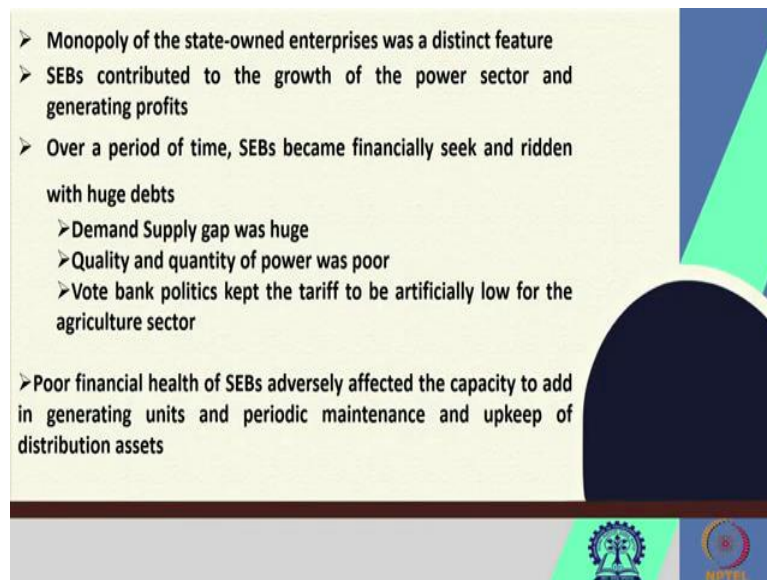


Introduction to Law on Electricity
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Lecture 3
Evolution of Laws on Electricity

Welcome to all of you. Now, today we will start lecture three. In lecture three, we will be discussing the evolution of the law on electricity. We have already started discussing on how the law has progressed from the 1910 Act and all the way up to post independence phase. So, now, we will be discussing the problems that occurred in the 1948 Act. And how because of that, a new legislation was brought in in order to bring a necessary reform in the sector? The reason why the sector could not perform well because of the monopoly with the State; State started enjoying in the sector.

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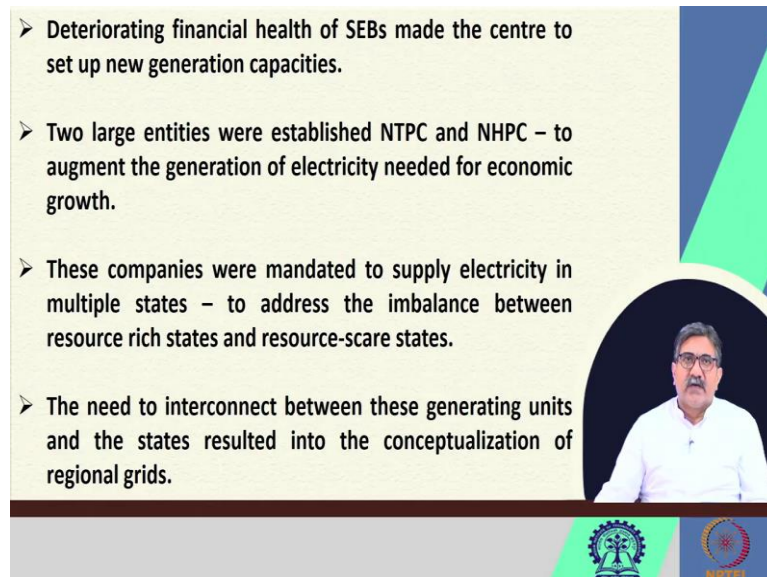


And what started happening is that the electricity boards became all powerful in the sector, be it the generation, distribution, or transmission in all these sectors. And because of the poor management, political interference, and the gap between demand and supply, SEBs could not perform well. And because of that, a kind of demand was made to bring in the reform and dismantle electricity boards.

So that necessary capital can be attracted in this sector. Because we know very well that the electricity sector is a cost intensive sector, and therefore, a lot of capital investment is required. And, because of the poor financial management of SEBs and the political

interference in this sector, the necessary infrastructural improvement in the sector did not happen.

