

Powering Progress, Empowering Choice: A Deep Dive into India's Open Access Electricity Market

A Comprehensive Analysis of Open Access Market in India

Publishing: April 2024

Price: US\$ 5,999 (Report + C&I Database: Existing & Upcoming OA Consumers)

Price: US\$ 4,999 (Report Only)

Price: US\$ 3,999 (C&I Consumers Database Only)

Green Energy Open Access Regulations: Cornerstone for C&I Sector Advancement

In a concerted effort to expedite the transition towards renewable energy, the government has introduced a range of green energy open access regulations. These measures have been put in place to create an enticing market environment for both power producers and consumers within the Commercial and Industrial (C&I) sector.

These initiatives encompass several critical aspects:

- **Load Eligibility Adjustment:** The government has significantly reduced the threshold for eligible consumers to procure power through the open access route. Previously set at 1 MW, it has now been revised down to 100 kW. This change opens opportunities for a broader range of C&I consumers to access renewable energy sources.
- **Open Access Charge Modalities:** Defining the modalities for open access charges is a pivotal move, as it provides clarity on the financial implications for consumers. State distribution companies (discoms) are now required to adhere to these stipulated charge structures, which can greatly impact the cost dynamics for consumers.
- **Banking Period Requirement:** The government has introduced a minimum banking period of 30 days for consumers. This requirement ensures a more robust and sustainable approach to energy procurement and storage, enabling better planning and management of energy resources.

Open Access RE Market Trends: A Comprehensive Review of Key Developments in India

Passed in 2003, the Electricity Act aimed to revitalize the power sector by fostering competition and consumer choice. A key tool for this? Open Access (OA) in transmission and distribution. With OA, large consumers can bypass their local utility and purchase electricity directly from any supplier, injecting dynamism and cost-efficiency into the market. To foster competition and power supply flexibility, open access regulations kept pace with industry needs. After initial broad rules (2004), separate regulations emerged for inter-state short-term (2008) and long-/medium-term (2009) access. States embraced open access with their own regulations. Additionally, initiatives like electricity trading and market regulations further empowered consumers and fueled competition.

Analysis of Open Access Consumers on Power Exchanges

A pivotal year, 2010-11 saw a surge in collective open access transactions through power exchanges, revolutionizing commercial & industrial (C&I) power procurement. The number of Open Access (OA) consumers skyrocketed, multiplying from **825 at IEX and 170 at PXIL to a staggering 5159 and 769, respectively, by 2022-23**, marking a clear shift towards market-driven power choices. While IEX held the reigns, with open access consumers constituting a towering 90% to 96% of its total portfolio during this period, PXIL's landscape was more diverse, ranging from 16% to 90%. Despite this difference, both exchanges witnessed impressive growth, with the number of OA consumers at IEX and PXIL increasing at a **robust CAGR of 17% and 13%**, respectively. In case of HPX, which commenced its operations in July 2022, the number of OA consumers was 239 in 2022-23.

While the number of OA consumers soared, IEX, despite its dominant share, saw a significant drop in overall purchase volume in the Day Ahead Market (DAM), from **14452.80 MUs in 2019-20 to 4707.73 MUs in 2022-23**. PXIL, on the other hand, defied the trend, with DAM volume increasing from **9.96 MUs to 28.65 MUs** in the same period.

The observed divergence suggests an underlying preference — **a movement towards Captive/Group Captive Open Access modes beyond the exchange platform, accompanied by frequent shifts among open access consumers between utility & exchanges** (this dynamic is mainly driven by market prices, as consumers tend to procure power from the market when its price is more economical compared to the utility tariff, even after factoring in the associated charges and surcharges. For large industrial players, however, reliable 24/7 access to power remains a paramount concern). The limited DAM volume at PXIL during 2020-21 and 2021-22, despite the increasing count of open access consumers, underscores this observed trend.

OPEN ACCESS SHORT TERM Power Market Overview in India

Shifts among open access consumers between utility & exchanges for the state of Uttar Pradesh

UTTAR PRADESH	Quantum (In MW)	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23
Balrampur Chini Mills Ltd. Unit - Kumbhi	7.5	●	●	●	●	●	●
INOX Air Products Limited	4	●	●	●	●	●	●
Varun Beverages	1.24	●	●	●	●	●	●
Hotel Mughal Sheraton	1.5	●	●	●	●	●	●

