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World Water Day – Do you know how much water a light bulb consumes?

2030, researchers estimate that the disparity between national water demand and reliable water supply will be nearly 50%. Currently, India has a total water demand of around 700 billion cubic metres, of which almost 85% is used for producing food. In another 17 years, India will have only half the water it needs, thanks to global warming and population explosion. On the World Water Day on March 22, the need to focus attention on the importance of freshwater and advocating sustainable management of freshwater resources will be of pivotal importance. If we consider even the most cost-effective solution to reduce water scarcity, it will require an annual spend of nearly Rs35,000 crore by 2030, according to 'Charting our water future: Economic frameworks to inform decision-making', a report by global management consulting firm McKinsey & Company. The report stated that India would require investments to the tune of Rs8 lakh crore over the next 20 years to provide basic infrastructure services like water, waste water and solid waste management——A DNA news report by Dilnaz Boga.

While reading this under my study light, I looked up and started thinking – how much water does my light drink? I found some interesting answer under Saving Electricity, on water consumption to produce electricity. While I would not be able to verify the facts noted as under, even believing them to be accurate to some extent, presents a very sombre scenario.

Water Consumption by different types of Power Stations to produce electricity:

Solar plant with dry cooling: 80 gallons per megawatt-hour

- Nuclear plants (with closed-loop cooling): 700-1100 gallons per megawatt-hour
- Nuclear plants (with open-loop cooling): 25,000-60,000 gallons per megawatt-hour
- Coal-fired plants (closed-loop): 500-600 gallons per megawatt-hour
- Coal-fired plants (open-loop): 20,000-50,000 gallons per megawatt-hour
- Biomass (crops grown for the purpose of fuel): 40,000 to 100,000 gallons per megawatt-hour
- Natural gas fracking: 2-10 million gallons per well

Now let's do some simple maths – 1 gallon = 3.78 litres. As on July 31, 2010, and as per the Central Electricity Authority the total installed capacity of Coal or Lignite based power plants in India are 87093.38 MW.

So the water required to produce this electricity 87093.38 x 2268 liters = 19,75,27,786 litres.(assuming all are closed loop consuming 600 gallons/MW) Presently we have around 111 Thermal power plants which are coal/lignite based.

While it can be argued that water is recycled most of the time; the coal, nuclear, bio-mass, natural gas power plants require water cannot be denied. And it is impossible to stop the leakages. Some of it will have to escape, thus requiring continuous replenishment. Even solar thermal requires water, though it can be called a saint in comparison to the others.

Thus a huge amount of water is not reaching the fields of a drought hit farm, or recharging the wells to quench the thirst. So with every drop of electricity produced we are removing vast amounts of water from the natural water cycle. This must be clearly understood.

India has an installed power generation capacity of 2,10,950 megawatts of electricity, according to government figures. And as per various estimates, India's power generation meets only 90% of total demand.

As the demand for electricity for a resurgent India is bound to increase, the thermal power plants have to increase their capacity or new plants would be needed to be set up. Same would be the case for nuclear, natural gas, biomass and natural gas fracking.

The common person needs to understand that Energy & Water are interlinked; just as it is inside the body of a human. Without water, one has to die. Similarly without water we shall have no electricity; until renewable energy, especially solar PV and wind mature to cover the demand supply gap. But this is not happening any time soon.

It is a choice in front of the intelligent animal named "human" to decide which is more important. To quench its thirst or thirst for more power to light up the ugly, unsustainable city which it habitats. The situation soon would be a choice of one or the other, unless we change the way we live. Sustainable design and living is no more an option but a necessity.