Concerns with Solar Energy

What is the issue?

While India is more on keen on solar energy for carbon limiting renewable energy path, counter arguments are in rise stating that solar energy is not the best option for India.

What is India's status and target on solar energy?

- The Indian renewable energy sector is the **fourth** most attractive renewable energy market in the world with **fifth rank** in solar power, as of 2020.
- **Current status** - India's current solar module manufacturing capacity is limited to 15 GW per year.
- India only produces 3.5 GW of cells currently.
- India has no manufacturing capacity for solar wafers and polysilicon ingots, and currently imports 100% of silicon wafers and around 80% of cells even at the current deployment levels.
- India remains **dependent on import** of solar modules for field deployment.
- **Target** - By 2030, India is targeting about 500 GW of renewable energy deployment, out of which 280 GW is expected from solar PV.
- This necessitates the deployment of nearly 30 GW of solar capacity every year until 2030.

The International Solar Alliance (ISA) was a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions. It is guided by its 'Towards 1000' strategy.

What are the advantages?

- **Safe** - Use of solar energy will eliminate unsafe consequences.
- **Combats Climate Change** - Solar power can restrict climate change as it produces no carbon emissions.
- **Decentralized Electricity Source** - Electricity can be generated using photo - voltaic cells installed on roof - tops of individual buildings.
- **Green energy in rural area** - This is crucial for agri - business in farms for running irrigation, greenhouses, and crop and hay dryers, making agriculture risk - free.
- **Employment Generation** - For small businesses engaged in installations, followed by solar designers, sales person and service professionals.

What are the misconceptions?

- **Wrong comparison** - Solar power is wrongly compared with coal electricity at the

load centre, instead of at the pithead, which costs about half that of the load centre.

Pit-head power plant means any captive or stand-alone power station having captive transportation system for its exclusive use for transportation of coal from the mining end, up to the power station.

- Solar electricity is intermittent and coal electricity is continuous.
- So, the cost of storage by battery has to be added.
- **Cost** - The true economic value of coal is even lower than its market price, since the cost of labour in mining carries a shadow price of zero (they being unskilled workers who would be unemployed otherwise).
- **Government's push** - Solar energy has been handicapped with subsidies and concessions by the government, and forcing it on the industry and hapless discoms through state policy.
- **Slow progress** - This is clear from the slow progress as the programme is missing its target by 40%-50%.

What is the way head?

The Three Gorges project of China on the Yangtze is the world's biggest hydro-electric project.

- **Increase hydro usage** - The hydro energy can be tapped as it is both low carbon and least cost.
- **Best practices** - India has utilized **only about 15%** of its hydro potential whereas the U.S. and Europe have utilized **90% and 98%** of their potential, respectively.
- **Advantages of hydro energy**
    1. Cheapest energy source
    2. Very low indirect emissions
    3. Increasingly within the reach of private users
    4. Production can be tailored to demand

Quick facts

Solar Schemes

- National Solar Mission (NSM)
- Development of solar parks and ultra-mega solar power projects
- Grid connected solar rooftop programme
- Wind solar hybrid policy
- Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM) Scheme

References

1. The Hindu | Solar energy is not the best option for india
2. PIB | Schemes launched by the Government to promote Solar Energy
3. ISA | International Solar Alliance (ISA)

