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Renewable Energy and Power Crisis

Renewable energy offers our planet a chance to reduce carbon emissions, clean the air and put our civilizations on a more sustainable footing. It also offers countries around the world the chance to improve their energy security and spur economic development .So much has happened in renewable energy sector during past 5 years that our perceptions lag far behind the reality where the industry is today .Just in 2007, more than 100 billion USD was invested in renewable energy production assets, manufacturing, research and development- a true global milestone.

Electricity generation from renewable has reached up to 240 GW worldwide in 2007.The largest component of renewable energy generation is wind power .Power generation from wind energy has reached up to 95 GW worldwide in 2007.The fastest growing technology in the world is grid connected solar photovoltaic which is providing energy to 1.5 millions homes worldwide and rooftop solar collectors are providing hot water to 50 million households worldwide.

Here I would like to just present some statistics about the resources, potential and achievements of two countries in renewable energy sector and those two countries are Pakistan and India. India has overall potential of 45,000 MW of power generation from wind energy and as compared to India; Pakistan has potential of 50,000 MW from wind energy. By the end of 2007, India has achieved the target of producing 1870 MW of electricity from wind energy and now India is standing as the 5th country in the world for the largest production of electricity using wind energy. According to wind resource assessment programme in India , wind monitoring, wind mapping, covering 800 stations in 24 states with 193 wind monitoring stations in operations.On the other hand, Pakistan has a considerable potential of wind energy in the coastal belt of Sindh, Balochistan and as well as in the desert areas of Punjab and Sindh.

The coastal belt of Pakistan is blessed with a God gifted wind corridor that is 60 km wide (Gharo ~ Kati Bandar) and 180 km long (up to Hyderabad). This corridor has the exploitable potential of 50,000 MW of electricity generation through wind energy. In addition to that there have been some other wind sites have been exploited in coastal area of Balochistan and some Northern areas. Most of the remote villages in the south can be electrified through micro wind turbines. It is estimated that more than 5000 villages can be electrified through wind energy in Sindh, Balochistan and Northern areas. But unfortunately not even a single project using the wind energy has been started yet .isn't that a shame?

Most parts of Pakistan and India has 300 sunny days in a year which is equal to 5000 trillion KWH/Year and it is far more than the total energy consumption per year. India used its resources very and its policies are making good use of these sunny days. More than 700000 PV systems generating 44 MW have been installed all over India. Under the water pumping programme more than 3000 systems have been installed. Over 17 grid interactive solar photovoltaic generating more than 1400 KW are in operation in 8 states of India. A conservative estimate of solar water heating systems installed in the country is estimated at over 475000 sq. meters of the conventional flat plate collectors. Noticeable beneficiaries of the programme of installation of solar water heaters so far have been cooperative dairies, guest houses, hotels, charitable institutions, chemical and process units, hostels, hospitals, textile mills, process houses and individuals. In fact in India solar water heaters are the most popular of all renewable energy devices. On the other hand, Pakistan has just launched very small projects in solar energy sector which are electrifying only 11 villages in all provinces of Pakistan.

Being an agricultural country there is easy availability of agricultural based mass which can be used to generate energy. Burning this biomass is the easiest and oldest method of generating energy and also the least efficient.

Over 70% of the population of Pakistan is in villages but these are the villages which receive neither electricity nor a steady supply of water-crucial to survival and economic and social development and growth. No educational facilities for higher studies exist in these villages and neither can we find sophisticated hospitals or industries. It is all because of lack of electricity and water. Biomass exists in these villages and needs to be tapped intelligently to provide not only electricity but also water to irrigate and cultivate fields to further increase production of biomass (either as a main product or as a by-product), ensuring steady generation of electricity. An added bonus is the availability of waste biomass from the biomass gasifier plant to be used as fertilizer. But in Pakistan so far no development been seen so far .On the other hand in India development of biomass gasification has received serious attention with establishment of biomass research centres and gasifier action research centres at various locations spread all over the country. These institutions have played a key role in up gradation and adaptation of suitable technologies, testing, monitoring and development of biomass gasification systems. In India more than 2000 gasifiers are estimated to have been established with a capacity in excess of 22 MW and a number of villages have been electrified with biomass gasifier based generators. India stands first in the in the use bio-mass gasifiers for the production of energy .India ranks 4th in the generation of bio-mass based power.

Pakistan despite of having nuclear capability did not match other nuclear states in power generation. Its nuclear power generation remained at only 2.55 billion kilowatt-hours in 2006 against India's 15.59 billion kilowatts.

After going through these statistics, we must have got an idea that how much

potential Pakistan has got .After having so much potential of producing electricity from renewable energy resources ,Pakistan still have shortage of 4000MW of electricity. Due to this shortage of power, every citizen of Pakistan; former, industrialist, students almost everyone feels like to cry when they have to stay without light for hours and hours in such a hot weather. I would just call it terrorism on power.

If people in Magnolia can use 30,000 small wind turbines to provide for lighting, televisions, radios etc then why not Pakistanis can take those initiatives. It is not something called Rocket Science. It doesn't take much to build your own micro-wind turbine and you necessarily don't need to be an engineer. To build a small wind turbine we just need five things; a generator, blades, a mounting that keeps it turned into the wind, a tower to get it up into wind, batteries and electronic control system. A typical small wind turbine has a rotor that is directly coupled to the generator which produces electricity either 120/240 Volts AC for direct domestic use or 12/24 DC for battery charging.

http://www.mdpub.com/wind_turbine/index.html

The link above will give you the detailed information on how to build small wind turbines for domestic use.

Now, I would like to make a solemn pledge to every citizen of Pakistan that we need to start seeing the world with new eyes and need to take the reins of Pakistan in our hands and stop these politicians to decide our future.Becuase all the governments had a very good idea of what Pakistan has been bestowed with renewable energy resources but they just relied on doing the surveys and making policies but never tried to implement those policies. The measure Pakistani Government is taking will start covering up deficiency of power by 2016 .They are just relying on hydro and thermal power generation which is not feasible and cost effective anymore due to rising prices of crude oil in international market. Now every citizen of Pakistan needs to initiatives at its own level and bring Pakistan out of this Power crisis. Everybody should generating electricity at his level just to fulfill some of the basic domestic needs .It is not something called Rocket Science. Taking these small steps is the need of the day.

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