● Open Access Availed ● Power Procurement Through DISCOMs/Captive/Group Captive

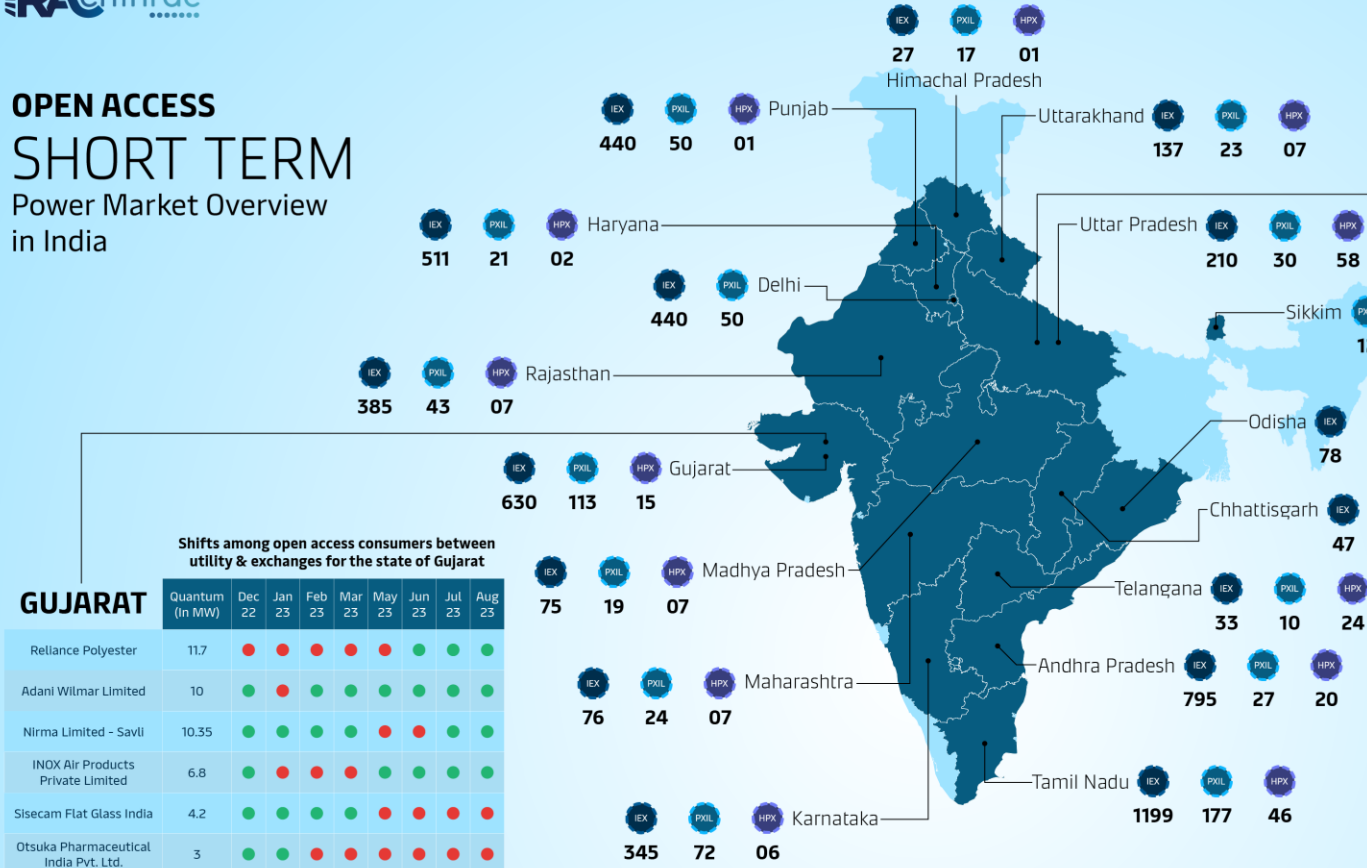
The open access market is thriving, with a remarkable **15-20% YoY growth** in C&I consumers, according to **eninrac's C&I OA Consumer Tracker**. This trend points towards a shift in the energy landscape.

Frequent shifts amongst OAC
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Shifts among open access consumers between utility & exchanges for the state of Gujarat

