Introduction to Law on Electricity
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Lecture: 05
Energy Security

Welcome to all the learners. Now, we have studied in the first module that how the law has evolved over a period of time and how the law has shaped up the development of the electricity sector, both at the pre-independence stage as well as at the post-independence stage.

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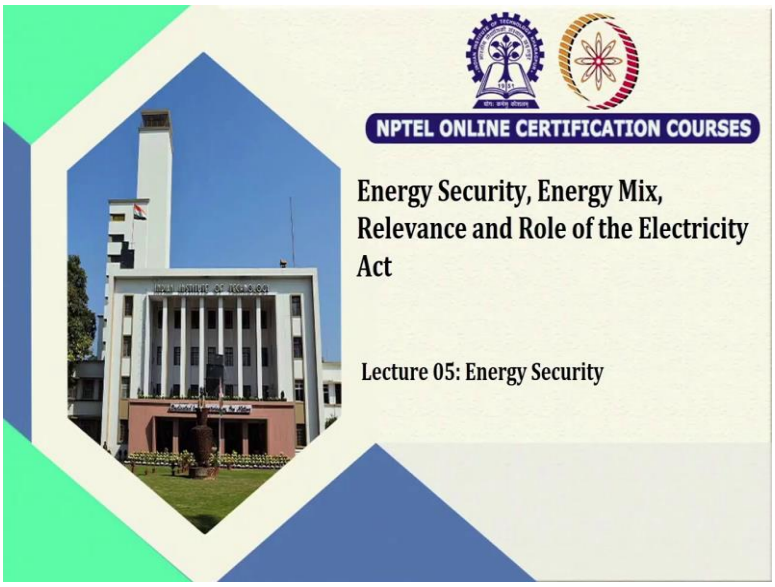

Now, we will learn certain important ideas and important areas which influence the growth of power market and also shape up the law and policy measures. And after this, we will be understanding the overview of important provisions of the law dealing with electricity.

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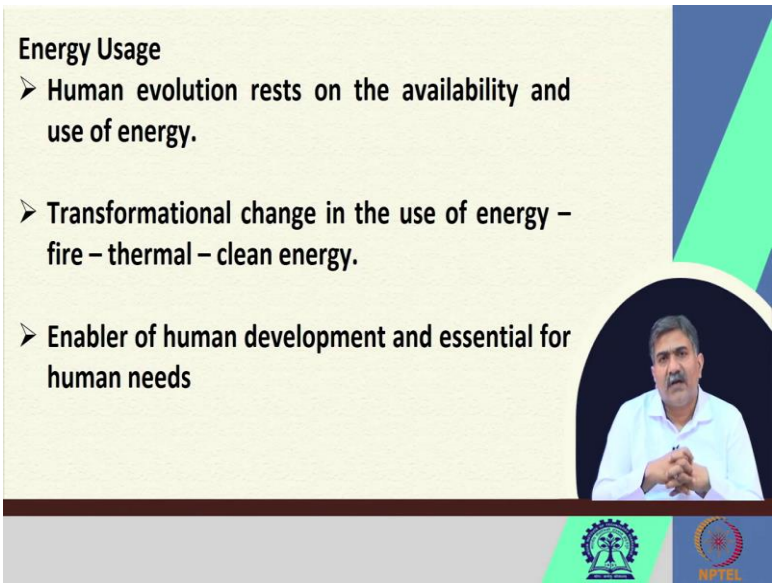

So, today, we will be studying energy security. Energy security is an important point of deliberation for all learners and practitioners working in the area of energy law. Right from the beginning of human civilization, energy played a significant role in guaranteeing better living to human beings.

And therefore, it is not an exaggeration to say that energy use and the learning to make better of that energy use has immensely contributed to making life better and purposeful. So, initially, the whole discussion started on, or the whole experimentation started on that, what kind of energies, what kind of sources which shall be exploited for generating energy. And as we know very well that is largely divided into two kinds of sources primary and secondary.

