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REDE

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Renewable Energy Procurement by C&I Consumers in Telangana

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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 the relevant stakeholders.

About the Study

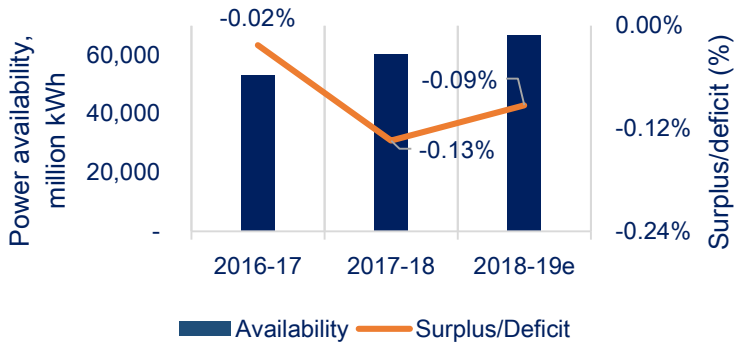
The representatives from WWF India and CII had a meeting with the Chief Secretary (CS), Government of Telangana (TS), in 2018 to brief the CS on the REDE initiative, its core objective and envisioned impact. The CS in turn asked the REDE project team to undertake a study on the issues being faced by C&I customers and all other related stakeholders in Telangana, pertaining to procurement of RE.

The study was undertaken by Bridge to India along with WWF India for seeking inputs and feedback on policy, regulatory, and other challenges being faced by C&I customers, project developers and discoms in the state of Telangana. The inputs have been collated through direct interaction with individual C&I customers in Telangana in a RE buyer's day organised by WWF India & 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 to holistically address the barriers to RE procurement. The findings of the study are detailed in the following sections.

1. Introduction

Telangana has a total annual power demand of 15,833 MW growing at an average of 7.27% in the last two years. The state has bridged its demand supply gap and has a very minor availability deficit. Total renewable energy capacity in the state was 3,994 MW as on 31 May 2019.

Figure 1: Power availability



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

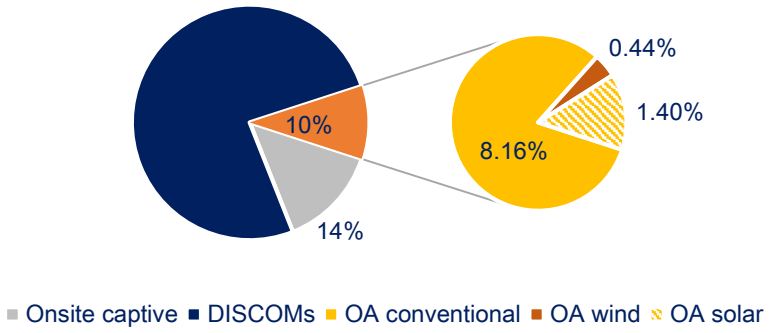
DISCOMs are mandated to comply with a total 6% RPO target (solar 5.33% and non-solar 0.67%) for 2018-19 with 0.5% increase in the total RPO every year until 2021-22.

2. Power Procurement by C&I Consumers

C&I consumers account for 56% of total power consumed in the state (equivalent to about 8,863 MW). They procure bulk of their power from DISCOMs (76%) and onsite captive sources (14%). Only 10% of the power is procured from open access (OA) sources. Most of the OA power sourced is from conventional energy (8.2%; 2,043 MW), followed by solar (1.4%; 349 MW) and wind (0.4%; 101 MW).

Telangana has very low wind power potential. The wind power policy of Telangana, drafted in 2016, is yet to be approved. There has been no capacity addition in OA wind since 2012. Therefore, solar power presents the best option for C&I consumers to procure RE.

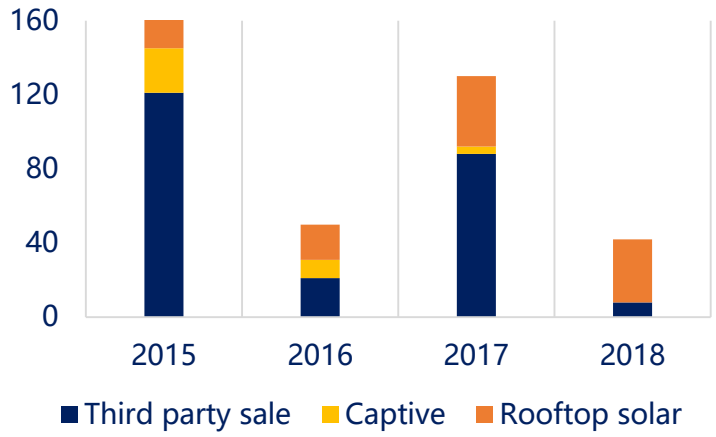
Figure 2: Power procurement by C&I consumers



Source: BRIDGE TO INDIA research

Telangana has a total installed OA solar capacity of 349 MW. In 2015, there was capacity addition of 145 MW encouraged by exemptions on cross subsidy surcharge (CSS), additional surcharge (AS) and other policy incentives. After the initial surge, growth in OA solar capacity addition has slowed down due to: (i) regulatory and policy uncertainty, and (ii) lack of OA approvals by DISCOMS and the State Load Despatch Centre (SLDC).

