



SOLAR ENERGY WAY FORWARD 2010

By Khushroo E. Sethna - B.Arch

Khushroo Sethna, an Architectural Interior Designer, shares his observations and thoughts on the current trend in the Power Sector – Going Solar!



SOLAR POWER HARNESSING IN INDIA AND THE SUBCONTINENT - ECONOMICS:

1. India is on the threshold of enormous overseas manufacturing companies outsourcing their businesses here, which is already putting a lot of pressure on the power & energy needs of existing manufacturing units operating on the subcontinent. The new industries opening in the near future will have to prove cost effective and at the same time comply with more stringent laws pertaining to sustainable/ recyclable forms of energy. Local manufacturing units are already stretched with output cum commercial demands along with the economics of distribution to have any time or in house resources to look into harnessing energy from within their plants and even if achieved the resultant captive energy available is small compared to their needs. Extrapolate this across the entire region and you are looking at a huge energy crunch along with rising costs, again a resultant of high price electrical power consumption.

2. Although the Indian Govt; has sanctioned many Thermal and Hydro Elec; Power Plants in the last Fiscal and more are in the offing, the huge costs that are involved plus the resultant environmental damage that will definitely be a looming problem, should propel the Indian Industrialists to be more open

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to the implementation of ideas related to nature based energy harnessing. The initial costs to develop and build the same may be marginally higher than the conventional forms of generating power, however, the next ten years will be the harbinger of more efficient and cost effective power generation if we are to benefit from "Green Energy". As a matter of fact every new technology which the world has seen was markedly expensive in the beginning. Closer home, we have seen the absolute turnaround in operating costs with respect to the Cellular telecom Industry and computers and now both being affordable to the consumers across diverse socio economic backgrounds with a growing consumer network expanding every year!

3. Real estate developments in India will see a definite rise in the next ten years and there will be more development along the West coast & Central India regions which are pristine and can afford a better environment to the inhabitants. With trade and commerce on the rise in the next decade or two, there is the probability of more sea ports and SEZs (Special Economic Zones) being on the anvil and being developed eventually along the West as well as the East coast. Where are we going to get the power and energy requirements for building and sustaining these new cities with the existing cities already facing power shortage and regular power cuts on a daily basis? More coal mining, coal imports, diverting water from agriculture to Power Projects? The solutions may be there from a conventional thinking standpoint but what will be the ramifications on the environment, and yes we are talking aloud from a Global standpoint as one Country's raw material needs may be stripping off another's ecology to shreds!!!

WORTH THINKING!!

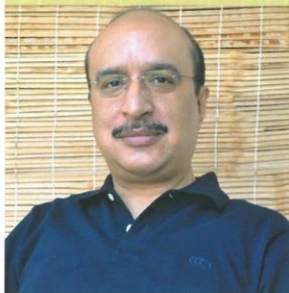
Why not harness nature's bounty? - Commercial benefits of arid land:

The vast tracts of land available to set up Solar Farms in India are mind boggling. If one can work out the mathematics of how much Solar power could be generated from a single parcel of land admeasuring say 2000 Acres and multiply the same with a number say 10, what figure are we arriving at in terms of electrical power generation for just one state in our Country? At the same time one cannot fathom the mindless stripping of fertile farmland being done in the name of "development for SEZs if there is no proper power infrastructure set



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Picture by : Mr. Vaseem Pathan

up within the region. How are we then going to tout ourselves as a major manufacturing outsourced hub for the overseas Corporations and yet leave our not so fortunate brethren living in the hinterland with no available power to sustain a normal life? And yes we need to have an agrarian economy as well! Even if the economic needs of the marginalized farming community has to be addressed through farmland acquisition the same can be done more responsibly by setting up mini Solar Power Plants along with the farmlands and allow the farmer to be a stake holder in the Project, thereby allowing both sectors to co-exist and mutually benefit from an economic standpoint.

If we can work out the commercial benefits that may accrue in the next ten years and not focus on the mindless hurdles, and the misjudged “cost effectiveness”, etc we are looking ahead in the right direction to our Power needs through a more “Benign” source, even if Atomic Power generation in our country could be on the anvil in the near future. The “mantra” has to be conservation of the Environment for the bountiful reciprocal advantages it will deliver to our many generations. There are going to be many catastrophic ramifications to environmental abuse both from the health as well as economic issues the country will have to face, therefore the need of today is to have better “Thinkers” in the Industry to spearhead a new movement. There have to be a few successful Project models in the country, for the Industry to take note and then implement it as a more solid alternative for generating power and energy. The oil barrels may take a few centuries (or even one) to dry up maybe! But better to have the alternatives worked out now, than later.

Regional Locations for Successful Solar Power Farms:

- North Indian Region- Possible Land use area for Solar Farms- Appx 50000 Acres / 200 sq Km
- West & Central Indian Region - Possible Land use area for Solar Farms – Appx 70000 Acres / 300 sq Km
- East Indian Region- Possible Land use area for Solar Farms – Appx 40000 Acres / 180 sq Km
- Southern areas - Possible Land use area for Solar Farms – Appx 55000 Acres / 250 sq Km

All the above mentioned figures are conservatively stated and are approximations. A detailed topographical survey needs to be initiated to arrive at accurate figures.

From the above mentioned areas one can pragmatically assume an initial availability of approximately 1000 Hectares of land from each state for setting up such Solar Farms in the region. On an approximate basis it would require 5 Acres of land for generating 1 Megawatt of Power, which means an initial set up of 500 Mw Solar Power farms for each state which could take up rural electrification in it’s ambit, initially. This alone can ease the power woes of our less privileged brethren

in the rural hinterland. As an initiative in a small way we are already having innovative entrepreneurs doing some stellar work in Bihar, Orissa and Gujarat. We need to bridge enthusiasm, grit and innovation with affordable and sensible technology, to make an economic impact in Solar power generation. We therefore have a mathematical model to understand what would be the available power generation within the next 5- 10 years in the region.

CORPORATE – GOVERNMENT JV PARTICIPATION

Corporate India has resources and a growing need to harvest energy from renewable / natural sources and Solar Energy can be a primary focus, mainly due to the conducive geo climatic conditions prevalent in our country. This is currently being successfully implemented by a joint venture between C.I.I. & The Sohrabji Godrej Foundation, launching it’s pilot project in Hyderabad a few years back. However in the near future there is clearly going to be a popular public opinion regarding conservation of natural resources and to protect and conserve our natural resources as much as possible for sustaining better climatic variables as against the onslaught of rampant mining of minerals/ coal, etc, due to pressures on energy needs, in order to obtaining power from conventional forms.

This cannot be achieved by a singular corporation, neither a singular entity, but a concerted move by a nation’s environmental experts empanelled to chart out a plan for speedy drawing board solutions and effective implementation.

With a sizeable financial outlay for the project to see even a 10th of its implementation value, one cannot rule out inviting reliable, experienced and proven Corporations from overseas to start collaborative operations in India. Which leaves us with a lot of Venture Capital funds being brought in through FDI being pumped into the projects.

Would that be contrary to our economic growth, or would it be a necessity to give the initial thrust to an industry that can bring on a new dawn to the region and propel other energy saving projects into the pipeline as a way forward to an ecologically safe way of generating energy! It would open up new industries new technical streams of education and a whole new breed of entrepreneurs. Simultaneously Public – Govt; participation in the way of Tax saving bonds could release massive cash flow to the Govt; exchequer and then funnel it into a Public - Private Corporation. This will undoubtedly give a fillip to other Industrial sectors linked to a Passive/ Active Solar power Projects.

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