

**Director General, BEE, Dr Ajay Mathur, talks about National energy efficiency programme, Standard and labelling, ECBC and all the other initiatives taken by BEE for promoting energy efficiency.**

*IEEMA Research Group*



**Q.** The national energy Efficiency Programme was initiated in the 8<sup>th</sup> plan with a targeted saving of 5,000 MW in the electricity sector. Do you feel we have achieved the required success in this area and BEE is successful enough to achieve its goal of reducing energy intensity in the economy and creating awareness among the all the stakeholders?

**A.** Past 10 years have shown that Indian economy has effectively decoupled its growth from the energy growth. We have been growing at about 8% a year. 8%, 9%, 10% - those are the kind of economic growths that we have seen from the last 10 years. But the energy growth has been of the order of less than 3% a year and electricity growth has been about 5%, but overall electricity growth has been only 3% a year.

So, we have been able to have large increases in the economic growth of the country with a much smaller growth in the energy sector. So, when you look at the energy intensity trend in the country, it can be noticed that over the past 10 years, the energy intensity on the Indian economy has been steadily declining at about one and half to two percent a year. This is because of many things. This is also the time in which globalisation has occurred, competitive pressures have increased. This has led Indian

industries to invest in energy efficiency because it brings down production cost and they are able to compete with the global market.

Take the example of Tata steel. They acquired CORUS which is five times the size of Tata steel but the only reason they could do it, because Tata steel is the only low cost steel producer in the world. They have the kind of surplus and confidence. So they were able to take on another company, which is five times bigger than their size, and proudly say we will be able to provide technology and practices so as to make CORUS as efficient as Tata steel. Some more examples – Cement sector exactly has the same story. World's most energy efficient cement plants are in India. There are other sectors like refineries, fertilizers on this list. This is one reason. Other reason of course is, as the economy has grown we have seen a larger growth in the services sector and as compared to the other sectors service sector also requires less energy, thus it has contributed to reduction in the energy intensity of the country and also growth in the GDP.

**Q.** Despite the large potential for energy efficiency investments having financially attractive returns, only a small fraction is being trapped. Don't you think there is a need of concerted efforts whether voluntary or otherwise on Energy Efficiency in the Industrial sector?

**A.** On one hand we have most energy efficient plants in the world whether it is cement sector, fertilizers etc, but on the other hand we have plants with very low energy efficiency. So, our real problem is that we also have plants with very high energy efficiency and plant with very low efficiency. It is the band width of energy efficiencies which is the problem and our goal is to bring this tail of inefficiency and tuck it in the efficient plants. Therefore, what is needed is really transfer of practices, transfer of knowledge from the most efficient plants to the least efficient plants and this occurs through variety of ways.

In the cement industry, most efficient plants have been extremely open. They should invite the less efficient plants for walk throughs and guide them on how they can become the most efficient plants. In order to achieve this they need to find out who are the consultants they have used, what are the kinds of equipment vendors they have gone to and this obviously shows in the performance of less energy efficient plants. These are kinds of efforts that we need to carry out. Sharing of information amongst industries in the same sector so that the entire energy saving potentials can be achieved.

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**Q.** In the agricultural sector, India has about 12 million electrical pump sets consuming 28% of the electric power. A number of reports have indicated that savings of up to 30% can be realized by making certain improvements and replacements in the existing pump sets. Though the Ministry of Power has issued some comprehensive guidelines for rectification of agricultural pump sets, not much has been achieved so far. What are the reasons?

**A.** The Prime reason is that electricity for agriculture is either at zero or very low cost. So, if users of energy are not paying for electricity, they may not invest in buying a more expensive but more energy efficient pump. Consequently it's absolutely essential that we have to make the price of electricity in the agriculture sector reflect the cost of supplying it. That's a larger issue and it will take time before we move there.

