



Substantial Investment Subsidies for Solar Power

Why in News

In recent years, the Government of India has introduced **several solar irrigation schemes** like [PM KUSUM](#), [Suryamitra Skill Development Programme](#), [SPaRC Program](#), etc.

- These schemes **seek to provide Substantial Investment Subsidies (SIP) and incentivise farmers to conserve groundwater and energy**, increase farmer income and enable more efficient irrigation.
- SIPs promise a low carbon footprint, consistent energy availability, zero fuel costs and low operational costs. However, there are **some issues associated with these schemes**.

Key Points

▪ About Substantial Investment Subsidies:

- The Government of India through PM KUSUM has been promoting solar irrigation pumps by offering Substantial Investment Subsidies (SIP).
- The objective of SIP is to **provide subsidies to farmers for buying and installation of solar pumps and power plants**.
- The farmer will be able to use the generated solar power to meet the irrigation needs and the **excess solar power will be sold to power [distribution companies \(DISCOMs\)](#)** at pre-fixed tariff.

▪ Need:

- The **massive power subsidies in the Indian agriculture sector** has led to **development of the irrigation-energy nexus**.
 - Electricity in the agriculture sector is supplied at subsidised rates.
- This irrigation-energy nexus is **characterised primarily by** depleting groundwater and a growing debt burden of power [DISCOMs](#).
 - **SIP can help in breaking this irrigation-energy nexus** and provide other benefits.

▪ Advantages of Offering SIP:

- **Eco-friendly Approach:** SIPs will help move towards a **zero-carbon footprint in the groundwater economy** by decreasing reliability on fossil fuel-based electricity production.
- **Providing Water and Electricity Security:** The **west-south corridor** spanning from Punjab to Tamil Nadu has **lower groundwater availability** than the **Ganga-Brahmaputra belt**.
 - Farmers in this corridor also face frequent power cuts, low voltage and receive stable electricity only at night.
 - The west-south corridor will benefit significantly from introducing SIPs since the region has **many solar hotspots and receives peak sunlight hours**.

- **Reducing Burden of DISCOMs:** It will also help relieve the DISCOM's subsidy burden from Rs 30,000-35,000 per year per SIP.
- **Favourable Condition for Solar Energy Development:** SIPs now, are more affordable, owing to the falling price of solar photovoltaic [PV] cells.
 - The recent rise in diesel prices has naturally increased the costs of irrigation.
 - Therefore, introducing SIPs may boost agricultural growth while curbing the need to lay rural electric networks.
- **Associated Challenges:**
 - **Over-exploitation of Groundwater:** The only possible drawback of SIPs could be the risk of the over-exploitation of groundwater since on-demand cheap power will always be available after introduction of SIPs in the corridor.
 - **Favours Medium and Large-scale Farmers:** The schemes that are launched for solar energy promotion, gives preference to farmers who are already using water-saving micro-irrigation systems.
 - **High Initial Cost:** Despite subsidies, the initial capital investment remains high, raising questions about the viability of SIPs.
 - Moreover, the operation and maintenance of solar PV systems require trained professionals and machine components, which may be hard to find in rural areas.
 - **Costly Grid Connection:** The financial costs associated with grid connection can be enormous.
 - According to the Centre for Science and Environment, installing a 100-kilowatt solar-powered system to an electricity grid costs around Rs 85 lakh.
 - Due to this, SIPs might not be the silver bullet to solve the irrigation-energy nexus.

Way Forward

- Awareness programmes about efficient water management practices and the benefits of SIPs must be undertaken through existing networks of farmers.
- Apart from promoting Joint Liability Groups (JLG) among small and marginal farmers, their inclusivity in existing solar irrigation schemes must also be ensured.

Source: DTE

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