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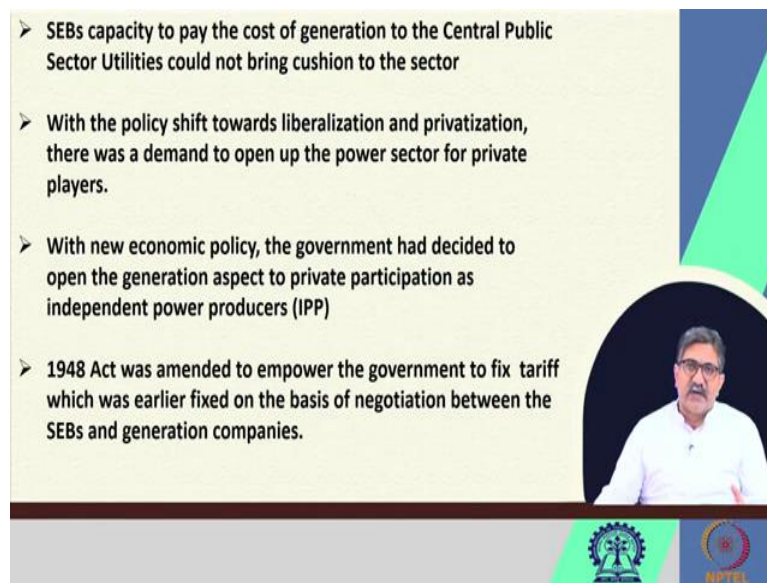


- Deteriorating financial health of SEBs made the centre to set up new generation capacities.
- Two large entities were established NTPC and NHPC – to augment the generation of electricity needed for economic growth.
- These companies were mandated to supply electricity in multiple states – to address the imbalance between resource rich states and resource-scare states.
- The need to interconnect between these generating units and the states resulted into the conceptualization of regional grids.

And because of that, what started happening is that the board started failing to fulfill the requirements which are needed for giving the necessary impetus to the economic growth. And because of that, I was also telling in the last session that the Central Government decided to pitch particularly in augmenting the generating capacity.

And thus, we had seen that two significant entities came into existence to increase the capacity on the generation front: NTPC and NHPC. They have largely been brought into existence to minimize that demand-supply gap. And also, we were aware of the fact that because of regional imbalances, in terms of generation, in terms of infrastructure; a lot of energy insecurity was there, and there was a lot of imbalance, which was there between the regions. And therefore, it was rightly thought that this gap can be minimised with the help of the Central Government and the central own utilities. And thus, there was a need felt to have a sort of grid connection, and with this interconnectedness of the grid, there was stability which was attempted to bring in this sector.

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- SEBs capacity to pay the cost of generation to the Central Public Sector Utilities could not bring cushion to the sector
- With the policy shift towards liberalization and privatization, there was a demand to open up the power sector for private players.
- With new economic policy, the government had decided to open the generation aspect to private participation as independent power producers (IPP)
- 1948 Act was amended to empower the government to fix tariff which was earlier fixed on the basis of negotiation between the SEBs and generation companies.

So, these are the changes which were brought in. No doubt about it that the central public sector utilities attempted to bring in the necessary cushioning to the electricity boards. But then, that was also not enough because largely the distribution was still with the electricity boards. And they were not investing enough in bringing in the necessary change, be it the technical or the other infrastructural requirement. And therefore, whatever arrangements were being done to supply the electricity, it was not getting channelized properly for the benefit of the end consumer.

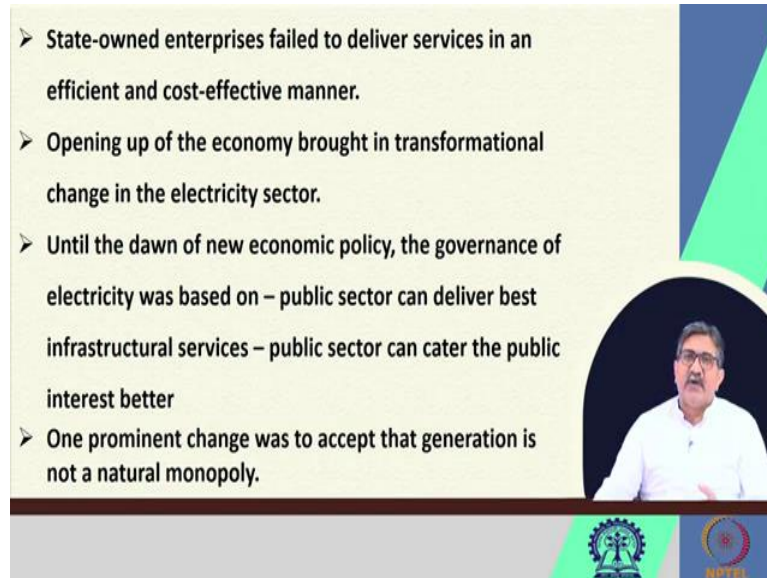
And this somehow aggravated the role of the government; this somehow invited the government to bring in more reform in the sector. And by the time also, there was economic crisis in the country, there was serious problem with loan repayment, and pressure was there from the global organization to open up the market and electricity sector was considered to be one prominent sector where the privatization was advocated very vehemently.

