

Speaking at "Energy Transitions: The Global Challenges
and opportunities", Delhi

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I am delighted that you have taken the responsibility of Chair of TERI, Secretary Shri Sushil Kumar, Secretary Rajeev Kapoor, Additional Secretary Shalini Prasad, in fact, it's quite amazing this must be the only organisation that can get all my departments on one stage and one page. Particularly, in a time where Sushilji is struggling to sell coal and Rajeevji is basking in the glory of Rs 2.97 per share tariff on solar. Shalini Prasad in between is trying to set the policy balance in the two. Lord Adair Turner, a warm welcome to you sir, Dr BM Suresh, Mr AK Saxena and my own, very own dear friend Ajay Mathur, somebody I miss in the Ministry as DG of Bureau of Energy Efficiency, somebody who helped me I think create a revolution which the world has watched as we move towards serious efforts to bring energy efficiency centre stage to our National Energy Policy. And I think somebody who is steering TERI through hard times sometimes, come back and retain its, regain its old glory.

Distinguished ladies and gentlemen, I am sorry I was a little late. We are in a midst of elections. And I was actually slated to fly to Uttarakhand, we have just delayed it a little bit, the last day of campaigning there but I did want to be here amongst all of you and thank TERI and the Energy Transitions Group for the very good work that they have done. I believe you are going to discuss in the course of the day important issues about the future of energy and the global challenges that the world is facing. Don't worry, we in India don't look at this as a challenge. We look at this as an opportunity. Next time around maybe you could look at

converting the topic of today's discussion to the opportunities and bright future ahead of us.

But clearly, renewable energy is an area whose time has come. And every idea matures over a period of time. In fact, I was reading Robin Sharma who had said and I quote – All change is hard at first, messy somewhere in the beginning but gorgeous at the end. And in some sense, our transition, our own journey towards a cleaner environment, a better future for the next generation has been somewhat similar. We have had tough times. We have had times when there was a lot of consternation that we were buying renewable energy very expensive, it will cost the people of India very dear. But I am delighted that Prime Minister Modi had the courage of conviction and his bold approach knowing full well that in the interests of the nation, in the long run, we have to transition to a better and cleaner energy mix. Of course, many people can't think beyond the short term, they usually mix up long term benefits with short term pain. And I am not referring to the other issues around which Indian politics is revolving off late.

But very clearly, it was an article of faith, as he once put it when President Obama was here. And I think a news channel had posed a question to him in the presence of President Obama that what happens if American policy changes or the rest of the world doesn't fall in line with the noble objectives of climate change. And I still recall Prime Minister Modi saying that for him personally, for his government and for the people of India protecting nature, conserving nature is an article of faith. It's not something we do because somebody else tells us to do it, it's not something which is done under any pressure, under any force, under any dominance. And I am delighted to share with you that the last two and a half, three years journey has been one of a lot of

difficulties to begin with but certainly giving us a lot of satisfaction today when we sit at the cusp of the next revolution that India is going to see in terms of greater and greater penetration of renewable energy. The gentleman who accompanied me here was talking about the end of coal, I told him that well it's not really like that and I want to reassure Coal Secretary that his job is still a long way from getting done.

And I would like to share a perspective with you while we are at it on why I believe coal is equally important. While I have spoken very often about the base load required for any robust energy grid to be able to meet the demand needs of a nation. And for us and our energy security, that base load cannot be anything but coal, our own domestic indigenous coal. And Secretary Sushil Kumar is working very very sincerely to even further bring down the import of coal and make India an energy secure country. But when we assessed how we can involve coal also as a clean energy fuel, there are two or three dimensions which we are now working on in the coal sector. One is to do with replacement of old power plants with super-efficient, modern, energy-efficient coal plants. Now that one area alone, there are about 25 to 40 GW of plants which now or in the next 5 years will need to be decommissioned, they will exceed their normal life of 25 years and each one of those, as Secretary Anil Razdan will confirm, are polluting at such great levels almost 10 or 12 times a new modern efficient plant that just decommissioning that 40 GW/40,000 MW of coal-based plants will reduce the particulate matter, the soot and smoke emissions and all the other carbon emissions to such an extent that that saving will be far greater than possibly the 100,000 MW of solar power that we will be generating. And that should be the national priority.

I was reading some article and some criticism and I don't know whether TERI has noted that. I would like you to do a study, what will be the impact when we changeover to these new plants. There will be obviously a very nominal impact in terms of a further capex that they will have to do. And at today's price points and today's efficiency levels where corruption is a word which is no more in the lexicon of government and governance in India, will actually be able to replace them at probably Rs 4 crore a megawatt, at never before prices. We have land, we have the balance of plant, we have water, we have environmental clearances. The fastest and most super-efficient way to convert them is now and today, and at the same time, we will also be saving coal, the Station Heat Rate and all of those technical things which I don't, someone chartered accountant doesn't understand. But all the ancillary benefits of less pollution in terms of less consumption of coal will ensure that the power cost does not go up. So in all the work that the Ministry of Power, Renewable Energy, Coal and Mines has been doing, our effort has been not to be dependent on government largesse or government budgetary support but to make it self-sustaining and stand on its own legs.