Figure 3: Annual C&I solar capacity addition, MW



Source: BRIDGE TO INDIA research

Only 131 MW of OA solar capacity has been installed in the next three years. Rooftop solar power installations have grown more consistently with a cumulative capacity addition of 110 MW.

3. Regulatory and Policy Framework

The state announced an attractive solar power policy in 2015, offering several financial incentives and clear timelines for project approvals and legal clearances.

Table 1: Telangana solar power policy, 2015

		Open access		
		Third party sale	**Captive consumption**	**Rooftop solar**
a.	Exemption from CSS for five years from COD for intra state sale	Y	NA	NA
b.	100% banking of power permitted	Y	Y	Y
c.	Exemption from wheeling and transmission charges	N	Y	Y
d.	Exemption from wheeling losses	N	N	Y
e.	Single-window clearance	Y	Y	Y
f.	Deemed approval of technical feasibility (days)	30	30	21
g.	Deemed approval for intra-state open access (working days)	21	21	NA
h.	Freedom to choose net metering or gross metering for 25 years from date of connection with grid (up to 80% of sanctioned load, up to 1 MWp only)	NA	NA	Y
i.	100% refund on stamp duty for land purchased	Y	Y	NA
j.	100% refund of GST for five years	Y	Y	Y
k.	Exemption from electricity duty	Y	Y	Y
l.	Exemption from Land Ceiling Act	Y	Y	NA
m.	Deemed conversion of land to non-agricultural land on payment of applicable charges with no further procedures required	Y	Y	NA

In addition, AS has been waived for a period of five years by the state regulator. Power must be generated and consumed in Telangana to avail benefits under this policy.

As per forecasting and scheduling regulations in Telangana, deviation charges are not applicable on solar and wind projects below 5MW. For projects above 5 MW, deviation charges are applicable for over/under injection of more than 15%. This regulation is being revised by the state regulator and a new version is expected shortly.

4. Cost of Power

OA charges in Telangana add up to INR 1.07/ kWh and INR 0.26/ kWh for third party sale and captive consumption respectively as per state regulations.

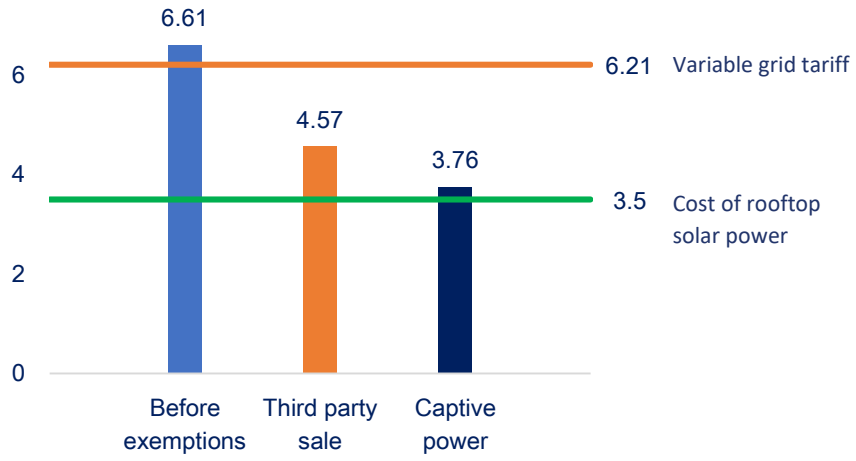
Table 2: OA charges for solar power for industrial consumers for 2018-19, INR/ kWh

	CSS	Wheeling loss	Wheeling charge	Transmission loss	Transmission charge	Banking charge	SLDC charge	AS	Total
Without any exemptions	1.46	0.14	0.16	0.11	0.59	0.01	0.06	0.52	3.05
Third party sale (after exemptions under the state policy)	0	0.14	0.16	0.11	0.59	0.01	0.06	0	1.07
Captive consumption (after exemptions under the state policy)	0	0.14	0	0.11	0	0.01	0	0	0.26

Note: CSS value is considered as applicable for Telangana Southern Power Distribution Company Limited (TSSPDCL).