And with this, we have experienced, we have witnessed that in the electricity sector, the government decided to open up, government decided to invite the private participation in generation segment. And with this, we have seen that there are independent power producers which were being invited, and attracted to come and invest in India.

And also, it was suggested that let these independent power producers need not be concerned about the distribution and that they can directly sell the generated electricity to the distribution utility. And distribution utility can make the payment directly to them, so they need to just focus on the very enhancement of the generation capacity. So, that is what was

being done. Also, the 1948 Act was amended to empower the government to fix the tariff, which was left between the SEBs and generating companies earlier.

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The slide contains a list of four points and a video inset of a man speaking. The points are:

- State-owned enterprises failed to deliver services in an efficient and cost-effective manner.
- Opening up of the economy brought in transformational change in the electricity sector.
- Until the dawn of new economic policy, the governance of electricity was based on – public sector can deliver best infrastructural services – public sector can cater the public interest better
- One prominent change was to accept that generation is not a natural monopoly.

The video inset shows a man with glasses and a white shirt speaking. At the bottom of the slide, there are two logos: one on the left and one on the right.

And obviously, we can understand that, because of the kind of vertically integrated structure, it was very difficult to have a very professional approach in tariff determination. And this leads to a sort of inefficiency in the sector. The SEBs, which was completely owned by the state failed to deliver the required services; it failed to fulfill the expectations of the industry, of the consumer.

And also, a biggest issue was with regard to revenue generation. Because somewhere, the SEBs were not in a position to collect the charges from the end consumer either because of the lower tariffs, which has been fixed or maybe because of the artificially lower tariff which has been assigned for certain sectors, for example, agricultural sector.

And then which costed very usually to the whole segment, because we need to understand this very categorically that electricity sector thrives and survives on the basis of the performance of the distribution segment because the revenue gets generated from the efficient handling of the distribution segment.

And this is something which was the reason for introducing the reform with the opening up of the market in the year 1991. And 1991 brought in a new age altogether in this sector. It has to be seen; it has to be analyzed that how that change has done good to the sector. No doubt about it that one important and prominent change, which was done, is the involvement of the private sector, involvement of the private capital in generating unit.

So, now, in generating segment, we do have the participation of both private as well as public sectors. So, this was a kind of important change and therefore, the earlier understanding that the electricity sector is somewhere it is to be seen as a kind of natural monopoly of the state where a state alone needs to get involved in the generation that was somewhere being diluted.

And I would not say that, when India started with this understanding on generation being a natural monopoly, India was kind of experimenting completely different from what was going at the global level right in the mid-50s of the last century. This was the practice in developed countries as well as leading developing countries where state used to control the generation. But as the time progressed, as the demand increased, and as well as the kind of unprofessional approach of the government agencies, it was realized that this monopoly needs to be revisited.

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- Taking cue from change undergoing at the international level, the government proposed unbundling, corporatization and privatization of power utility.
- Policy and regulatory changes were introduced to achieve better fiscal and operational management in the sector.
- Private investment started taking place in power sector, particularly in generation segment – Independent Power Producers

And because of that, only the Government of India also decided to bring in a kind of corporate culture in electricity boards. And on this premise, government proposed a sort of unbundling of the power sector, wherein not only private capital was invited, but also it was suggested that whatever was under the control of the government, that segment also needs to be completely corporatized.

The reason being that with the new kind of culture needed to bring in reform in the sector. It is essential that the very work culture, the very approach, is needed to be transformed. And therefore, it was categorically decided that regulatory changes are to be brought in, and with that, some kind of fiscal discipline needs to be introduced.