In the secondary where processing is required to convert the fuel into a usable product. For example, thermal electricity, electricity from thermal sources or electricity from hydropower plants. So, in the beginning, the very foundational framework was laid down on the basis of conventional sources of energy, I would say. Necessary technological developments took place that how the sources such as coal, lignite, gas, oil can be used for generating electricity.

But over a period of time, it has been experienced that these sources are also adversely affecting the environment. They are causing degradation, and thus, a need was felt to explore renewable sources of energy. And therefore, any talk on energy security must be taken up;

the discourse must be designed, and discourse must be framed that how effectively and efficiently we can switch to renewables. And that is what, the agenda of energy security is getting driven these days.

Because it is not only about pulling in sources for driving the economic growth; it is not only about ensuring the availability of electricity for either upscaling the manufacturing units or just to ensure the supply of electricity to the industry. It is also connected with human needs. In today's context, you cannot imagine educational institutions being run without electricity hospitals being run without electricity. Many such social upliftments connected with the availability of electricity, and that is why energy security must deal with these issues.

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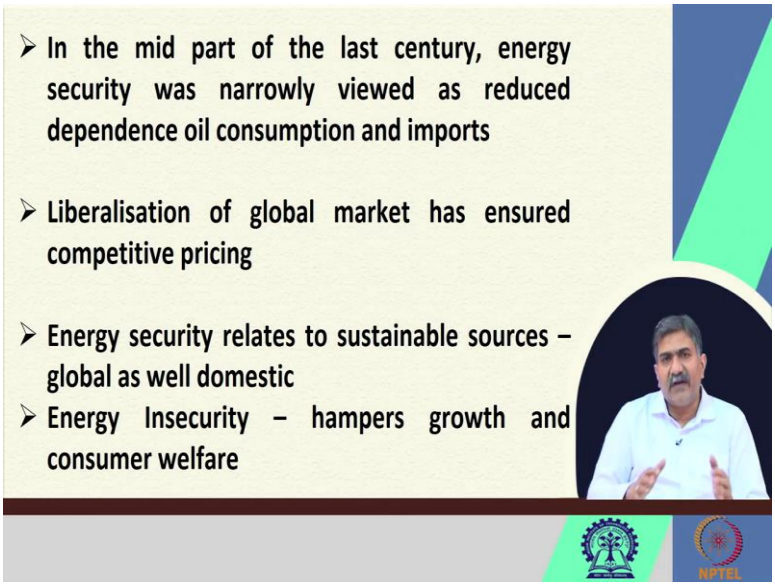

Earlier, there was an understanding that when you talk about energy security, it is all about minimizing the dependency on the import of oil and gas. That how as a country, you can channelize the sources so that there shall be minimal import. The reason being that the country has to pay for oil and gas, which is being imported from other nations. So, how to minimize it. So that foreign exchange cannot be spent on such resources.

But then, the understanding of energy security has witnessed a paradigm shift; I would say, largely because of technological innovation making conventional fuel better in terms of calorific value and lessening the damaging effect on the environment. And on the other hand, technological upscaling in the area of renewables so that both sources can become competitive. So, energy security in the present context is not only about how you are reducing the dependency on the import. It is also more about how you are tapping resources

which are domestically available. So, there is a need of giving a comprehensive policy overview on energy security.

And, if there is insecurity, then obviously, it would have a direct impact on the trajectory of growth. If industries are not getting reliable and quality supply, it will ultimately cost very heavily on the nation. And it also connects with the welfare of the consumer. Because, as a consumer, one expects to get quality supply and uninterrupted supply. So, unless and until all resources have been tapped, it is very difficult to attain that security, and it is very difficult to attain that sort of independence, which is needed for developing this market.

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Now, before I move to the Indian position, I want to highlight on the very aspect of energy security being dealt with at the global level. Sustainable Development Goal is a collective effort on the part of all countries to make the planet better for human beings. And therefore, a kind of blind drive towards development is to be avoided. And that drive for development must be considered; that drive towards development must keep the welfare of human beings at the core. And this is a kind of commitment which the nations together, they have taken for the larger welfare of mankind, I would say.

