

## Open access – an opportunity for procuring wind energy – Ruchita Shah

Open access (OA), as defined in India's Electricity Act, 2003<sup>1</sup> is "the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission". The Act allows open access to power consumers with a load requirement of 1 MW and above on payment of applicable charges. These charges, determined by the respective state electricity regulatory commissions (SERCs), include transmission and wheeling charges, cross subsidy surcharge, standby charges and state load dispatch centre (SLDC), among others.



In essence, OA provides an opportunity for the electricity consumer to choose their electricity supplier. Over the years, open access has become an opportune alternative for consumers to either reduce their electricity bills, increase reliability or meet their RPO obligations. The Council on Energy, Environment and Water's (CEEW) Centre for Energy Finance (CEF) has built an open access landed cost calculator<sup>2</sup> to help the user to calculate landed OA tariff and compare it with the distribution company's (discoms) tariff.

The OA regulation by the Central Electricity Regulatory Commission (CERC) and SERC released time-to-time governs the inter-state and intra-state open access for fossil-fuel-based and renewable energy (RE) power projects, respectively.

From a practical perspective, OA allows the consumers to directly enter into a contract with a RE project developer (third party) or set up their own RE project (captive/ group captive) and use the state/ central transmission and distribution network to supply this power. Depending on the location of the supplier and consumer, OA can be either inter-state or intra-state. In inter-state OA, the supplier and consumer are located in two different states; in intra-state, both supplier and consumer are located in the same state. Additionally, based on OA duration, power procurement can be on a short-term basis (STOA) (up to one month), medium-term basis (MTOA) (three months to three years), or long-term basis (LTOA) (12-25 years).

### **A new beginning for green open access**

Over the years, many commercial and industrial (C&I) consumers have committed to 100 per cent renewable energy consumption, and open access to renewable energy has become a popular alternative among them to transition from 'grey (fossil-based) to green' energy. There have been advancements on the policy front as well. In July 2022, a distinct regulation was released for OA for renewables by the Ministry of Power (MoP) – the Electricity (promoting renewable energy through green energy open access) Rules, 2022<sup>3</sup>. The consumer eligibility for green OA has been reduced from 1 MW to 100 kW, enabling small consumers to purchase renewable power through open access. The rules aim to streamline the approval process for granting OA in a time-bound manner. It provides certainty on OA charges levied on green OA consumers, including a cap on increasing the cross-subsidy surcharge and removing additional surcharges. However, most states are yet to notify their own OA regulations in alignment with this rule.

In addition, from an OA consumer’s perspective, the draft wind repowering policy<sup>4</sup> brings avenues to access wind energy by allowing the repowering project developer to sell the additional wind power capacity generation to other entities through OA, subject to the refusal of the concerned discom to buy the additional generation.

### CEEW-CEF Open Access Landed Cost Calculator

Before entering into the contracts to procure renewable energy via OA, it is essential for decision-makers to compare the discom tariff with the landed OA tariff. Various OA charges are added to the ex-bus bar tariff (as agreed upon by the supplier and consumer in a power purchase agreement) to arrive at the landed OA tariff. These OA charges are complex to navigate and are scattered across state RE policies, tariff orders and regulations (amended from time to time). CEEW-CEF’s open access landed cost calculator<sup>5</sup> helps demystify these charges, enabling the user to calculate landed OA tariff and determine their economic savings. It does so across inputs, such as OA mode, duration, fuel, and voltage level, and allows users to determine optimal combinations of RE and discom procurement.

### State of play in wind resource-rich states in India

According to the National Institute of Wind Energy’s (NIWE) assessment, India’s wind potential is concentrated in seven states – Gujarat, Rajasthan, Maharashtra, Tamil Nadu, Madhya Pradesh, Karnataka, and Andhra Pradesh. Consequently, most of the wind OA capacity has been installed in these wind resource-rich states.

In reality, all OA charges are often not always applicable. To promote RE open access, SERCs provide exemptions on various charges. These include discounts on charges like wheeling, transmission, cross subsidy surcharge and additional surcharge over fossil fuel-based OA charges. These charges and waivers vary significantly across wind resource-rich states and are depicted in Table 1 below. For example, in Maharashtra and Madhya Pradesh, there are no exemptions on the additional surcharge, whereas it is waived off in Karnataka, Tamil Nadu and Andhra Pradesh.

Parameters	Karnataka	Gujarat	Rajasthan	Mahara shtra	Tamil Nadu	Madhya Pradesh	Andhra Pradesh
Wheeling charges	Yellow	Yellow	Yellow	Red	Yellow	Red	Red
Transmission charges	Yellow	Red	Yellow	Red	Yellow	Red	Red
Cross subsidy surcharge	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow
Additional surcharge	Green	Yellow	Yellow	Red	Green	Red	Green
Banking charges	Red	Yellow	Yellow	Green	Yellow	Red	Red

Table 1: Heat map for waivers on open access charges

Source: CEEW-CEF RE waivers; Note: Green depicts 100% waiver, red depicts no waiver, and yellow depicts waivers are applicable in some cases (for example, cross subsidy surcharge is waived off for captive solar/ wind projects in Karnataka, whereas for third-party sale, there are no exemptions).