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➤ Government of India Resolution – Policy on Private Participation in Power Sector – October 1991

➤ Generators from private sectors were invited to submit unsolicited proposals to SEBs

➤ Allowed the private sectors to supply and distribute energy in specified area – even without owning a generating station

➤ Foreign ownership up to 100% was allowed

➤ Long term PPA offering a guaranteed return on equity of 16%

The slide features a video inset of a man in a white shirt speaking. The background is light green with a blue and green geometric design on the right. Logos for IIT Bombay and NPTEL are visible at the bottom.

And this is what kind of, you may say, a change, has been brought in the power sector with the advent of the globalization drive in our country. In fact, when you look at the resolution passed by the Government of India in the year 1991 when the government was discussing the new economic policy in a very aggressive way so that the necessary economic growth can be reestablished, can be re-channelized in order to not only uplift the larger mass from poverty but also to give economic growth, a new lease of life.

And in pursuant to that, this 1991 resolution of the Government of India played a significant role, where it was suggested that private sectors can very well suggest the proposal without involving SEBs, without soliciting electricity boards. And then, it was also suggested that private sectors can very well get involved in supply and distribution of electricity even if they are not owning generating units.

So, in a way, you can very well look at it that the government in a very methodological way, in a very strategic way, decided to open up the market and all these segments in this sector. Along with that also, government has decided to invite foreign ownership of up to 100 percent in this power sector.

And along with that, there was an important concern that if you invite the private players, if the private participants are joining hands, then how they will become sustainable? What will be the kind of economic model for them so, that they need not fear about the loss?

And for that, it was suggested that let there be a long-term power purchase agreement, which shall ensure 16 percent return on equity. So, this was in a way to give a confidence to the

private players that you, please come, invest in the sector. And as far as your investment is concerned, there is a guarantee that you will be not losing in your business, you will be going with some kind of a profit, which obviously, will be a kind of regulated one in terms of what shall be the kind of zone which is to be seen.

That is what is important to look at, and this is I would say that this was an important promise which was given in order to build the confidence of the investor in this market.

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- The National Development Council 1993 – recommended
 -
- Power sector to be re-oriented to cater the interest of consumers
- State Government must stay away from the management of SEBs – to ensure technical and financial autonomy – so that they can function as corporate bodies
- Tariff fixation should be connected with generation and distribution cost
- Punitive measures for unauthorized use and theft

Moving further from 1991 policy, when you look at the recommendation of the National Development Council, which was again a body given with a responsibility to advise the Government of India and all the States. Where there was a sort of collective responsibility, collective decision-making has been taken that it is important to cater the interest of the consumer. Power sector must be delivering its services in such a manner so that consumers' interest must be taken care of.

Now, when you talk about the consumer interest, let me also highlight this very categorically that it is for both categories of consumers, the residential consumer, as well as the industrial or commercial consumer. Because as I said in the last session, that access to electricity is not only about economic growth but it is also about uplifting the living standards of individual. And therefore, any discussion on the interest of consumer must not be only for the industrial consumer or commercial consumer but must be for all the set of consumers.

And also, it was decided that the State Government needs to stay away from the management of the electricity boards. The reason being, it has been witnessed in 1970s and 1980s that

because of furthering of narrower political interest, the government was in a way not allowing the electricity boards to function in a very professional manner.

And that was something which brought a very heavy cost on the entire supply chain segment. And that is the reason why it was suggested that let the government stay away from the functioning of the electricity boards. Let the electricity boards be autonomous in technical aspects as well as on the financial issues.

Because unless and until we ensure that autonomy, the technical and commercial losses cannot be addressed, which is an important area of concern as far as efficient functioning of the power sector is concerned. And financial autonomy, as I said, is another important area because that is what is the basis of a building a very robust mechanism, building a very kind of fertile mechanism for the sector. Because unless and until there is a sort of inflow of income, it is very difficult to have a very sustainable model of the industry, a sustainable model of all the players which are participating in the sector.

And that is why it was suggested that let there be a tariff fixation connected with distribution costs and the generation cost. So, it was the cost factor which was brought into existence. The reason being on earlier occasions; cost was completely sort of overlooked, particularly for those sets of consumers, which were, in a way, constituting a vote bank for the political parties. And that is why it is suggested that let the cost, be it the generation or the distribution be important criteria for the determination of tariff.

