

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 Water¹
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

¹ <http://mnre.gov.in/file-manager/UserFiles/Scheme-for-Solar-Pumping-Programme-for-Irrigation-and-Drinking-Water-under-Offgrid-and-Decentralised-Solar-applications.pdf>

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 2051²
- ✓ 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

Total Sales of Power in West Bengal & India: Share of Agriculture*		
	Agriculture Sector	
	West Bengal	India
2007-08	6.99	22.54
2008-09	4.80	22.41
2009-10	6.72	23.17
2010-11	8.35	21.58
2011-12 (P)	5.84	22.70
2012-13 (RE)	5.05	23.28
2013-14 (AP)	6.47	22.45

Abbr: RE- Revised Estimate, AP- Annual Plan, P-Provisional

*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 families³
- ✓ As on 31st March, 2014 there were 48 off-grid/decentralised solar photovoltaic pumps installed in West Bengal⁴

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

³ Source: Indian Express, 24 August, 2016 (<http://indianexpress.com/article/india/india-news-india/cooch-behar-enclave-residents-solar-water-pump-irrigation-india-bangladesh-mamata-banerjee-2992989/>)

⁴ Energy Statistics, 2015 (http://mospi.nic.in/mospi_new/upload/energy_stats_2015_26mar15.pdf)