

## UNIT 20

### NEW IDEAS TO EMPOWER THE POWER SECTOR

*“Let the implementation Challenge not vitiate the overall vision”*

*Mudit Kulshresht*

*(Energy Chemical & Utilities)*

#### 20.1 Biomass Power for Rural Job-creation & Prosperity<sup>1</sup>

India has a large rural economy with almost 75% of the citations residing in rural setup. With the passage of the electricity Act 2003 distributed generation has become a potentially viable option. The same option is being reproduced here. To leverage this opportunity India Vision 2020 provides a viable option. Approximately 50 million hectares of degraded wasteland that lie outside areas demarcated as national forests, and another 34 million hectares of protected forest area, in much of which tree cover is severely degraded. A massive programme to develop energy plantation consisting of fast-growing tree crops such as Bamboo, Casuarina and Eucalyptus can serve as a raw material for a national network of small, decentralized biomass power plants. These power plants, ranging in size from 10-25 MW, can generate thousands of megawatts of power from renewable, forest-based fuel sources in a cost effective manner. This would reduce India's dependence on imported fuel oils, stimulate private investment in the power sector, and generate massive income and employment opportunities for the rural poor. Establishment of 40 million hectares of energy plantation would be sufficient to generate 100,000 MW of power and provide year round employment for 30 million people.

The greatest advantage of biomass power is that they generate tens of millions of rural jobs and stimulate enormous growth of rural incomes, especially among the weaker sections. Therefore, these strategies should not be regarded from the narrow perspective of energy alone, but from the wider perspective of national development.

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<sup>1</sup> This article has substantially been borrowed from the India Vision 2020 document .Full text of the same is available on the website of Planning commission (<http://planningcommission.nic.in>).

## 20.2 How to supply power at 50 paisa per unit <sup>2</sup>

Recently an energy writer has proposed an innovative scheme to supply electricity at the flat rate of 50 paisa per unit. His view is that electricity could be sold dirt cheap rates like media: charging fraction of costs and making the rest from indirect beneficiaries. Media makes money from advertisers, power producers and suppliers could make money from a low ,flat cess charged on every transaction, because every the entire economy from stock exchanges to food storage to movies need power to run. The cess could be as low as 0.5% or less of the total turnover of the economy. Interestingly India has followed a similar model to fund roads construction , where roads are build by fuel cesses.

The benefits of the 50 p rate of electricity is

- Most of the T&D losses are due to electricity theft. With one rate in place there is no incentive in stealing power
- Low rates electrify poor folks otherwise unable to pay higher tariffs
- With a common rate the suppliers would not hesitate to supply in rural areas or areas which are not well off.
- Politically 50p rate will be acceptable to all entities
- SEBs and Government owned entities resist 'cherry-picking' by private electricity retailer because this will have adverse impact on there financial status . This will become a non entity if a common tariff is applicable.
- 50p tariff will encourage and induce everyone to pay

Like media , electricity is an enabler of business. Without power, every light, AC gadget and computer will stop working. Supply chains will collapse without refrigeration .Trading will stop , financial markets will shut down. Telecom network will go silent Nothing works without power. So it makes sense for business to subsidies every body to use power, the same way companies subsidies media users. The difference between cost and tariffs can be covered by appliance makers, entertainment companies, software firms , telecoms and so on.

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<sup>2</sup> The Economic Times dated 01 Oct 2003 and Wednesday 29<sup>th</sup> Oct 2003 by Shri Abheek barman

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He also proposes creation of a fund by imposing a cess on sectors that benefit from electricity use and use the same to fill the gap between low tariff and high costs. Some thing similar is happening in the road sector where oil cesses are funding highways. The energy writer also gives some rough estimates . India now uses about 500,000 million units (MU) of electricity , which costs about Rs. 100,000 crore. Under the new pricing regime, if everyone pays 50 paise per unit, it'll raise Rs, 25,000 crore from tariffs, leaving Rs. 75,000 crore to be covered by the cess. To recover that kind of money, you'd need to charge the profits of the economy (or GDP) a flat cess of 3%.

Now, the economy's turnover is many times more than profits, so an actual cess on turnover will be a lot lower, maybe 1% or less. That'd cover all costs and leave users with electricity priced at an unbelievable 50 paise. Power for all at 50 paise will be a political winner, with states scrambling to fix media-type tariffs for electricity.

### **19.3 Ocean Power having potential of 180, 000 MW<sup>3</sup>**

India is a tropical country with a long coastline. The National Institute of Ocean technology (NIOT) is researching on the way to harness the tremendous ocean thermal energy potential.

The Ocean Thermal Energy Conversion (OTEC) technology uses the water temperature difference at the surface (at about 29C) and at a depth of 1,100 meters (at about 7C) to produce electricity. OTEC has the potential to generate 180,000 MW of power.

The NIOT is implementing the world's first 1 MW floating OTEC technology demonstration project off the Tuticorin coast in Tamil Nadu. The various sub-systems for the plant have been configured, designed and integrated on an OTEC floating barge. A one kilometer-long cold water pipe has been towed out to the site and deployed vertically with an anchoring system at a depth of 1,200 m. The OTEC

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<sup>3</sup> Frontline November 7,2003

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plant will be commissioned after the barge is connected during the next fair weather season.

This kind of non-polluting renewable energy source is appropriate for power-starved nation like India. Though it is capital intensive now, improvements in technology and higher rated plants can bring down the unit cost considerably. India's OTEC resource potential is estimated at around 180,000 MW.

For the mainland, the cost of power generation for plants upwards of 25 MW is expected to be comparable to fossil fuel units. But for islands, an OTEC power plant of any size is cheaper than the conventional generation units. This can help in future to generate electricity for the 7000 KM coastal belt of India and can also fruitfully serve the islands of Andaman & Nicobar and Lakshdweeps.

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