Apart from that, it was also realized that because of unprofessional approach of the SEBs, because of a sort of hand-in-glove approach of the officials, there was a big issue of unauthorized use of electricity or theft of electricity, and that was causing a tremendous revenue loss to the sector. And on that premise, in the year 1993, the development council very rightly suggested that let there be a strict measure, stringent measures need to be implemented in order to eliminate unauthorized use and theft. Obviously, as we progress in our lecture, I will be discussing in detail what are the provisions which are there in the electricity act and how the new law has attempted to address this malleus.

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- Orissa (Now Odisha) became first state to experiment the structural and institutional change in the sector.
- Agriculture sector in Orissa was not consuming considerable share of energy (only 10%), the reform was introduced with the enactment of Orissa Electricity Reforms Act, 1995
- Haryana and Andhra also unbundled the SEBs – but did not privatize distribution segment – as was done in Orissa

Now, when this reform was suggested, Orissa became the first state to adopt this reform. One reason Orissa was considered a region to experiment this change was lesser dependency of the state on agricultural sector. It was less than 10 percent consumption of energy in agriculture sector in Orissa made this state to be a kind of experimental ground for seeing that how the reform will work.

And that is the reason, you see, in the year 1995, Orissa enacted a law that is Orissa Electricity Reforms Act. And it was followed in other states as well, in Haryana and Andhra, where it was decided to unbundle SEBs. It was decided to divide electricity boards into different segments depending upon considering the very set of activities which was being carried out that is generation, transmission and distribution.

But obviously, distribution was not privatized in these two states. The reason being that distribution segment closely interacts with the consumer. It is the end consumer, particularly the retail one or the one who I may say matters for vote bank politics; they are directly or closely interacting with the distribution utility (discoms). And therefore, the government decided to keep that portfolio to itself.

So that, if any kind of anger was shown by the people, any kind of dis-approval, any kind of displeasement, which was shown by the population, then that can be addressed by stating that the state is still involved in the distribution sector.

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- Mega Power Policy, 1995 was announced to give more concessions to power plant with a capacity more than 1000 MW
 - 10-year tax holiday – first fifteen years
 - Exemption of custom duty for imports
 - Speedier clearances of the proposals

Now, moving further, I am giving you this series of events in order to make it very clear that how we have raised up to the 2003 Act. And that is why I am giving this detail to you in module one itself. Now in 1995, the Government of India has come up with the mega power policy.

Now, this mega power policy was announced again to attract investment in a large power plant, particularly the thermal one, where the capacity is more than 1000 megawatt. And what was the promises, which were being given? It was said that okay, those who will be coming and investing in Mega power project, they will be getting a sort of tax holiday for good 10 years. And that will be something which will be adopted in phase-wise. And then there will be an exemption of custom duty for the imports, whatever equipment the industry would be bringing it from the outside country.

They will not be charged any custom duties. So, through this, there was sort of alignment, which was advanced by the government that come and invest in India. And the government will be facilitating the whole process. And please take note of this that all these were being promised, not because of this very fact that electricity is needed for bringing a necessary thrust to the industrial growth, but it was also needed for other socio-economic benefits.

And that is why these concessions are to be seen as a concession not only for industrial players but also for a common man of the country. It would be unjust to say that this kind of concessions, which are being extended by the government, is only for the big industries. Because at the end of the day, the product is going to be made available to both industry as well as to the common man. And for this also, the government suggested that let there be

speedier clearances of the proposals which the private parties would be submitting in this regard.

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➤ Common Minimum Action Plan for Power, 1996 was announced by the Ministry of Power in consultation with the States –

- Corporatization of SEBs – initially with public ownership – then gradually complete privatization
- Efficient metering and energy audits
- Creation of State Electricity Regulatory Commissions
- Tariff – with a principle of – earning a return of capital employed of at least 3%
- Cross subsidy to continue – however no user should pay less than 50% of average cost

The slide features a video inset of a man in a white shirt speaking. At the bottom, there are logos for the Ministry of Power and the State Electricity Regulatory Commission (SERC).

1996, again, working on this very agenda of privatizing the sector, the Government of India adopted this common minimum action plan for power, which was announced by the nodal ministry, Ministry of Power. The Ministry of Power is the nodal ministry for the sector.

