

## **Clean Energy for Rural Economy**

### **What is the issue?**

\n\n

\n

- Lack of access to electricity remains a huge barrier for rural businesses.
- It is high time that the potential for clean energy innovations is tapped effectively.

\n

\n\n

### **What is the dire need?**

\n\n

\n

- The rural economy is underserved by existing electricity sources.
- It relies on human labour or fossil fuels such as diesel.
- It thus affects livelihood through various income-generation opportunities.
- Clean energy innovations for agriculture and non-farm micro-enterprises could help.

\n

\n\n

\n

- It can complement the government's electrification strategy which is more household-oriented.
- This can be achieved by leveraging distributed renewables coupled with energy efficiency.

\n

\n\n

### **What are the concerns in agriculture?**

\n\n

- \n
- About 40% of the agriculture produce is wasted before reaching consumers.
- \n
- The market value of the produce does not get reflected in the farmer's revenues.
- \n
- Moreover, their real incomes remain low because of rising cost of agri-inputs.
- \n
- These include seeds, fertilisers, pesticides, irrigation equipment and services, among others.
- \n
- These issues are amplified in the case of small and marginal farmers (86% of cultivators in India).
- \n
- The fragile economic condition makes them more vulnerable to the effects of climate change.
- \n

\n\n

### **How can clean energy help?**

\n\n

- \n
- Innovative technologies could reduce input costs and deliver higher farm outputs, better market opportunity.
- \n
- These may include clean energy-based cold chain, seed sowing, fertiliser application, pesticide spraying, or irrigation.
- \n
- This will also aid innovations such as solar-powered milking machines, and charkhas (spinning wheels).
- \n
- In this context, just 3 activities have a total market potential of about \$40 billion.
- \n
- These are pesticide spraying, rice transplanting, and harvesting of grain crops.
- \n

\n\n

### **How is the non-farm sector?**

\n\n

- \n
- The non-farm sector also suffers from lack of reliable electricity access.
- \n
- The enterprises include that on custom tailoring, food processing, poultry and livestock rearing, and hairdressing, etc.
- \n
- Lack of electricity has limited the number of non-farm activities undertaken in rural areas.
- \n
- These are indicative of the latent demand in India's rural non-farm economy.
- \n
- Clean energy-driven and energy-efficient machines could help meet existing demand.
- \n
- It can as well offer hope for addressing latent demand.
- \n
- The rural population could find more viable non-farm activities to supplement farm incomes.
- \n

\n\n

### **What are the lacunae?**

\n\n

- \n
- Billions of dollars worth of market opportunities remain untapped.
- \n
- The path from concept to commercialisation faces technical failure and market failure.
- \n
- The deployment of these innovations at scale continues to be plagued by
- \n

\n\n

- \n
- i. high upfront cost of distributed renewables
- \n
- ii. low and fragmented rural demand
- \n
- iii. paucity of long-term debt to end-consumers
- \n
- iv. missing incentives to adopt energy efficient practices
- \n

\n\n

## What lies ahead?

\n\n

\n

- Council on Energy, Environment and Water (CEEW) is planning to build an ecosystem for clean energy innovations for rural economy.

\n

- The platform would provide

\n

\n\n

\n

- i. affordable market intelligence to enterprises

\n

- ii. facilitate strategic pilots

\n

- iii. enable enterprise and consumer financing

\n

- iv. connect with MSMEs to help manufacture and distribute at scale

\n

- v. engage with policymakers to improve technology transfer

\n

\n\n

\n

- The commercial deployment of clean energy innovations needs partnerships.

\n

- It must include the public institutions, philanthropic foundations, private firms, and the international development community.

\n

\n\n

\n\n

**Source: Business Standard**

\n