Prior to this, there was a Millennium Development Goal which could not ensure the targeted result because of inner end deficiency of considering the matter of right as a matter of charity, I would say. What is supposed to be considered to be a matter of right has been given a sort of welfare flavor.

Now, there is an improvement from Millennium Development Goal that whatever lacunas were there, whatever shortcomings were there, now, in Sustainable Development Goal, it has been achieved. It has been anchored the main theme is a human right, that how human rights need to be kept at the core of any talk on development.

So, Sustainable Development Goal gives a sort of direction to the nations that in your developmental plan, you do not only think about economic growth. But then, the same must also be taken up considering the rights of an individual that how economic growth can further the rights of the individual. And that is what is being suggested by laying down the operational principles under the SDGs.

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Now, in this sustainable goal, you would find that energy features very prominently. Goal number seven of Sustainable Development Goal says that by 2030, there shall be universal access to affordable, reliable and modern energy services. And it uses the broader term' energy services', meaning thereby does not confine only to the availability of electricity for the purpose of industry, for the purpose of agriculture. It goes beyond, where it is forecasting how it can be made available for other purposes so that country or individual minimizes its dependency on conventional fuel. It also says that increase substantially the share of renewable energy in the global energy mix.

To date, we find that the larger share is of coal-based electricity, which is certainly not very sustainable because it causes pollution. And economic growth with environmental degradation does not have a very meaningful outcome for society. And that is why what it

says is that what we need to work on is also along with energy efficiency. So, it is about consumption, but it is also about the quality, and availability of electricity.

And because it requires sort of technological intervention and every country is not in a position to invest, to get that technical know-how, very realistically, 2030 suggests that the answer to this is international cooperation. The ones who have already gained sufficient knowledge, they must pass it on to those countries which are not having enough resources to invest. Because pollution is one reason and a cleaner environment is other reason, ultimately is not going to make the planet safe. The whole planet has to be considered as one unit for the purpose of a clean energy drive. And that is why international cooperation is a remarkable feature of SDG.

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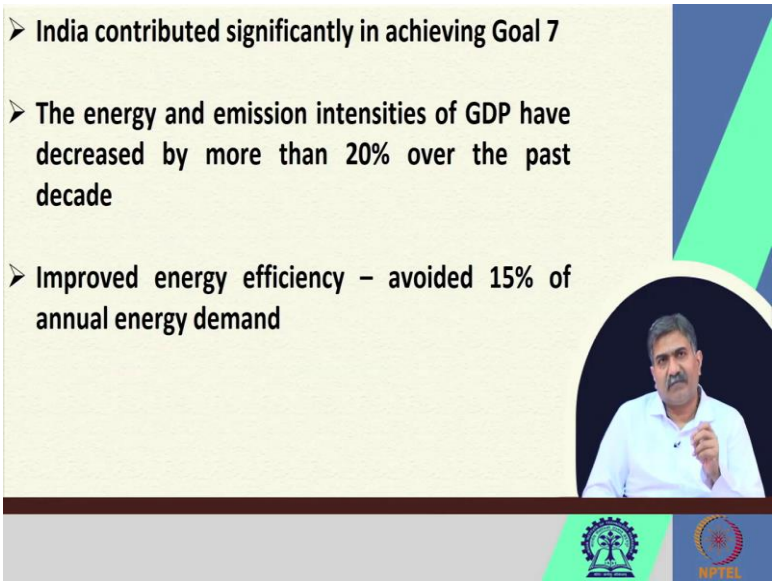

Now, India has its own commitment. We know very well that the Government of India has made the commitment to generate electricity through renewables up to 175 gigawatts by 2022, in that a substantial portion is solar. And in this, you will find that the energy intensity of GDP has decreased by more than 20 percent over the past decade. So, in a way, India is working in the direction so that cleaner energy will have a larger role to play in time to come.

And the same is the case with the energy efficiency. You must have heard a drive of the Government of India and individual state governments also, where they are encouraging people to switch to LED bulbs, and LED tube lights. Now, these drives attain a very larger objective, and they make use of energy in a very efficient way.