And the best part was that this common minimum action plan was announced in consultation with the states. So, by that time, there was a sort of realization even on the part of the states that we need to come forward and converge on the issues of reform. And please do take note of this very fact, that electricity being in the concurrent list, it is not only desirable to take the states on board, but it is also one of the requisites in order to ensure the success of the reform.

If the states are not brought in on board, if the states have not agreed to it, then the initiative of the central government would not see the light of the day or even if it sees, it will be in a very fragmented way and it will not bring the change in a comprehensive manner, what is truly envisioned.

And that is why, this common minimum action plan plays a significant role. Because the states came together, they reiterated this very fact that let electricity boards be corporatized. Obviously, the idea was suggested that let there be no privatization at the very first instance, obviously, in order to avoid a sort of anger from the public, as well as to test the water that how private players operating in this segment. And that is why it was decided that let the

unbundling happen, let it get corporatized with public ownership at the first instance, right at the beginning, and gradually, they can be made privatized.

Now, corporatization here means that they will have a separate identity, independent of the State Government, and that identity will ensure the accountability, that identity will ensure the liability, that identity will make them more accountable to the people on their functioning.

And that is what corporatization would mean for our purposes; what we say in legal terms is giving a status of the juristic person to the corporate body, which will have independent existence from the owner, from the one who created it. Other important thing which was suggested was efficient metering and energy audits. Because earlier, the metering was not made mandatory.

And because of that very fact that a lot of privilege was happening. There was no proper collection of charges from the end user. And that was causing a huge loss of earning for the distribution utility. And in turn, the money was not being paid; the cost was not being paid to the generating units. And that is why it was suggested that let there be efficient metering be done.

And for that purpose, it was suggested that let there be a regulatory commission created at the state level. Now, this is an important development. Why? Because it was now decided in 1996 that we need to set the rules of the game, which will be done by the regulatory commission, and then let the players play as per the rules.

And if they breach the rule, then the regulatory commission will take necessary action. So instead of becoming the owner of the rule, as well as the player of the game, what was suggested that let the rule be made by an independent body, and all the players adhere to those rules. And with this design, it was suggested that let there be creation of a State Electricity Regulatory Commission, which should be given the responsibility to determine the tariff in a very objective manner, which shall be given a responsibility to develop the market.

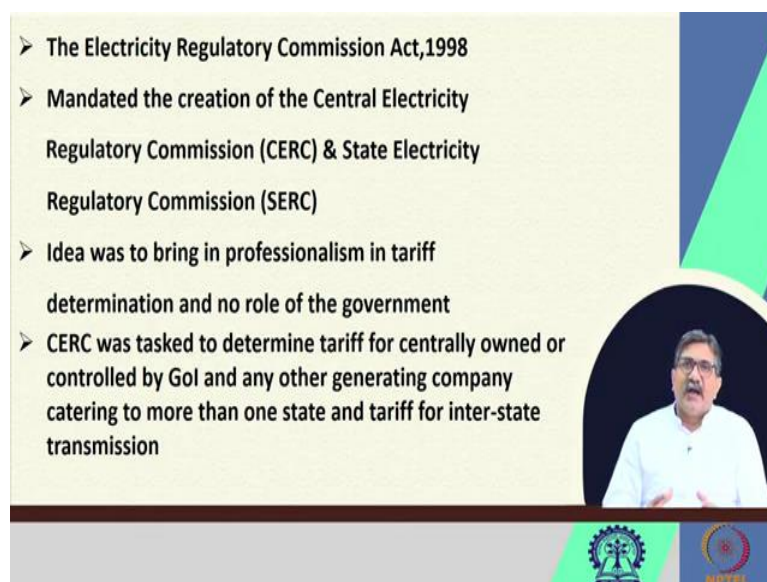
So, these were the suggestions which were being given. And 1996, it was also suggested that let there be a tariff determination done on the basis of a principle that the investor must get at least 3 percent of return on capital.

And again, I am iterating and emphasizing that this is needed, badly needed in order to infuse the confidence in the investor. And that is why it was decided at that point of time. And one

way of ensuring this return was asking the user of electricity, the consumer of electricity, to pay at least 50 percent of the average cost. Because it is known fact, which I will be discussing in detail in later part of the course, that it is not that all consumers in the power sector pay the same tariff. Industrial consumers, they pay higher tariffs than the residential consumers or consumers in agricultural sector.

