



Confederation of Indian Industry

Renewable Energy Procurement by C&I Consumers in Madhya Pradesh





Renewable Energy Procurement by C&I Consumers in Madhya Pradesh

Renewable Energy Demand Enhancement (REDE) Initiative

The Renewable Energy Demand Enhancement (REDE) Initiative for Commercial & Industrial (C&I) consumers aims to build an alliance among corporate buyers for increasing commitment to renewable energy procurement and catalysing solutions for addressing challenges that are significantly restricting demand.

The corporate sector accounts for about 50 per cent of total electricity consumption in India, most of which comes from conventional fuels. Increasing C&I consumer commitment for shifting to renewable power sources and aggregating their demand will provide significant predictable offtake for the expected volume of RE power.

While the business case for RE adoption is stronger than ever before, the process is very challenging for corporate buyers. Uncertain, complex, and often conflicting national and state policies and regulations; inadequate awareness and compliance of implementation processes; technology related issues; real and perceived costs; and operational inertia are the major deterrents to large-scale offtake of RE. Addressing these issues requires informed and concerted efforts by all stakeholders.

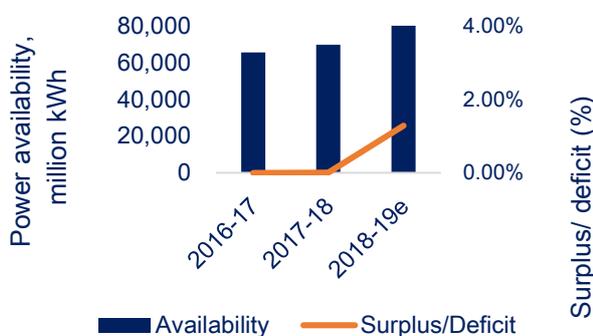
About the Study

The study was undertaken by Bridge to India with a purpose of seeking inputs and feedback on policy and regulatory, and other challenges being faced by C&I customers, project developers and discoms in the state of Madhya Pradesh. The inputs have been collated through direct interaction with individual C&I customers in Madhya Pradesh in a RE buyer’s day organised by WWF India and CII, and also includes inputs from one-on-one interactions with over 30 stakeholders including C&I customers, developers, and discoms. All the stakeholders’ inputs have been compiled to provide a perspective for holistically addressing the barriers to RE procurement. The findings of the study are detailed in the following sections.

1. Introduction

Madhya Pradesh has a peak power demand of 12,338 MW, which has grown at an average of 6.40% in the last two years. The state has bridged its demand supply gap and has a minor power surplus. Total renewable energy capacity in the state was 4,825 MW as on 31 July 2019.

Figure 1: Power availability scenario



Sources: CEA executive summary on power sector, May 2019; CEA load generation balance reports 2016-17, 2017-18, 2018-19

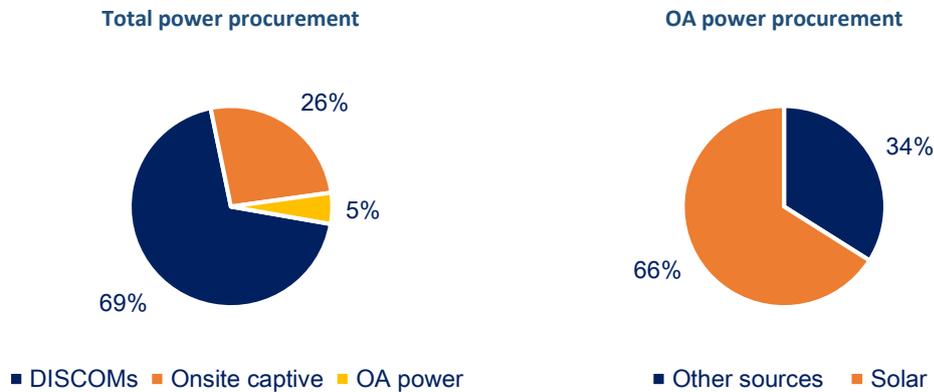


DISCOMs are mandated to comply with a 4% solar and 8% non-solar RPO for 2019-20 with 0.5% and 2% increase respectively every year until 2021-22.

