

Green Energy Corridor

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Abstract:

Presently days with the developing populace and vitality request, we should take an inexhaustible alternative of vitality source, and we should remember that vitality ought not to cause contamination and other characteristic perils. The Government of India in 2013 reported about this program worth Rs. 43,000 Corer to empower the progression of sustainable power source into the National Grid Network and decrease the exhaustible utilization assets. A Green Energy Corridor venture for clearing of sustainable power source from age focuses on the heap focuses by making intra-state and between state transmission frameworks is under execution in inexhaustible asset-rich states for the imaginable inexhaustible influence limit expansion during twelfth Five Year Plan period.

Keywords: Green energy corridor, Green energy sources, wind power, solar power.

I. INTRODUCTION

On account of strong research, new efficient power vitality advancements are all over, lessening our reliance on non-renewable energy sources. However, what is it and for what reason is it any superior to coal or oil. Efficient power vitality originates from normal sources, for example, daylight, wind, downpour, tides, plants, and geothermal heat. Environmentally friendly power vitality characterized as vitality originates from normal sources, for example, daylight, wind, downpour, tides, plants, green growth, and geothermal warmth. These vitality assets are inexhaustible, which means they are normally recharged.



Fig. 1 – green energy

II. INSTANCES OF GREEN ENERGY SOURCES

We can't depend on petroleum products for creating the heft of vitality that is utilized by people. As of late, a few unique examinations have been distributed that have demonstrated the hurtful impacts of utilizing an excess of vitality from non-renewable energy sou. First of all, petroleum products contribute straightforwardly to a dangerous atmospheric deviation. Warm wellsprings of vitality, for example, coal and oil, discharge a lot of warmth and ozone harming substances into the environment, which is gradually draining the ozone layer and causing an Earth-wide temperature boost. Notwithstanding, ecological mindfulness has likewise been on the ascent starting late, and numerous nations and private associations have started to concentrate on sustainable wellsprings of vitality. Here are the main five environmentally friendly power sources energies being used today's.

1. HYDRO ELECTRIC POWER

One of the most generally utilized wellsprings of efficient power vitality is hydroelectric control. Hydroelectricity is created through the intensity of water. It uses the gravitational power of water to deliver power. After development, the mind-boggling produces positively no waste at all. Practically 19% of the world.

1. WIND POWER



Fig. 2 – Wind power



Fig.3. Hydro electric power

2. NUCLEAR POWER

Despite the risks with nuclear energy, it is one of the safest and cleanest sources of energy. According to a particular study, within the next five years, one new reactor is expected to start operating every five days



Fig. 4 – Nuclear power

4. Compressed Natural Gas



Fig.4. Compressed Natural Gas

5. Solar Power



Fig.5. Solar Power

6. RENEWABLE RICH STATES IN INDIA

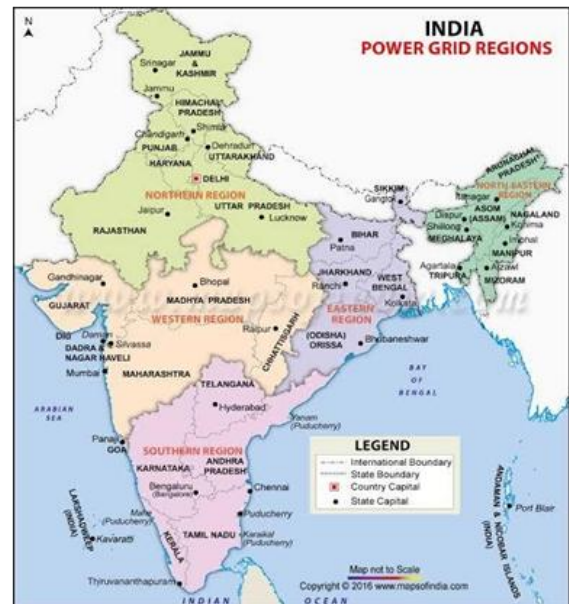


Fig.6. Renewable rich states

1. Tamil Nadu
2. Rajasthan
3. Karnataka
4. Andhra Pradesh
5. Maharashtra
6. Gujarat
7. Himachal Pradesh
8. Madhya Pradesh

I. NEED GREEN ENERGY CORRIDOR IN INDIA

It is an innovation rather than a fuel. Renewable vitality is steady. It is sheltered, bottomless, and clean to utilize when contrasted with petroleum products. The venture targets incorporating enormous scale inexhaustible age limit expansion with the fundamental framework. Grid strength and security are the principal worries for India by and by. The Ministry of Power has proposed to set up Renewable Energy Management Centres (REMCs) to help incorporate renewable into the lattice. These focuses will be answerable for anticipating and planning sustainable power source age at state and local levels and organizing with state burden dispatch focuses (SLDCs).

