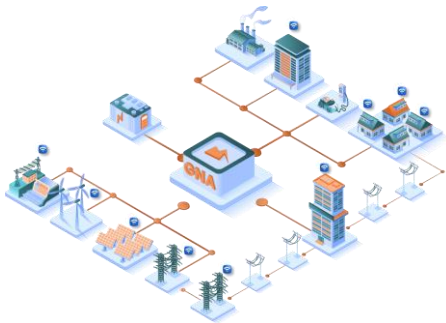
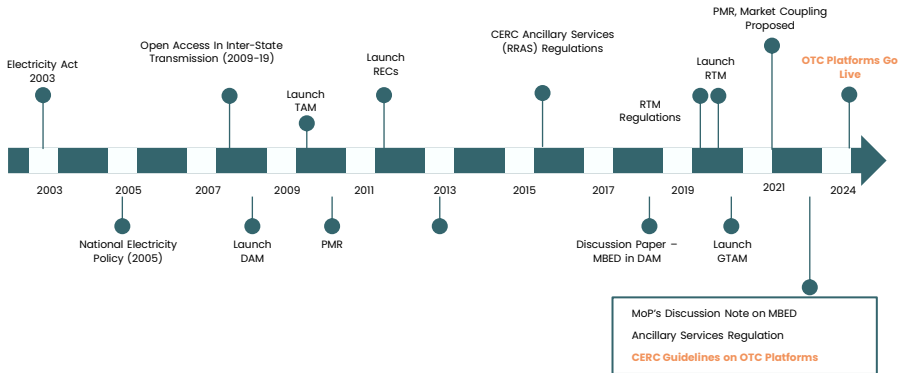


OTC Platform for the Indian Power Market

Overview and Regulations



The Indian Power Market Over the Last Two Decades

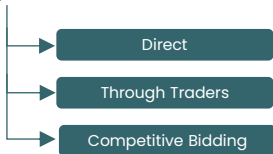


Current Indian Power Market

OTC Market

Contracts transacted in the OTC Market:

Delivery based contracts



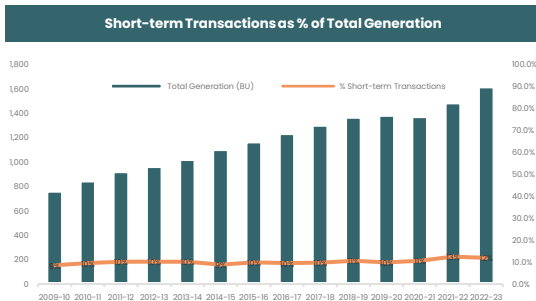
Power Exchange

Contracts transacted on the Power Exchange:

1. Delivery based electricity contracts (including DAM, GDAM, RTM)
2. Contracts relating to Renewable Energy Certificates;
3. Contracts relating to Energy Saving Certificates

“Over the Counter (OTC) Market” is a market where OTC Contracts are transacted between the sellers and the buyers directly or through a Trading Licensee.

Short-term Transactions



Points to Address for Additional Benefits for the Market

Market is Dominated by Inflexible, Longer Duration PPAs

Optimising the Cost of Power Procurement

Lack of Options for Customised Contracts

Integration of Renewable Energy Sources

Fragmented Data Impacts Decision Making

Procurement Planning Framework or a Nationally Coordinated Approach

Introduction of OTC Platforms in the Indian Power Market

Power Market Regulations (PMR) 2021 allowed the setting up of Over-the-Counter (OTC) Platforms for the electricity market in India.

PMR 2021 defines an OTC Platform as an electronic platform for the exchange of information among the buyers and sellers of electricity.

OTC Platform Defined in Power Market Regulations (PMR)

- To provide an electronic platform for the exchange of information among the potential buyers and sellers of electricity
- To maintain a repository of data related to buyers and sellers and provide such historical data to Market Participants
- To provide such services as advanced data analysis tools to Market Participants



The OTC Platform shall not engage in the negotiation, execution, clearance, or settlement of the contracts.

The OTC Platform shall maintain neutrality without influencing the decision-making of the participants in any manner.

Participants on OTC Platform



OTC Platform Eligibility

The following entities shall not be eligible to make application for establishing and operating an OTC Platform (Negative List):

- (a) a power exchange or any of its associates;
- (b) trading licensee or any of its associates; and
- (c) grid connected entities such as generating companies, transmission licensees, distribution licensees, open access consumers or any person acting on their behalf, or any of their associates.

