International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 1 Jan-Feb 2021, pp: 144-146 www.ijaem.net ISSN: 2395-5252

Bridging the Gap between Demand and Supply in Energy Sector By Means Of Natural Resources

Er.V.Anil Rajasekhar
Deputy Executive Engineer, APEPDCL Visakhapatnam,Andhra Pradesh, India

Submitted: 10-01-2021 Revised: 23-01-2021 Accepted: 26-01-2021

It is aware of that besides industrial growth, now a days most of the domestic equipment like washing machines, induction stoves, exhaust chimnies etc., are also being operated based on electricity. Hence there is huge hike in the demand of electricity with insufficient generation of supply of electricity.
The major conventional generators are three types

1. Thermal generation
2. Hydel Generation
3. Nuclear generation

Because of nuclear generation as there is fear in the public regarding accidents, the construction of new nuclear power plants has become difficult.

On the other side, it is aware of that the Hydel generation is only season based and in other than rainy season it is an issue of scarcity of water which is also used for irrigation and drinking purpose.
The most reliable generation throughout the year is Thermal (coal/gas based) generation, but for extension of the potential of new thermal power plants there are objections coming from the local public, because of the threat of loosing their cultivation crops to give land for the proposed thermal station, besides pollution issues.
Under the above circumstances, situation has drawn the concentration to look upon natural resources.
Electricity generation can be done through three types of natural resources.

1. Tidel generation
2. Wind generation
3. Solar generation

Tidel generation can be done with see waves based on the circular motion created by the waves, but construction of plant to withstand the force of the waves is cost effective.
Wind generation is based upon the availability of wind at reasonable pressure which we cannot expect all the time, hence generation could not be that much.

Solar generation is based upon purely the sun rays which can be availed for 10 hours (minimum) per day. Even on the cloudy days also, we may not expect full rated generation but certainly there will be certain quantum of generation.
Hence solar generation has become most reliable natural resource energy generation.

HOW TO GENERATE SOLAR ENERGY?

The sun rays can be extracted through the solar panels and storing the energy in the connected batteries at DC (Direct Current) potential and converting the DC potential into AC (Alternative Current) potential by means of invertors and the so generated AC supply to the consumer end.
The solar generation can be done at three levels.

1. Major Solar plants
2. Roof top solar plants
3. Small scale solar plants

1. **Major Solar Plants:-** In Major level solar plants, since large number of solar panels are to be provided, huge vacant land is required which can be provided at un-useful dry lands subject to availability.

The other probability to lay major plants is floating solar plants which can be provided on the water of small sized lakes/reservoirs subject to the possibilities to extract the benefit involved in it in the event of scarcity of land.

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10MW SOLAR POWER PLANT,
VISAKHAPATNAM PORT TRUST

FLOATING SOLAR POWER PLANT

2. **Roof Top solar plants :-** In respect of roof top solar plants each residential building owner can opt for installation of roof top solar power plants at his required capacity, because of which he need not depend on conventional power supply. There is an advantage to the consumer also, he need not reflect to the breakdowns occurred on the conventional lines for want of power supply, but he can use the conventional supply as a standby as well. Further there is an additional advantage also to the consumer, if he gives away any surplus solar generation into the grid, the local departments are also paying for the generated units so recorded as export in the net meter installed at the consumer end.

ROOF TOP SOLAR POWER PLANT

3. **Small Scale solar plants** :- Small scale solar power plants can be utilised for electrification of small size villages. This can be widely availed in the remote and interior villages, mostly in tribal/agency areas where the villages are isolated and situated on the hill tops, where laying of conventional electrical lines is a tough task.

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What is a net meter ?

Net meter is a device install at consumer premises to record the actual import drawn from the conventional grid and also records export sent from the solar generation to the grid, together with the net resultant consumption.

Hence switching on to solar generation has become important under current energy crisis.

An individual may also opt voluntarily for self solar generation without depending on the government/electricity department for his own requirements.

The above measures can definitely bridge the gap between the demand and supply of electricity.

International Journal of Advances in Engineering and Management
ISSN: 2395-5252

IJAEM

Volume: 03 Issue: 01 DOI: 10.35629/5252

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Email id: ijaem.paper@gmail.com