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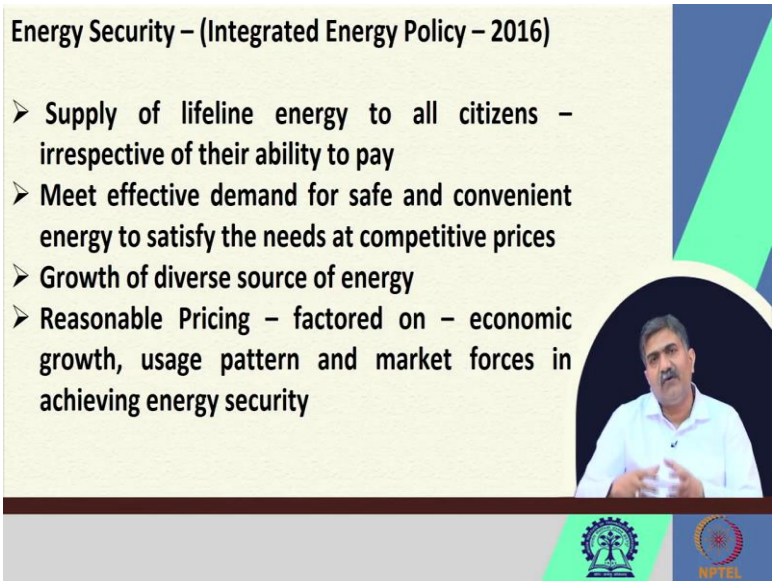

When you look at how energy security has been conceived in India, there is a 2016 integrated energy policy that is what we look at, where it says that it is something which is so fundamental to lead a meaningful life. And that is why, it says to supply lifeline energy to all citizens, irrespective of their ability to pay. And that is why, if you can recall, I was saying in earlier sessions that electricity as a product must not be seen only for the purpose of industrial growth or economic growth. It has much larger target to achieve. And that is why, it categorically says, it should be available to all and to all at affordable prices.

And that is the reason why it says that how to make it affordable only when you increase the competitiveness in the market. So, that is why it says that let the demand be put up in such a way so that more and more players can come into the market and they can make the power market competitive, which will certainly help the consumer. And this has also been targeted considering the exploitation of all the resources for the production of electricity.

So, it has been suggested that let there be the exploration of all the sources, not only the conventional one, which has been set up in early part of the last century, I would say, and then it graduated after gaining independence. So, what is important, is that let there be reasonable pricing. And that is to be looked into, that is to be based on how the market is growing, what is the pattern of the use by the consumer, how the market is facilitating the growth because all these are important for achieving energy security.

If market facilitates the growth of renewables, then there would be investors interested to come forward and bring out pathbreaking technology in the sector. So, all these are interconnected. It is important to supply electricity to all. At the same time, it should be seen

that it is at a reasonable cost. Reasonable cost is possible when you look at the competition, and competition will come in only when you have an investor-friendly regime. And this is what is needed for securing sustainability in the sector.

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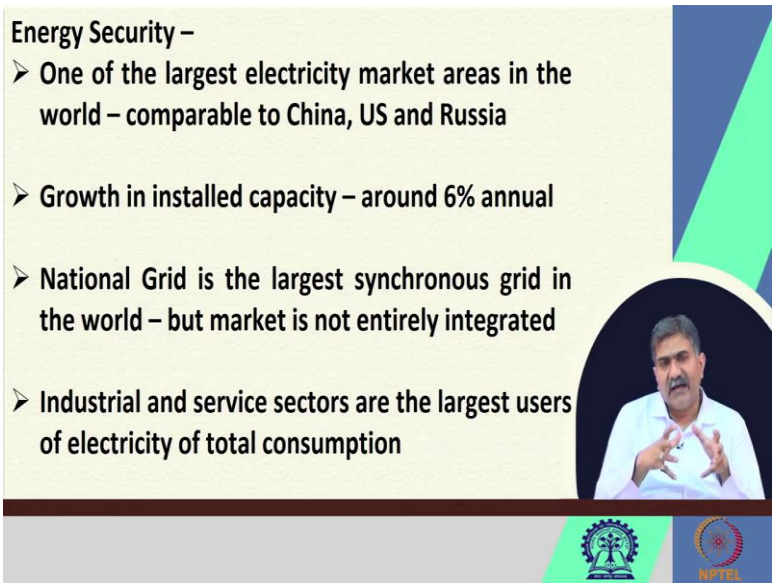

