



Limited resources and unlimited usage.
How can we save it?

Newsletter



**Conserve the energy,
Save our climate!**

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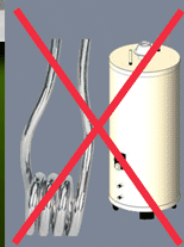
Why ???

We the people on the earth are gifted with wonderful energy sources by the nature, which has made our routine much more smother & easier... However, this gift of the nature is ' limited '. What we have done is, with the growth of science & technology, we have started using it extremely, because of which the energy resources are going to finish in near future. Hence, let us take the pledge to conserve the energy - save the energy!!!

Tips of the Month



Utilization of solar water heater to boil the water will be more energy saving and environment friendly than the traditional electronic water heaters.



Article - 1 : Charanka, Gujarat – Asia's largest Solar Park

An idealistic example of eco-friendly initiative undertaken by the government of Gujarat is "Charanka Village Solar Park". Gujarat Power Corporation Limited (GPCL) is the Nodal Agency who developed this commendable "Solar Park" in Gujarat. Bold and proactive initiative that was taken by the government of Gujarat is admirable. "Gujarat Solar Park" is Asia's largest solar park, is located at Charanka village, district Patan in Gujarat.

"Solar Park" spread across 5,384 acres of unused land with capacity of 590MW. An art infrastructure has been stated with provision to collect rain water besides power evacuation by the integrated "Solar Park". The installed capacity of Solar Project is 224 MW commissioned by 20 developers. It will be further enhanced by 50 MW by the end of the year, accounting to 25% of total Solar generation developed India.

Utilization of wind energy is also in practice at this Solar Park. Solar Park has capacity to generate 100 MW of Wind Power with two Wind Mills already in process, each of 2.1 MW making the Park, biggest solar-wind hybrid Park in the world. "Solar Park" also accounts for 3,42,400 tons Carbon Emission Reductions.



Development cost of "Solar Park" was Rs. 4500 Crores, which includes Rs. 550 Crores for infrastructure and land acquisition and Rs. 3,996 crores for Solar Power Plant (Developers investment), besides creating an Employment for more than 1,000 people on permanent basis. Project was launched on 30.12.2010 and commissioned on 31.12.2011 and formally dedicated to the Nation by Hon'ble Chief Minister on 19.04.2012.

"Gujarat Solar Park" has been one of the most innovative projects in the Solar Energy Sector having large concentration/cluster of Solar Power generating units at single location, thereby reducing cost substantially (40%), and bringing down lower Solar Tariff to pave way for large scale development of Solar Power Projects.

Article - 2 : Tidal Energy is being used in France to generate Power



La Rance Barrage is the world's first tidal power station. The facility is located on the estuary of the Rance River, in Brittany, France. Because of its enormous tidal ranges the site was chosen that can exceed up to 13 meters. The plant was indicative of the French government's plan to use tidal power to supply much of its electricity needs, commissioned in 1966.

The plant generates 240 MW of power using 24 bulb-type turbine generators, spanning a diameter of 5.35 meters, incorporated in the barrage technology of the operation, each rated at 10 MW. During high tide, the dam at the plant catches the waters of the Atlantic in the bay, and at low tide the water returns back to the ocean. During this flow back to the ocean, the water passes through the 24 turbines, connected to the generators, producing power. The amount of electricity generated by this tidal plant could supply a city of about 300,000 people.

In 1997, the plant was upgraded by the installation of turbines able to spin during both the incoming and outgoing tides. The La Rance tidal plant has been in operation for thirty years without a major accident or breakdown. This plant produces a source of energy which is clean, renewable and sustainable. It has no impact on climate because it does not omit any greenhouse gases. The pattern of the tides is preserved so that the impact on species living in the estuary is minimal.

Like any large-scale hydrological alteration, tidal power stations also have economic and social impacts. The La Rance plant provided some unique regional development benefits because it was wide enough to support a road that connected two previously isolated communities, and it allowed further development of the local distribution network for raw materials and finished goods. The plant also supports a modest tourist industry. The mean water level in the pond is higher than it was before the construction which promoted an increase in boating and sailing activities. The facility attracts approximately 70,000 visitors per year and a canal lock in the west end of the dam permits the passage of 20,000 vessels each year between the English Channel and the Rance. The highway on the barrage linking Dinard and La Rance is used by 26,000 vehicles each day.



Economically and environmentally solar thermal power makes sense for Australia, as a major industry and a major power source for the 21st century. Australia has access to world-class solar thermal technologies, and proven strengths in construction and finance of large-scale project development. Australia has world-class solar resources and a clear need for large-scale renewable energy generation.