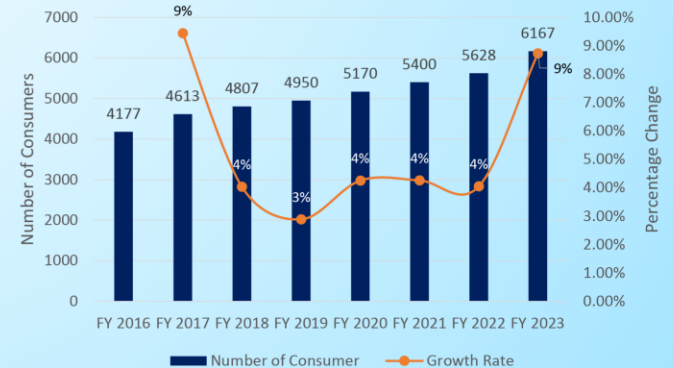
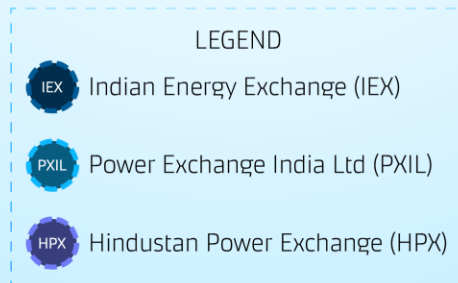
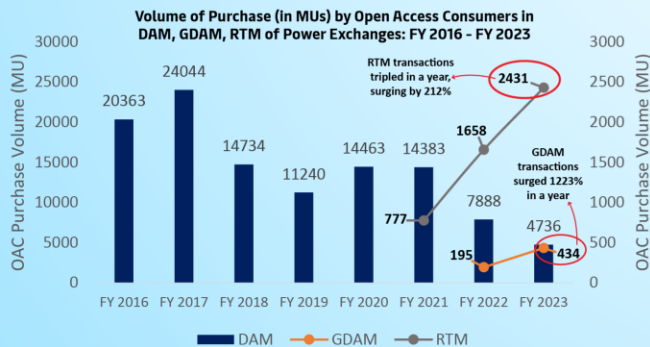
GUJARAT	Quantum (In MW)	Dec 22	Jan 23	Feb 23	Mar 23	May 23	Jun 23	Jul 23	Aug 23
Reliance Polyester	11.7	●	●	●	●	●	●	●	●
Adani Wilmar Limited	10	●	●	●	●	●	●	●	●
Nirma Limited - Savli	10.35	●	●	●	●	●	●	●	●
INOX Air Products Private Limited	6.8	●	●	●	●	●	●	●	●
Sisecam Flat Glass India	4.2	●	●	●	●	●	●	●	●
Otsuka Pharmaceutical India Pvt. Ltd.	3	●	●	●	●	●	●	●	●

● Open Access Availed ● Power Procurement Through DISCOMs/Captive/Group Captive



State wise Number of Open Access Consumers in Power Exchanges As On March 2023

Number of Open Access Consumers in Power Exchanges: FY 2016 - FY 2023



Green Energy Open Access Regulations: Cornerstone for C&I Sector Advancement (Contd.)

- **Mandatory Green Energy Supply:** Discoms have been assigned the obligation to supply green energy to consumers upon request. While this is a positive development for environmentally-conscious consumers, it does come at an additional cost, and the precise implications of this mandatory supply warrant further exploration.
- **Jurisdictional Powers of States:** While the government seeks to standardize open access rules at the national level, it is essential to recognize that individual states retain the authority to determine open access charges. This decentralization of power underscores the need for consumers to be cognizant of the specific regulations and costs in their respective regions.

Lack of clarity to be qualified as a Captive Consumer

For years, the Electricity Rules of 2005, formulated under the Electricity Act of 2003, have been a battleground for conflicting interpretations when it comes to captive generating plants (CGPs). This ambiguity has particularly muddied the waters around group captive arrangements, a highly attractive model for commercial and industrial consumers. These group captive setups offer significant advantages. By establishing a dedicated power plant with at least 26% ownership shared among large consumers, businesses can reap the benefits of lower electricity costs, surcharge exemptions and enhanced energy security.

However, the potential of group captives remains stifled by the regulatory quagmire. Different electricity regulators have offered contradictory interpretations of the relevant rules, creating uncertainty and confusion for investors and participants. This inconsistency in application can lead to delayed project approvals which further leads to financial losses to the generator and consumer. The points of contradiction of Rule 3 are:

- **Special Purpose Vehicle as an 'Association of Persons' Under Rule 3(1)(a);**
- **26% Ownership Requirement To Be Met Throughout Relevant Financial Year;**
- **51% Consumption Test;**
- **Change of Ownership of CGP and Weighted Average;**

Only by addressing the issue of conflicting interpretations can we pave the way for a thriving captive power market under open access mode, allowing businesses to optimize their energy costs, enhance their energy security, and ultimately contribute to a more efficient and sustainable power landscape.

GOAR: Complementary Option or a Competitor to India's Solar Rooftop?

Green Energy Open Access Regulations (GOAR) offer significant benefits for commercial and industrial (C&I) consumers, particularly smaller ones with a 100 kW power demand. This **coincides** with a surging Indian solar rooftop market, exceeding **11 GW by October 2023** and projected to add 3.5-4 GW in the next two years. However, GOAR presents an alternative for C&I consumers to access green power directly, potentially disincentivizing rooftop installations and hindering the national solar rooftop program's progress and limiting the same for residential and smaller consumers.