Now, when you look at India, we are progressing very well on the economic front. And one of the reasons for doing well is the growth in the economy. That annual growth has been somewhere in 7 to 8 percent. Obviously, during COVID, it has come down, but then I am discounting this period because of the unprecedented situation. Overall when you look at the economic growth of India, you would find that it is in the range of 8 to 9 percent.

And when you look at the related statistics, you also get the conviction, conviction in a sense that electricity consumption when you look at, when you look at the electricity market, the way it has been growing, it is being compared to China and the United States. So, one factor is certainly population. Because we have a large population, we are looking at it in that way, that larger the population, higher the demand of electricity. Along with that, there is also a factor of industrial growth. And that is why you find that annually the installed capacity is growing in the range of 6 percent.

And then, the very agenda of creating one grid for the entire country has also been fulfilled. We will study more about the grid in later classes. But then, the establishment of the National Grid conveys this very plan that the reason which is not having enough generating units. They can very well get the electricity from the surplus region, the region where the electricity is being generated in surplus.

And this would certainly minimize the dependency also on oil and gas. So, if we have a well-integrated network, transferring electricity from one region to another will be very convenient. And, when you look at the consumption pattern, you would find that the industrial and service sectors, they are consuming the highest in the country.

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Now, on energy security, you would find that the 2003 Act also made in necessary changes in order to make the country lesser dependent on imports and also to promote the exploitation of renewables for the production of electricity. So, necessary structural, and institutional reform has been given legal status under the 2003 Act. And what you find that, in order to make a pathway that how the whole energy policy should get governed, how we can achieve energy security because there are multiple sources, Central Electricity Authority has been suggested to make the plan for that same.

So, there shall be a sort of integrated approach. Integrated approach because of the very fact that electricity as a subject fall in both central and the state's jurisdiction because it is there in the concurrent list of the constitution. And in this regard, regulatory bodies are also going to play a very phenomenal role because they do have a role to communicate a language of confidence to the investor, and that is possible only when fairness becomes, justness becomes, transparency becomes the driving theme of the game.

And regulatory bodies are interested with this task that tariff formulation, for example, must be done in a very fair way. And we have studied that how the 2003 Act formally institutionalized unbundling of the vertical structure, which was prevailing in the generation,

transmission and distribution segment. So, reform in the market is also taking us towards energy security.

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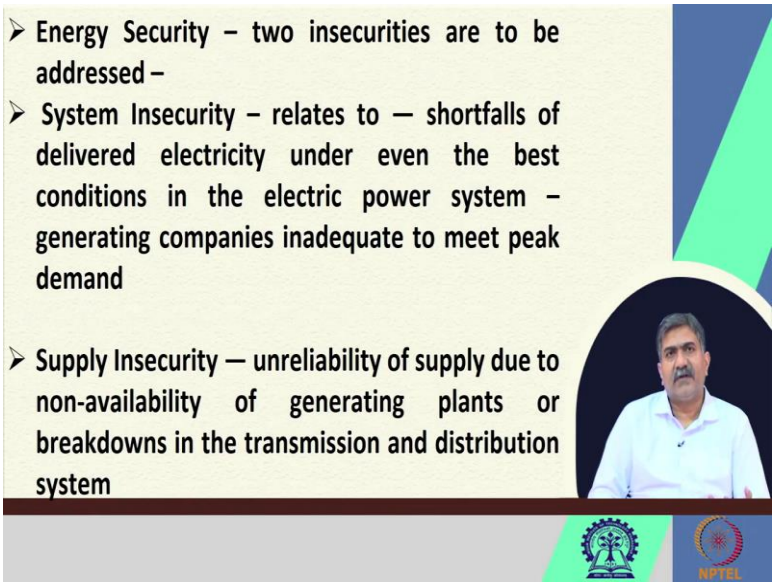

Now, there are two kinds of insecurities that you find in this sector. One is system insecurity, where even if we have a good power system in place, the infrastructure is not such where the generated electricity is reaching to the consumer. So, there is an issue of infrastructural deficiency with regard to transferring electricity. So, there is an absence of electricity when there is peak demand.

