The 600MW Omkareshwar Dam Floating Solar Project

-Omakreshwar Dam, Khandwa, Madhya Pradesh, India

India’s commitment under the Paris Agreement targets to reduce the Greenhouse Gas emission intensity by 33-35%, below 2005 levels. The country also set a target of mainstreaming renewable energy sources to about 40% of India’s power capacity by 2030 which translates to 450 Gigawatts (GW).

The country has 100 GW of capacity already installed and is looking at options to scale up the deployment of renewable energy sources.

Madhya Pradesh has about 56.8 km² of surface water and given the increasing cost of land, floating solar makes a great option for non-renewable energy sources and is a focus area for the state. This translates to a potential of 20 GW. The 600 Megawatts (MW) Floating Solar project is the first step in harnessing this potential.

**Advantages of Madhya Pradesh**

- Strategic location and excellent connectivity.
- Forward-looking progressive policies and incentives to promote the growth of industries.
- Ranks 7th in ease of doing business in India. And is among the top achiever states.
- Natural resource base with abundant water, land resources, and power generation.

The 600MW Omkareshwar Dam Floating Solar Project is the single largest grid connected project on water body till date.

### The Project

Harness the water available at Omakreshwar Dam to generate renewable energy.

### Project Outcomes

Bankable, investment plans and inclusive business solutions are being developed to translate green growth plans and strategies into green investment plans and projects for public and private sector financing.

**Key Highlights**

- The project is an initiative by the Government of Madhya Pradesh (GoMP) under the Atmanirbhar Madhya Pradesh Vision. Implementation of the project is being done by Rewa Ultra Mega Solar Limited (RUMSL), the operational arm of GoMP, which is responsible for developing the solar park infrastructure under a plug and play model to enable the private sector to develop the Floating Solar Project.

- With an average difference of 3 meters between the Full Reservoir Level (FRL) & the Minimum Drawn Level (MDDL), the reservoir provides an excellent water surface to generate renewable energy.

**Total Investment:** USD 350 Million

**Capital Structure:** 30% Equity, 70% Debt

**Transaction Structure:** Public-Private Partnership

**Project Bankability:**

- Access to climate/carbon finance
- Strengthened supply chain through localized manufacturing

**Impacts:**

- 1,314 Million Units of energy production /annum sufficient to meet the annual power needs of 550,000 homes in the state of Madhya Pradesh.
- > 1.2 Million tons of CO2 mitigated.
- ~5,500 of direct green jobs created.

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- Focus on promoting renewable energy generation with a potential of 35 GW, of which 5.4 GW has been installed.
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- Sustainable retail power tariffs, given that 9% of the power demand is met from renewable energy sources with a target to reach 17% by the end of 2022.

**GOGGI’s Key Intervention Areas**

- **Strengthening Technical Report**
- **Monetizing CO2 emission reductions**
- **Concessional Financing**
- **Transaction Advisor**

Independent review of technical design reports/ studies.

Forward contract to sell emissions gains for offsetting higher power costs for power distribution companies.

Leverage GOGGI global relationships to improve access to low-cost finance for the private sector.

Support bid process management to bring private sector developers.
**Highlights of Project Development**

- Solar power park infrastructure development which includes power evacuation to the grid point through a 33/220 KV network at an approximate distance of 40 km. This will be developed by RUMSL using long-term low-cost financing from the Multilateral Development Bank and Government of India grant.

- Development of floating solar project by private developers selected through a tariff-based Reverse Auction Bidding Process.

- Single/multiple developers will be selected to implement the solar project inside the solar park within the stipulated time.

**Bankability of the Project**

- Power off-take agreement with creditworthy entities like power distribution companies of Madhya Pradesh and Indian railways for 25 years.

- Equitable distribution and risk-sharing with power off-takers on key aspects like minimum off-take guarantees, compensation in case of defaults, change in law, etc.

- Multi-layer payment security for power produced through Letter of Credit and Payment Security fund.

- Access to carbon financing to reduce power tariffs.

- Availability of key project components locally to reduce solar project development costs.

**Partners**

The Madhya Pradesh Government will enable the project development through supportive policies, approvals and other incentives.

Rewa Ultra Mega Solar Ltd (JV of Government of India and Madhya Pradesh) will act as the nodal agency for developing the solar park infrastructure.

**About GGGI**

Global Green Growth Institute, headquartered in Seoul, Republic of Korea, is a treaty-based international intergovernmental organization dedicated to supporting and promoting strong, inclusive, and sustainable economic growth in developing countries and emerging economies.

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**Global Green Growth Institute is an independent technical and financial advisor to the Government of Madhya Pradesh for the project.**

**Structure of Transaction**

- Policy
  - Government of Madhya Pradesh
  - MOP/MNRE

- Regulatory
  - MPNERC
  - CERC

- Park Operator
  - NHDC
  - NVDA

- Connectivity Agreement

- Power evacuation (to grid point)

- Tariff based Reverse Auction to be set by RUMSL for selection of four developers

- Tariff

- Lease Agreement

- Launch Charges

- Implementation Service & Connectivity Agreements

- Coordination Agreement

- Power Purchase Agreement (PPA)

- Lease Agreement

- Payment Coordination Approvals

- Commercial Arrangement

- Lease Agreement

- Connectivity Agreement

- Coordination Agreement

- Payment Coordination

- Commercial Arrangement

- Government of Madhya Pradesh

- MOP/MNRE

- MPERC

- CERC

- NHDC

- NVDA

- MPPTCL

- PGCIL

- MPPMCL

- Ministry of Power

- Ministry of New Renewable Energy

- Madhya Pradesh Electricity Regulatory Commission

- Central Electricity Regulatory Commission

- Narmada Hydroelectric Development Corporation

- Narmada Valley Development Authority

- Madhya Pradesh Power Transmission Company Limited

- Power Grid Corporation of India Limited

- Madhya Pradesh Power Management Company Limited