2. Power Procurement by C&I Consumers

C&I consumers account for 25% of total power consumed in the state, equivalent to about 3,084 MW. They procure most of their power from DISCOMs (69%) and onsite captive sources (26%). Only 5% of power is procured from open access (OA) sources. Out of this, solar accounts for 66% share (368 MW) and other sources account for the remaining 34% (188 MW).

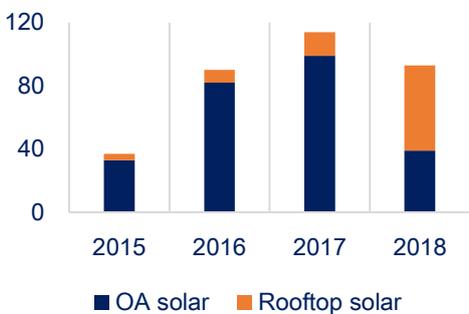
Figure 2: Power procurement by C&I consumers



Source: BRIDGE TO INDIA research

In 2016 and 2017, exemption from cross subsidy surcharge (CSS) and additional surcharge (AS) encouraged high OA solar capacity addition. However, activity has considerably slowed down after a change in regulation leading to withdrawal of CSS exemption and imposition of AS in November 2017.

Figure 3: Solar capacity addition by C&I consumers, MW



Source: BRIDGE TO INDIA research



Only 39 MW of OA solar capacity was added in 2018. Rooftop solar power installations have grown more consistently. Total rooftop solar capacity in the state is estimated at 98 MW as on 31 December 2018.

3. Regulatory and Policy Framework

The state had issued attractive solar and wind power policies in 2012 and a policy for decentralised RE systems in 2016 with several financial incentives.

Table 1. RE policies/incentives in Madhya Pradesh

	OA	Rooftop solar
Exemption from CSS (subject to regulatory review)	Y	NA
Electricity duty exemption for 10 years	Y	NA
100% banking of power with banking charges of 2%	Y	NA
Deemed approval for intra-state OA, days	45	NA
50% stamp duty exemption for private land	Y	NA
Net metering and gross metering connection: Exemption from CSS, banking and wheeling charges; deemed purchase of unutilised banked energy at Average Power Purchase Cost (APPC). Wheeling and banking charges are applicable on gross metering	NA	Y
Deemed approval for net metering up to 1 MW, days	NA	21
Connectivity approval for net metering by DISCOM, days	NA	7-60

In addition, SLDC charges are not applicable for renewable power as per the SLDC tariff order for 2018-19 issued by the Madhya Pradesh Electricity Regulatory Commission (MPERC). Transmission charges are exempted for RE connected at below 132 kV level. As per forecasting and scheduling regulations in Madhya Pradesh, deviation charges are applicable on solar and wind projects for over/under injection of more than 10% for intra-state consumption and more than 15% for inter-state transactions.

4. Cost of Power

OA charges in Madhya Pradesh add up to INR 2.72/ kWh and INR 1.31/ kWh for third party sale and captive consumption respectively. In addition, wind power generators pay INR 0.27/ kVARh for reactive power.



Table 2. OA charges for intra-state solar power for industrial consumers for 2019-20, INR/ kWh

	CSS	Wheeling loss	Wheeling charge	Transmission loss	Banking charge	AS	Total
Third party sale	1.41	0.21	0.28	0.09	0.01	0.72	2.72
Captive consumption	0	0.21	0.28	0.09	0.01	0.72	1.31