Small hydropower	13%
Biomass power	13%

1. EXISTING RENEWABLE CAPACITY

The absolute introduced limit in India is around 200 GW (As on 31.03.2012). The limit from traditional sources to be specific coal, gas, diesel, atomic, and enormous hydro sums to about 88% offer and non-ordinary/tireless commitment is about 12%. The blend introduced a limit of different kinds of ages (GW) on all India level development.

2. THE TRAJECTORY OF RENEWABLE CAPACITY

India has been ceaselessly advancing in regular just as inexhaustible limit expansion. Since the ninth Plan period, a portion of the sustainable limit has expanded from 2% to 12% as of today (around six overlay increments). Power age because of sustainable has additionally expanded to about 4% in by and large power age blend as on today. With such mollified development, the infiltration of inexhaustible.

Resources	Grid-interactive capacity (%)
Wind power	70%
Solar power	4%

GOVERNMENT SCHEMES

1. FOR SUN BASED VITALITY

Government Subsidy conspires for housetop nearby planetary group Both the Central Government, just as State Nodal Agencies (SNAs), offer endowment plans to the individuals for introducing housetop PV frameworks. This urges individuals to abuse sustainable power in the Indian network has expanded. By and by in our nation, about 25,000 MW matrix intuitive just as 700 MW off-network RE age limit is accessible. Out of this, about 70% lattice inherent limit is contributed by the breeze alone. The portion of various RE assets in framework intuitive introduced limit is given at beneath sources and to cut their powerbills.

2. FOR WIND VITALITY

Retrofitting of transmission lines and wind turbine to dodge flying creature impact in GIB living spaces of Rajasthan and Gujarat.

3. FOR BIOMASS VITALITY

Plan to Support Promotion of Biomass-Based Cogeneration in Sugar Mills and Other Industries in The Country.

4. FOR HYDRO VITALITY

Service of New and Renewable Energy has been vested with the duty of growing Small Hydro Power (SHP) extends up to 25 MW station limits. The evaluated potential for control age in the nation from such plants is around 20,000 MW. A large portion of the potentials in the Himalayan States as water way based ventures and in different States on water system channels.

III. PROGRESS OF GREEN ENERGY CORRIDOR IN INDIA

- Work on the first hall, the Raigarh Pugalur 800 kV ultra HVDC (UHVDC) framework,

began in May 2017.

- Development of the transmission arrangement for control departure from up and coming sun-powered parks is as of now in progress in numerous states.
- Many high limit passageways have been considered for improving the nation over. The nation positions fourth all-inclusive, as far as wind power introduced a limit, after China, the USA, and Germany.
- The nation's aggregate introduced limit arrived at 20GW sunlight based and 32.75 GW for wind.



Fig 8 - Scheduling of Thermal Plant

IV. CONCLUSION

- The venture is significant for reinforcing and making a dependable transmission foundation, departure of influence from sustainable power source ventures, and inexhaustible rich states and expanding the portion of sustainable power source age. The sustainable power source age is expanding at a quick pace in India.
- The pace should keep improving later on. It is, in this way, high-time that the nation sets itself up to ingest and transmit these immense sustainable power source limits.
- (ABB) Group is executing the venture by state-run Power Grid Corporation of India (PGCIL) in the organization with Bharat Heavy Electricals Limited (BHEL).

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REFERENCES

1. <https://mnre.gov.in/environmentallyfriendly/power/vitalityhallway>
2. <https://pib.gov.in/newsite/PrintRelease.aspx>
3. <https://en.wikipedia.org/wiki/>
4. <https://energy.economictimes.indiatimes.com>
5. <https://www.powergridindia.com/locales/>
6. Power grid (PGCIL) official site.