GOAR could be viewed **as a complementary option, not a competitor, to rooftop installations only when** policy adjustments could be explored to encourage rooftop installations alongside GOAR, such as simplifying rooftop permitting processes or offering financial incentives.

Anticipating the Evolution: The Impact of Regulatory Innovation and Market Forces on India's C&I Power Landscape

India's electricity market is transforming, and Open Access offers the key to unlocking cost savings, sustainability, and control for C&I consumers

- **Cost Savings:** Competitive tariffs can be secured, often at significant discounts compared to conventional supply. [ITC Limited, a leading FMCG giant in Andhra Pradesh](#), slashed their electricity bills by **25% by switching to a solar rooftop and wind PPA combination**.
- **Sustainability Edge:** Freedom to choose renewable energy sources like solar and wind, reducing the carbon footprint. [Tata Motors in Pune](#) achieved **carbon neutrality** for their manufacturing facility by entering a long-term PPA with a **nearby solar farm**.
- **Greater Control:** Energy consumption can be managed efficiently, optimizing peak demand charges, and gaining flexibility in power procurement. [ABC Industries, a textile manufacturer in Rajasthan](#), **reduced their peak demand charges by 18% through strategic load** shifting enabled by Open Access.

This dossier aims to provide a [comprehensive assessment](#) of the open access potential on a state-wise basis. To achieve this, our [primary research team](#) diligently gathered data on various tangible parameters, including the **existing Commercial and Industrial (C&I) consumers**, their power demand, and their willingness to engage with the open access (OA) route. We also considered the [type of open access](#), such as **short, medium, and long-term arrangements**. Furthermore, we [closely tracked upcoming C&I consumers](#), considering their connected load, whether they possess a captive power plant, and their likely choice of OA route.

The data collected for both existing and prospective C&I consumers underwent thorough analysis to determine the overall [potential](#) of the ["open access"](#) market within each state. Subsequently, this potential was refined to identify the qualified potential for "open access." The status of qualified potential was further categorized based on the STOA/MTOA/LTOA mode, inclusive of the connected load.

“Through this comprehensive analysis, we aim to offer insights into the evolving landscape of open access and provide valuable guidance for businesses and stakeholders looking to leverage the open access market in each state

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Key Signposts – An examination of the factors that affect retail prices & possible solutions to mitigate their impact

Key Signposts

1. Empowering C&I in India: Directing Energy for Finance and Decarbonization

- Commercial and industrial (C&I) entities in India are displaying a growing interest in procuring electricity directly from renewable energy producers. This interest is driven by their dual objectives of achieving financial benefits and advancing decarbonization initiatives.

2. Regulatory Foundations for Advancing the C&I Sector through Green Energy Open Access

- As part of a focused initiative to accelerate the shift to renewable energy, the government has implemented a series of regulations for green energy open access. These measures aim to establish an attractive market environment that benefits both power producers and consumers in the Commercial and Industrial (C&I) sector.

3. State-Level Impediments to Green Open Access: DISCOMs' Reluctance and Cross Subsidization

- DISCOMs are cautious about endorsing direct power procurement by corporations, as they are apprehensive about losing their most profitable clientele. This reluctance presents a significant hurdle for green corporate Power Purchase Agreements (PPAs), particularly because most consumers rely on the state electricity grid for transmitting the electricity they acquire from the open market. Moreover, in numerous states, Commercial and Industrial (C&I) consumers typically contribute to subsidizing tariffs paid by low-income households and agricultural consumers. This pivotal role of C&I consumers in tariff cross-subsidization is a key reason why DISCOMs are hesitant to relinquish their business.

4. Navigating Opportunities in a Shifting Green Energy Landscape for DISCOMs

- Despite DISCOMs' concerns over potential loss of profitable clients, the growing green OA market offers them opportunities. As renewable energy's share expands, DISCOMs can diversify their revenue streams by providing grid services like power banking and energy storage, in addition to traditional income sources such as transmission and wheeling charges. Alternatively, DISCOMs can leverage the corporate appetite for renewable energy by introducing competitive green tariffs, securing a slice of this expanding market.

5. Strategic Assessment of Margin of Safety in Key States for Open Access Energy Procurement: Captive vs. Third-Party Routes

- Key states such as Gujarat, Karnataka, and Uttar Pradesh offer a robust margin of safety for businesses utilizing the captive route. In contrast, the viability of the third-party open access route is hampered by the imposition of cross-subsidy surcharges (CSS) and additional surcharges (AS), which affect grid competitiveness.

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- **Region Wise Consumer Profiling for (tentative) upcoming Open Access Consumers**
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- **State wise compilation of Open Access Regulations & Applicable Policy Track (Solar, Wind etc.)**
- **Subscription based report license**

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