Discussion Brief III

Green Irrigation using solar pump sets for West Bengal

What the Central Government says?

1. Central Scheme: Solar Pumping Programme for Irrigation and Drinking Water
2. The National Water Policy, 2012
   • What it says?
     Solar Pumping Programme for Irrigation and Drinking Water
     ✓ Duration of the programme: Five years from 2014-15
     ✓ Proposed: Sanction one lakh pumps for 2014-15
     ✓ Expectation: By 2020-2021, at least ten lakhs (1 Million) solar pumps will be deployed for irrigation and drinking water purpose in the country
     ✓ Implementation through State Nodal Agencies and NABARD

The National Water Policy, 2012
   ✓ The policy stresses on the need to acclimatise to strategies for improving water application methods like micro irrigation, drip irrigation, sprinkler irrigation, automated irrigation operation, evaporation-transpiration reduction and many others to adapt to climate change. Increasing the water use efficiency and bettering the demand side management would also encourage a reduced usage of pumping technologies and thereby reduce the energy consumption
   ✓ The policy also prescribes to minimize the over-drawl of ground water by regulating the use of electricity for its extraction. It mentions about the importance of using separate electric feeders for pumping ground water for agricultural use

   • Highlights:
     ✓ MNRE will provide 30% capital subsidy to farmers for installation of solar pumps through state nodal agencies. The state governments can give additional subsidy through own funds. The government presented 40% subsidy with mandatory loan to farmers for irrigation purpose through NABARD
     ✓ The ministry has issued supplementary guidelines for 1,00,000 solar pumps during 2014-15 and Rs 353.50 crore was released to various agencies

State level policies

1. Co-generation and Generation of Electricity from Renewable Sources of Energy Policy, 2012, Govt. of West Bengal
2. West Bengal State Water Policy, 2011
   • What do they say?
     ✓ The policy on Co-generation and Generation of Electricity from Renewable Sources of Energy does not provide any roadmap towards enhancing the usage of solar pumps and other RE appliances for irrigation
     ✓ The West Bengal State Water Policy, 2011 highlights the need to create a tariff regulatory body for pricing of water for irrigation purpose

West Bengal Action Plan on Climate Change

- **What it says?**
  - The water demand will reduce over the years, owing to the usage of more water conservation technologies. While the water demand for the irrigation sector was 72.5% in 2001, the same has been predicted to be only 25.9% in 2051.
  - West Bengal consumed 27,821 MU of electricity in FY 2008 with the agriculture sector consuming 4% of the total energy consumed. (Industrial consumers consumed the maximum: 47% of the total annual energy consumption)
  - The action plan has estimated an energy saving potential of 333 MU from the agriculture sector (only for irrigation pump sets) as against an annual consumption of 1,110 MU in 2007–’08

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<th>Total Sales of Power in West Bengal &amp; India: Share of Agriculture*</th>
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<td><strong>Agriculture Sector</strong></td>
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*Source: Power and Energy Division, Planning Commission, GoI

**Overall Challenges:**

- Lack of state level initiatives to promote solar pumping systems and dearth of schemes/policies to attract investment for the same has been a challenge towards its greater uptake in the state
- Availability of loans from financial institutions for solar pumps have been a major challenge in the sector
- Although, the rising cost of diesel and frequent power outages have been a threat to the diesel and electric pump sets, solar pump sets have never been of much preference to the end-consumers
- Lack of after sales service, like maintenance support in the remote places has also been a challenge for the solar
- Disbursement of subsidies have been a time consuming process and therefore have never been appealing to the probable consumers
- The relatively higher initial capital investment has been a major challenge

**Initiative(s) by the state:**

- **Residents’ of 51 enclaves in Cooch Behar set to get solar water pumps for irrigation:** The state government in the first phase will set up 212 units in these enclaves, which would cost around Rs 9 lakh/unit and would have the capacity to channelize water across 80 to 100 bighas. This when completed, in the first phase, would benefit 6,360 families.
- As on 31st March, 2014 there were 48 off-grid/decentralised solar photovoltaic pumps installed in West Bengal

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2 Figure 5.2, Current and future water demand by sector in West Bengal, West Bengal Action Plan on Climate Change