Net of exemptions, landed cost of OA solar power and rooftop solar power is significantly lower than variable grid power tariff for industrial consumers in Telangana.

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



Source: BRIDGE TO INDIA research

Notes:
i) Grid tariff includes variable energy charge and fuel surcharge. It does not include fixed (demand) charges.
ii) Electricity duty of INR 0.06/ kWh is included in the grid tariff and in the landed cost of OA solar power before exemptions.
iii) Connection voltage is assumed at 33 KV.
iv) Cost of rooftop solar power is estimated assuming system life of 20 years.

v) CSS value is considered at INR 1.46/ kWh as applicable for TSSPDCL.
vi) Cost of OA solar power is considered at INR 3.50/ kWh.
vii) Generation capacity of 10 MW is considered.

5. Barriers to RE Procurement

Despite an attractive solar power policy, there are severe challenges faced by C&I consumers in RE procurement in Telangana.

Denial or Delay in OA Approval

The most significant barrier is denial or delay in OA approval by the SLDC citing distribution or transmission capacity constraints. OA applications are not even accepted sometimes or are kept pending for long periods. This issue has had a hugely negative impact on growth of OA solar in Telangana.

Uncertainty in CSS

The state regulator has clarified that the CSS exemption as mentioned in the solar power policy can be provided only if the state government reimburses DISCOMs for loss of revenue. This has created uncertainty as DISCOMs can levy CSS anytime until a specific clarification is issued annually by the state government for reimbursement.

Lack of Clarity on Captive Power Rules

Viability of transactions under group captive mode is affected by the DISCOM's interpretation of the Ministry of Power's Electricity rules, 2005. These rules state that consumption of energy must be in proportion to consumers' ownership of the power plant with a variation, not exceeding 10% determined on an annual basis. Any deviation over and above this by any member of the group captive is likely to render the entire arrangement invalid.

A key condition for captive power status is that at least 51% of aggregate electricity generated should be consumed for captive use. Inter-state captive RE transactions sometimes do not receive certification of consumption to validate the 51% captive consumption. Hence, CSS gets charged on captive power transactions.

A draft amendment proposed by the Ministry of Power in 2018 qualifying that variation in consumption in proportion of ownership of the solar and wind power plants exceeding 15% and up to 30% shall be agreed and allowed by the State Government, if considered appropriate, in consultation with the state regulator. The amendment, yet to be finalised, has created uncertainty for investors and consumers.

Banking of Power

As per the state solar power policy, energy injected before the date of OA approval is considered as deemed energy banked. Unutilised portion of this energy should be considered as deemed purchase by DISCOMs at average pooled purchase cost (APPC). However, this payment is not received by projects in the absence of OA approval.

Monthly Reconciliation Delays

Settlement of accounts between the generator, consumer and the DISCOM or TRANSCO for wheeling charges, transmission charges and line losses and monthly reconciliation between the parties are sometimes delayed and can take up to 9 – 14 months.

6. Other Issues

a. Extra solar module capacity is usually built by solar projects (up to 50%) to ensure redundancy and optimisation of project design. Telangana DISCOMs have arbitrarily dictated that solar module capacity should be exactly equal to inverter capacity. In case of a mismatch, the excess capacity is rejected by the DISCOMs.

b. Planning for location of new RE projects is difficult as substation-wise data of transmission or distribution capacity is not available.

c. Transactional issues such as delays in land agreements, certification by the department of electrical inspectorate can take up to two months. Net metering approvals from DISCOMs also take 2-3 months.

7. DISCOM issues

The DISCOMs suffer a direct financial loss due to migration of profitable C&I consumers to OA and rooftop solar. CSS and AS exemptions further aggravate this problem. Fixed tariffs do not fully compensate for fixed costs and potential cost of backing down thermal power.

Expensive short-term power is sometimes used to bridge the short-term demand-supply gap which increases when solar OA consumers draw power from the grid.

8. Recommendations

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

a. All stakeholders must fully comply with the state power policy. Deadlines for deemed OA approvals should be adhered to and delays in granting project or net metering approvals must be reduced to less than a month. Exemptions from CSS and other OA charges should be unconditional as per the state solar policy.

b. The national load despatch centre (NLDC) can verify the validity of captive power consumption based on certification of energy consumed from SLDCs. This would help secure exemptions from CSS for captive power consumed in different states.

c. Energy accounting and monthly settlement should be finalised within the subsequent month.

d. Details of substation evacuation capacity, available capacity and reserved capacity should be made available online and updated monthly.

e. Clarity is required from the state regulator for interpretation of group captive power provisions in the Electricity Rules, 2005.

f. Cap on solar rooftop system capacity under net metering guidelines should be relaxed as rooftop solar is a highly beneficial source of power (no land or transmission capacity requirement).