Using the CEEW-CEF open access landed cost calculator, in Figure 1, we have depicted the average discom tariff, landed OA tariff and the OA charges for an industrial consumer procuring power from an intra-state wind project at an ex-bus bar tariff of INR 2.9/ kWh.

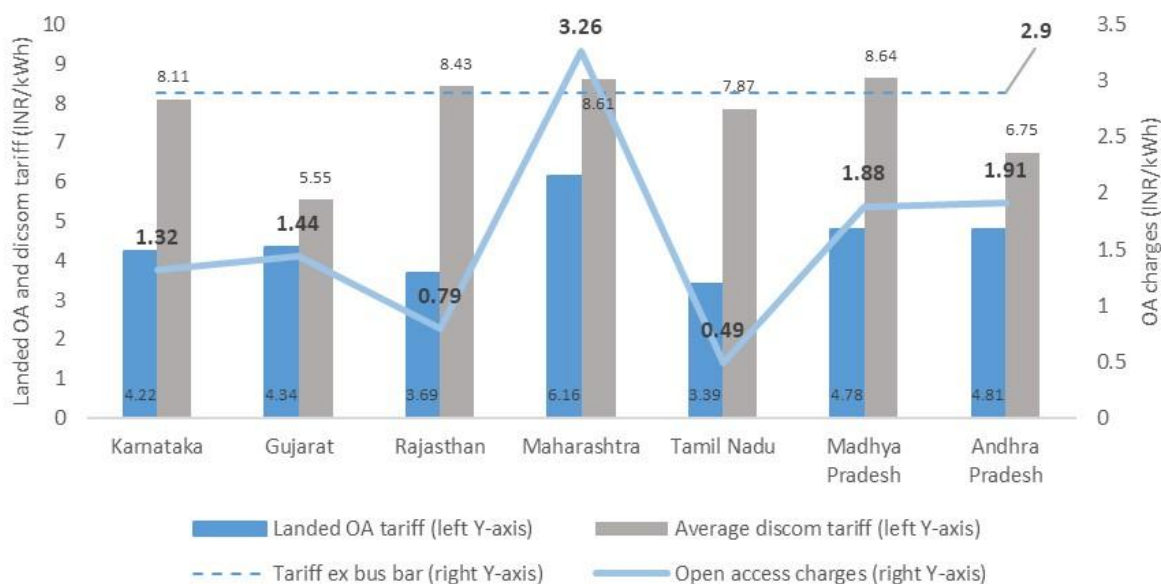


Figure 1: Landed OA tariff Vs average discom tariff in wind resource-rich state

Source: CEEW-CEF open access landed cost calculator (January 2022). Note: Average discom tariffs and open access landed tariffs have been computed for captive wind generation (intra-state MTOA/LTOA), assuming an industrial load of 10 MW with 85% load factor connected to the grid at 33 kV and a wind generation tariff of 2.9 INR/kWh at a capacity utilisation factor of 33 per cent and 10 per cent of energy banked.

## Way forward

Over the years, open access consumers of renewable energy have faced various challenges, such as delayed approvals, uncertainty in state RE policies and regulations, and unfavourable or no banking provisions. In addition, from a discoms' perspective, OA consumers pose challenges by frequently switching between open access and regulated supply leading to difficulties in power purchase planning.

MoP's Electricity (promoting renewable energy through green energy open access) Rules, 2022, attempted to address some of these issues, such as policy certainty (especially around cross-subsidy and additional surcharges), delays in OA approvals and mandated one-month energy banking facility. However, most states are yet to adopt and notify these amendments in state OA regulations. Furthermore, it is essential to simplify the OA charges and standardise the methodologies behind the calculation of OA charges. Particularly, additional surcharges and energy banking charges need standardisation to reduce wide differences across states.

Wind-solar with storage hybrid OA<sup>6</sup> is becoming prevalent owing to the higher cumulative capacity utilisation factor (CUF) and a flattened generation profile. At present, only a few states, such as Gujarat, Rajasthan and Andhra Pradesh, include this category of OA in their regulations and specify the exemptions available for such projects. Hence, it is critical, especially in wind resource-rich states, to include hybrid OA in their OA regulations.

RE OA has a critical role to play in fulfilling India's ambitious non-fossil fuel target of 500 GW by 2030 and in return, it is essential to streamline the OA regulations and RE policies to benefit the consumers and simultaneously protect discoms' interest.

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## References

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- <sup>6</sup>Garg, Vibhuti, and Jyoti Gulia. 'India's Renewable Energy Open Access Market', August 2022. [https://jmkresearch.com/wp-content/uploads/2022/11/Indias-Renewable-Energy-Open-Access-Market\\_JMK.pdf](https://jmkresearch.com/wp-content/uploads/2022/11/Indias-Renewable-Energy-Open-Access-Market_JMK.pdf).

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