And the second one is supply insecurity, where even if there is a generation, it is not being transferred, which may be because of the poor infrastructural establishment which is there at the transmission end or at the generation segment. So, these are two important insecurities.

One, where there is some deficiency in the system, demand is there, but then supply is not there. Second is, we do have an installed capacity, but then the generating units are not able to make good use of it because of the absence of proper network. And that is also the reason for technical and commercial losses, which is very high compared to global standards in India.

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So, when you look at the significance of energy security, you find that to achieve this is important if we have to compete globally with others. We have to minimize our dependency on these resources, which we are getting from outside. Then, necessary skill is needed, necessary skill on the technical side, and necessary innovation is needed. And any investment in this will have a direct bearing on the generation of employment for the population. And then energy security is also needed to expand the services in other sectors.

For example, the Government of India is advocating for electric vehicles in a big way. In a way, what is happening is that the Government of India, through its policy and planning, is minimizing the use of crude oil in the transport sector. But then, success would be achieved only when there is sufficient investment happened and which needs a sort of sectoral integration. So, if you want electricity to be the fuel for our transport, we need to work on the infrastructure accordingly. We need to plan tapping of the resources in a very effective manner.

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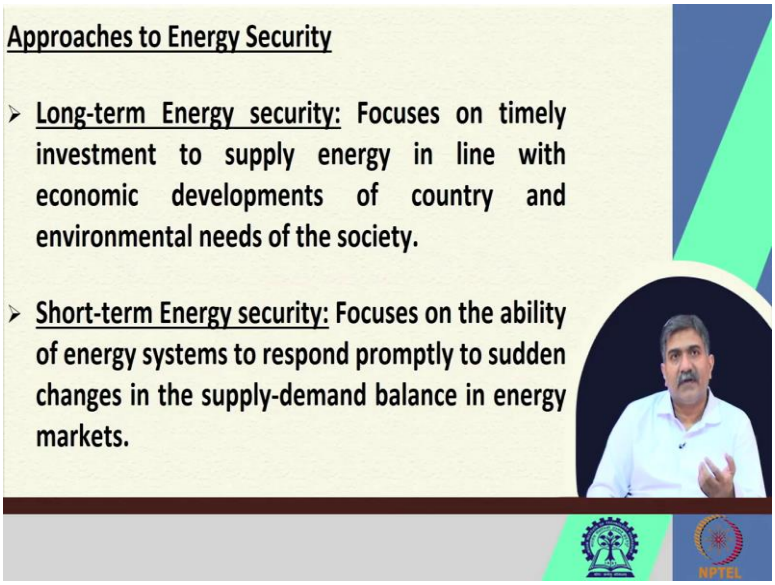

There are two approaches what you find for energy security. One is long-term, the other is short-term. Long-term is about focusing on the investment to supply energy in line with how the economic progress is happening in the country. But then, as I said, this must not be at the cost of degrading the environment.

If we are having enough electricity supply, then, that supply is going only for our medical care, only for supplying in the hospital because we are getting more and more patients because of air pollution, water pollution and all. Then, that is really not serving any purpose for society. So, it is important that enough electricity should be produced, the required amount is to be produced, but then that must be from cleaner sources. So that there should not be any cascading effect.

And the short-term is about ensuring a sort of supply-demand balance. Right now, in India, you would find largely, it is going by the supply factor. There is a need to build robust demand-side management for the growth of this industry. So, we need to keep in this mind long-term and short-term approaches for energy security. Thank you very much.