For Australia's solar-rich, solar-capable nation, solar thermal power is an industry offering huge domestic and international opportunities. In Australia, NSEC (North Sydney English College) contains the only high temperature solar thermal research facility of its type and is home to the largest high concentration solar array in the Southern Hemisphere.

The site has two high concentration solar thermal tower facilities: Solar Field 1 and Solar Field 2 Both fields are operated from an elevated control room housing the Centre's communications and control systems. Each field contains a power tower and a heliostat (mirrors) array which tracks the sun throughout the day, concentrating the solar heat to produce temperature in excess of 1000° Celsius (C).

The solar thermal technology concentrates the sun's free energy with a field of mirrors onto a heat receiver mounted on a central tower, and then uses that heat to generate electricity, and also stores the heat to generate electricity after sundown. The Chilean plant is to have storage capacity for 17.5 hours of operation after sundown, enabling it to provide 24-hour solar power.

Solar thermal technology can replace coal generators for reliable 'baseload' power supply, as the recent South Australian Parliament's Select Committee report into BZE's proposal acknowledges. Falling electricity demand in Eastern Australia provides the opportunity to close outdated coal plants and replace them with emerging technologies. This would be a huge win for jobs and manufacturing in Australia. It would be great for the health and prosperity of the people of Australia as well as the climate.

Article - 4: WIND ENERGY



In Gujarat, economic growth is opening up great potential for the development of renewable resources. For meeting the ever increasing energy demand of the state technological advancement in this sector is essential. In Gujarat, offshore and onshore Wind Power has the potential to generate and deliver sustainable supplies of clean, renewable electricity. Gujarat is blessed with a long coast line of 1600 km where the wind are adequate for conversion in to electrical energy and certain inland hilly areas have potential wind for the same. The state of Gujarat, in terms of power application, has a gross potential of 7362 MW of wind power generation.

Total power generation from these wind farms in Gujarat is 1,319,075 MW and total number of turbines used is more than 900. Suzlon, Alembic, Greeninfra, ERA Landmark India, Gujarat State Petronet Ltd. are some of the developers that helped in the development of above mentioned onshore wind farms. Charanka Solar Park, which is Asia's biggest Solar Plant, also is going to install windmills to generate power from wind, two wind mills each of 2.1 MW are already in process.

OFFSHORE WIND POWER:

Gujarat is very much keen to explore the offshore wind power projects and to keep it as one of the long term clean energy source in its energy portfolio. Gujarat is blessed with such a long coast line, 41 potential ports, major wind manufacturing base in Gujarat, strong presence of offshore oil and gas industry gives ample opportunities and potential to develop offshore wind power projects along the Gujarat coast.

ONSHORE WIND POWER IN GUJARAT:

Onshore wind farms in Gujarat state are located at stations mentioned below:

NAME	POWER GENERATION (MW)	INSTALATION
Abdasa	150,000	2009
Arikhana	10,500	2007
Bhavnagar	5000	2007
Bhogat	8750	2006
Bhuj	51,000	2008
Chandrodi	55,125	2008
Jamanwada	52,500	2012
Jamnagar	40,800	2011
Jangi	60,000	2008
Kadoli	11,100	2006-07
Kamand	7500	2007
Kandla	21000	2009
Kutch	4200	U/A
Lakhapur	16,500	2007
Danida	15,000	U/A
Lathedi	9000	2008
Mahidad	75,600	2014
Manaha	1500	2009
Mindiyali	5100	2009
Motisindhodi	53,100	2009
Navagam	9600	2008
Patan	299,300	U/A
Rajkot	52,500	2010
Raparghad	600	2007
Ratdi	600	2008
Samana	190,800	2009-11
Sanodar	1250	2009
Saurashtra	10,500	2010
Shikarpar	1650	2007
Surjabari	30,000	U/A
Suthri	7200	2007-08
Umrala	24,800	2007
Vanku	1800	2007
Visavaade	1800	2008-09

Table: Wind farms in Gujarat

*source: http://www.thewindpower.net/zones_en_5_gujarat.php

Key Issues & Challenges on the Agenda:

- Economics of Offshore Wind Power
- Financing Offshore Wind Projects
- Assessment of Wind Resource
- Offshore Electrical Infrastructure
- Issues & Challenges related to regulation
- Lessons Learned from Global Markets
- Maritime & Environmental Issues
- Issues related to Key Project Challenges & Technical

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Conserve
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