And generally, the industrial consumers or commercial consumers, they pay also on behalf of these consumers. And that is what we know as cross subsidy. So, it was decided that let the cross subsidy continue because of the paying ability of the other set of consumers. But at the same time, the residential consumer or the agricultural consumer should not be asked to pay a sum, which add no value to the whole revenue generation model. So, at least it was suggested that they should be paying at least 50 percent of the average cost.

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- The Electricity Regulatory Commission Act,1998
- Mandated the creation of the Central Electricity Regulatory Commission (CERC) & State Electricity Regulatory Commission (SERC)
- Idea was to bring in professionalism in tariff determination and no role of the government
- CERC was tasked to determine tariff for centrally owned or controlled by Gol and any other generating company catering to more than one state and tariff for inter-state transmission

And with this, what we have seen, is the introduction of a new law giving a statutory recognition to the Electricity Regulatory Commission in the year 1998. And this commission created the two institutions, one at the Central level, other at the state level. At the central level, it is Central Electricity Regulatory Commission and at the State level, it is State Electricity Regulatory Commission. So, these two Commissions came into existence and they have been entrusted with the responsibility to bring in necessary professional changes in the sector.

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- CERC introduced Availability Based Tariff, Electricity Grid Code, Guidelines for transmission licensing, Open Access, Fixing Trade Margins
- Measures have brought transparency in tariff making process, discipline in Grid, rationalization of distribution tariffs, SERC establishing consumer complaint handling system
- Notwithstanding, the sector continued to face challenges due to poor financial positioning of SEBs, absence of reform in distribution sector, AT&C Loss



So, what we have seen is that, in the 1998 Act, it was introduced; it was brought in to create an independent body known as Regulatory Commission. Now, this Regulatory Commission was been entrusted with responsibility to bring necessary functional autonomy to the sector.

Functional autonomy in a sense of that, what shall be the primary objective, what shall be the fundamental criteria for tariff determination so that undue interferences not to play a role in the determination of the tariff. And in order to advance this, Regulatory Commission has suggested that let the tariff fixation be based on an availability-based tariff which involves the fixed cost, which also considers the fuel cost as well as unscheduled interchange, which has been brought by the utilities.

So, with this availability-based tariff, what was suggested that, the cost of establishing a generating company is to be somehow made inbuilt in the tariff fixation. And that is what is known as a kind of fixed cost in this process. And then fuel cost which will be sort of changed one depending upon the fixation of price on the fuel on which the generating companies are running.

And then in order to ensure a sort of grid discipline, it was also suggested that if any kind of excessive withdrawal of electricity takes place, then necessary charges are to be taken up. So, this mechanism was suggested in order to bring the discipline and in order to also recover the cost in a very scientific way.

In addition to that, it was also suggested that let there be electricity grid code for maintaining the discipline in the sector, that what shall be the injection of electricity by the generating companies in the grid and what shall be the withdrawal by the utilities. So, grid code was

suggested to bring in uniformity, bring in certainty in that approach. And apart from that, it was also suggested that let there be a guideline for issuing license in the transmission sector.

So, the one who operates in the transmission segment must have a clear idea about the expectation of the market. And then open access was also introduced with an idea that let the market decides the pattern of supply and demand. And perhaps, it was visualize that this kind of pattern will bring in necessary tariff valuation in the interest of the consumer.

And it was also decided that there shall be a sort of rationalization of tariff at the distribution level. And for furthering the interest of the consumer, Regulatory Commissions at the state level was required to establish a complaint mechanism to look into the complaint lodged by the consumer.

Though post 1991, the sector experienced considerable number of changes, be it policy, be it regulatory, be it institutional, but then, the sector did not come out of the problem which it was confronting in the pre-1991 era. And perhaps, because the reason that there was lack of commitment to bring in professional approach in the functioning of electricity boards. And as I said that it was the functioning of the electricity board on which revenue model was dependent.

And therefore, the suggested change could not bring the desired result. The transmission and commercial loss continue to give challenges to the sector. And thus, it was decided that a comprehensive reform is needed in the sector. And because of that, we now have the Electricity Act of 2003. Thank you very much.