With the electricity Act coming into place, if the state wants lower agricultural tariffs and if all states do, then the state has to provide subsidy upfront to the electricity distribution company. BEE is proposing to carry out a scheme and we will start the demonstrations soon, in which we will encourage the energy service company to change the pump sets and distribution transformers. So, that the amount of water that farmers use is the same but the amount of electricity used to deliver that water reduces.

Now, if the electricity reduces, amount of subsidy that the state has to provide will also reduce and the energy service company or the franchise who invests in the new pump sets, transformers etc is paid from the savings in the subsidy, that is provided by the state to the utility company. We feel that this is the model, which may have a chance of upgrading the energy efficiency in the agriculture sector.

In Andhra Pradesh there is a very small model that is being carried out, a model has been carried out in Madhya Pradesh and Karnataka also. The key is to see how we can upscale this model along these states and in all states of the country.

**Q.** If we talk about power sector, low energy efficiency transformers may be in use at some of the places. While doing so, life cycle cost may not be considered, which is not correct practice. So before making any purchase of transformers, should it be approved by BEE?

**A.** BEE for past two years has carried out an exercise to access the lifecycle cost effectiveness of the transformers. Based on that we have developed a scheme through which transformers would be labeled as one star, two star, three star, four star and five star. Five star transformer losses would be 30% less than losses of one star transformer.

We are recommending that the electricity companies should procure transformers of at least three star or higher rating. Then within that rating, they can get the cheapest transformer that they want. But due to the higher technical specification, there would be savings. The proposal is under consideration and we are hoping that Ministry would approve it soon.

**Q.** Do you feel there is a need to focus on energy efficiency in buildings and establishments? Apart from converting existing buildings, it is essential that new buildings should be designed and built according to energy efficiency considerations right from the initial stages. Do you feel energy efficient building codes should be made mandatory for the builders?

**A.** This is the most important area as far as energy conservation is considered. The amount of electricity used in commercial sector is increasing very fast, at the pace of about 12% per year. Keeping with this in mind, BEE has come out with Energy Conservation Building Codes, ECBC.

The codes guide builders and architects to look at how building is to be oriented, how to build walls, put an insulation in walls, minimize amount of glass used etc. The lighting should be such that it is adequate, but with minimal use of electricity. The building should be designed in such way that there is efficient use of chillers, AC ducts, Handlers etc, so that AC load on building decreases. Once it is done, the total amount of electricity used comes out to be half of electricity used by a building which is not designed as per ECBC. We feel this has great potential to reduce electricity used in commercial sector.

**Q.** According to this code, it would be incorporated right from initial stage?

**A.** Yes, right from design stage, we would start thinking about amount of energy building would use.

**Q.** To increase the usage of energy efficient equipments, Standard and Labelling is a very good step. Don't you feel that Standard and Labelling should be made mandatory for all the electrical equipments?

**A.** Yes absolutely right. We have already started Standard and Labelling with fluorescent tubelights, refrigerators and air conditioners. We will be expanding it to transformers, motors, ceiling fans, and LPG burners. Later on in next year, we will expand it to electronic devices – both office and domestic equipments. So, this would keep on increasing. When label is announced for any appliance, it will be voluntary for sometime. And after that it would become mandatory. So, this would allow people to come in and give some time to manufactures to get his equipments tested, make changes if required and position their products according to market requirements.



**Q.** These kinds of programmes require support for their successful implementation. So, what kind of support are you looking for from consumers, manufacturers, and associations like ieema?

**A.** Once consumers start demanding high star products, manufacturers themselves will start manufacturing these types of products. And everybody gains. Associations have very important role to play. I am proud to say that we have a very strong association with ieema where transformers and motors are concerned. We are also working effectively with lighting association in the area of lighting.

It is through the associations we reach out to manufacturers. It is through them we give information, information about how products can be upgraded given to manufacturers. This is an initiative where all the stakeholders need to work together, but the need is consumers.

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### **Reference Book:**

*IEEMA journal*  
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