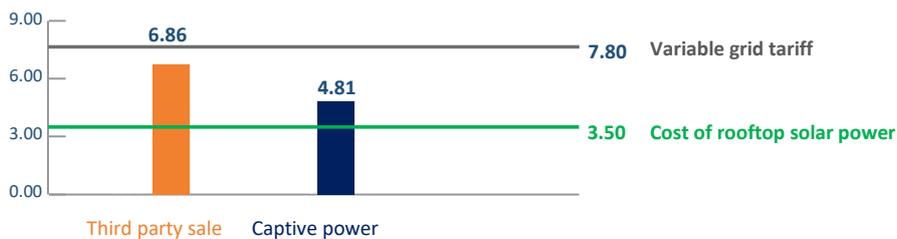
Source: BRIDGE TO INDIA research

Notes:

- i) CSS is assumed as applicable for industrial consumers connected at 33 kV.
- ii) Cost of OA solar power is considered at INR 3.50/ kWh.

Landed cost of solar power for third party sale has increased significantly after imposition of CSS and AS. Hence, there is a shift to group captive power model. However, the DISCOMs are offering a one-year grid tariff rebate of INR 1.00/ kWh and INR 2.00/ kWh respectively to consumers who switch to grid supply from third party OA or captive power.

Figure 4: Landed cost of solar power for industrial consumers, INR/ kWh



Source: BRIDGE TO INDIA research

Notes:

- i) Variable grid tariff includes variable energy charge, fuel surcharge and 9% electricity duty. It does not include fixed (demand) charges.
- ii) Electricity duty on third party sale, calculated at 9% of applicable grid tariff and fuel cost adjustment is included.
- iii) Connection voltage is assumed at 33 kV.
- iv) Cost of rooftop solar power is estimated assuming system life of 20 years.
- v) Cost of OA solar power is considered at INR 3.50/ kWh.



5. Barriers to RE Procurement Using OA

Imposition of CSS and AS

Madhya Pradesh was one of the most active states in open access for renewable energy. The policy framework and its implementation since 2012 has been generally favourable until the re-imposition of CSS and AS in 2017.

Charging of Electricity Duty

There is an electricity duty exemption for 10 years provided in the state policy. However, electricity duty of 9% is being levied on third party solar.

Restriction in System Size of Rooftop Solar

Under regulations, the cumulative capacity of roof top solar systems is restricted to 30% of distribution transformer capacity in the area.

Delays in Installation of Net Meter

Due to procedural issues, installation of net meters can get delayed by up to a year.

Delays in Technical Feasibility for OA

Delays in approval of technical feasibility for OA by the DISCOMs citing increase in the feeder load by treating OA as additional demand are common.

Banked Power Compensation

RE generators are paid only INR 1.00/kWh as compensation for used banked power and nil for any unused banked power.

Time of Day Tariff Retrospectively Applied for Usage of Banked Power

There were no stipulations for consumption of banked solar power on Time of Day (TOD) basis in the solar policy of 2012. TOD for banked power consumption was introduced in August 2017. However, it has been charged retrospectively for transactions prior to August 2017 as supplementary demand in 2018-19.

Temporary Industrial Tariff

Drawal of power from the grid for auxiliary consumption by RE projects is charged at temporary supply rate, which is 1.2 times the applicable grid tariff.

Credit of OA Power

DISCOMs do not allow credit of electricity supplied under OA until the wheeling agreement is signed. This can take up to six months in some cases.

6. Recommendations

Key recommendations for increasing RE power procurement by C&I consumers:

- a. The state regulator should issue directions to DISCOMs not to:
 - i. Arbitrarily charge electricity duty for third party solar transactions,



- ii. Delay technical feasibility as there is no increase in feeder load due to OA,
 - iii. Levy TOD charges retrospectively on banked power.
-
- b. The cap on solar rooftop system capacity under net metering guidelines should be relaxed as rooftop solar is a highly beneficial source of power.
 - c. DISCOMs should install the net meter within a defined period of 2-4 weeks from the date of issue of NOC.
 - d. DISCOMs should be directed to pay for banked power at the prevailing APPC rate.
 - e. Drawal of power for auxiliary consumption should be adjusted against electricity injected in the grid.
 - f. Credit for energy injected before signing of wheeling agreement should be allowed as deemed energy injection.