Before every budget and we have had four of them so far, I have the press asking me what are you asking from the budget? What is your expectation? What do you demand? And consistently for four years my answer has been, nothing. We don't need anything from the budget. We don't need to put further stress on the people of India and the hard-earned taxpayer's money to support a sector which really is a commercially viable sector and can stand on its own feet. Of course, provided all the states support us and don't allow power theft to flourish. I don't know if any of you heard that but we now have a Chief

Minister of a state encouraging people to indulge in power theft. It's something I have never heard of in my life before where a Chief Minister is boldly announcing to the world, 'look in my state I don't even catch the people who do power theft.' 'मैंने तो कटियाबाज़ को भी कभी दण्डित नहीं किया, कभी पकड़ा नहीं.'

That's the kind of problems that a federal structure sometimes entails where state government's profligacy then turns out into a hardship for the people of the state. But given that constraint, we have still been able to, whether it is through Ujjwal DISCOM Assurance Yojana, whether it is through the transparent bidding of all renewable sources of energy which at one time were determined through feed-in tariffs and were probably more than twice what they cost today. I appreciate that the Madhya Pradesh bid of 2.97 has certain advantages. It's a robust and outstanding power purchase agreement that they have drawn up, take or pay is confirmed. So there is no need to be stressed about power not being picked up by the state DISCOM. The solar park initiative which Prime Minister Modi's government had initiated has been very well implemented in Madhya Pradesh, the Reva Solar Park. Jyoti Arora's program on Green Energy Corridors is taking power into the corridors or evacuating power from the corridors into the grid.

This enabling environment has helped us create a situation where today solar power is cheaper than coal-based power. And that has been the strength of the thinking of this government; make everything self-sufficient, make it so attractive that people are encouraged to transition to the new age of clean energy. I am sure battery storage will be the next level of technological development which will help us further move towards 24/7 power in a clean and renewable environment. And I have no doubt in my mind that the next phase of

transition from the current hydrocarbons towards cleaner forms of energy will make India the energy capital of the world. Already, I have seen huge investments flowing into this sector. We will have nearly \$25 billion investment in the thermal power plants which get replaced with super-efficient plants. There was some criticism somewhere I read about some time extension that has been given by the Ministry of Environment to meet the new norms of pollution that was set some time back. But I do wish all these so-called armchair critics would appreciate that the people of India have a right to affordable energy, have a right to energy which is at a cost which even the poor man can afford. It's very easy to sit in an armchair in an air-conditioned room enjoying the fruits of energy and criticizing others for giving some more time to meet these norms. Because I personally believe it's senseless to invest large amounts of money on old plants, 30-year old, 40-year old plants to meet these efficiency or pollution norms and put that burden on the people of India. I would rather replace them with super-efficient plants which automatically meet these norms and use that investment to further enhance capacity. Because I will be replacing 200-400 MW plants by 600-800 MW plants. I will be enhancing capacity with the same infrastructure. I will be improving pollution and yet not causing the people of India any loss, any further cost on their pocket. And that to my mind is good governance, that to my mind is sensitive governance, sensitive to the poor of India.

And I would urge people who are all the time talking about some, you know, very impractical and very arbitrary goals should consider what it means to the people, what it means to the poor of India. Having said that, I must also point out to some people who have also been talking about low Plant Load Factors in India. It only shows the inability of

some people to understand elementary mathematics. I don't know how they get degrees at Harvard and how they get engineering degrees without understanding elementary mathematics. But probably, some people are so used to the fact that power plant should necessarily take 10-12-15 years and have huge cost overruns. And, therefore, they cannot imagine that a government could have within two and a half years added so much capacity into the system, production capacity, that we now have a situation that India, if it desires and if it needs, can increase the output of power to 150% of what we are producing today, overnight. So if a country is at 1.2 trillion units of electricity today, we now have a installed capacity based ambition which can take us to 1.8 trillion units and, therefore, give comfort to investors, to people who want to set up industries, to the people, the 5 crore families who are yet deprived of electricity in their homes that yes India has the ability to deliver, has the ability to provide power to everybody, power for all, 24/7. They can actually visualize a country where diesel generator sets and invertors are passé, are history.

And this focused effort to get all the stalled and stressed power plants into commissioning; back into operation has certainly resulted in the Plant Load Factor falling, but for very good reasons. With a larger denominator and a larger installed capacity base we still have a 6.5% CAGR growth in the electricity consumption every year, for the last two and a half years. It's probably more than it was for the last 10 years before that, particularly, when you juxtapose it with the huge effort on energy conservation, energy efficiency. Just the LED programs alone, I was having an assessment done, has reduced the demand of energy by about 3-3.5% every year. So if you add the 6.5% growth and the huge reduction, savings in energy, you are looking at a real growth of almost

10%, unheard of in independent India. That really is a denominator, is a reflection of real growth in the economy and as we push this growth forward in the years to come coupled with energy efficiency, the new program we are launching on energy efficient pumps is going to be one more big ticket and very impactful change that Indian agriculture is going to see. Free energy efficient pumps to every farmer replacing the old 10-20-30-40 year old pumps is going to be the next transition which will deeply impact the farming community, which will deeply impact the farming sector. I do hope after this election to be able to launch it in the larger state in India where farmers today are facing deep stress, severe stress and from there take it into the whole country as the next transition into energy efficiency, clean energy.

And all in all, I think as India moves towards bigger and greater degrees of development I can assure all of you that the power sector and all the Ministries working without silos as one, be it Coal, be it Mining, be it Power, be it Renewable Energy, will all work seamlessly to transition to this next phase that you are going to deliberate on today. I do hope to receive Ajayji some good ideas from your deliberations of the day which will further help me make one step forward in my own journey in this field.

Thank you very much.