OTC Platform Regulatory Obligations

- **Technology:** Own and maintain robust technology infrastructure with a high degree of reliability, availability, scalability, and security in respect of its systems, data, and network
- **Security:** Formulate and implement cyber security and cyber resilience framework
- **Risk Management:** Implement a comprehensive risk management framework

Inclusion in State Regulations

MPERC Aggregate Revenue Requirement and Retail Supply Tariff Order for FY2024-25 (Section 2.100)

*"Based on analysis of actual surplus energy sold, it is observed that sale of surplus energy in open market is showing increasing trend. Therefore, considering the realistic scenario of sale of surplus power through open market and considering gradual increasing trend in previous years, the Commission has considered 5,619 MU as likely scenario for sale of surplus power through power exchanges, bilateral arrangements or through bidding. Although the estimation by the Commission is based on aforesaid numbers, **the Commission directs the Petitioners to maximise sale of surplus energy through** Power Exchanges, bilateral arrangements or through bidding in order and also make best use of new platforms like HP-DAM (High Price Day Ahead Market), surplus power portal (PUShp) and **OTC Platform** for sale of surplus power. The Petitioners are also directed to comply with the directions given by the Commission in para 7.11 of this Order on disposal of Surplus Power."*

Inclusion in State Regulations

AERC Draft Framework for Resource Adequacy Sep'24 (Section 14.7)

***"Distribution Licensee may contract power through** State Generating Stations / Central Generating Stations / Independent Power Producers (IPPs) / Captive Power Plants (CPPs) / Renewable Power Plants including Co-Generation Plants / Central Agencies / State Agencies / Intermediaries / Traders / Aggregators / Power Exchanges or through bilateral agreements / Banking arrangements with other Distribution Licensee, **over-the-counter (OTC) or any other platform recognized and approved by the Central Electricity Regulatory Commission** and any other sources as may be approved by the Commission under Section 62 or Section 63 of the Act in compliance with competitive bidding guidelines."*

Functioning of an OTC Platform



Client Use Cases for OTC Platform



Discoms

- Optimise power procurement portfolio
- Digitise banking
- Digitise data
- Develop bespoke analytics use cases

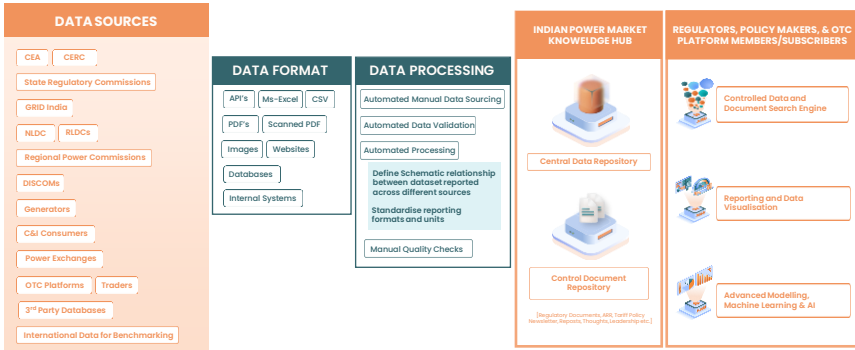
C&I Clients and Generators

- Enable green energy transition
- Identify opportunities to lower cost of power
- Direct and transparent access to buyers and sellers
- Ability to define custom requirements

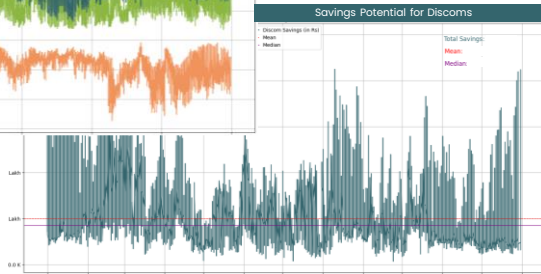
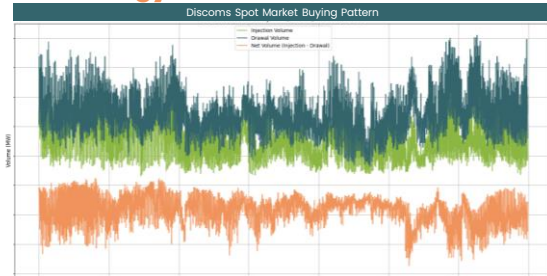
Trading Licensees

- Access to aggregated pool of buyers and sellers
- Access to advanced data and analytics capabilities
- Digitise offline processes

GNA Energy's Data Framework

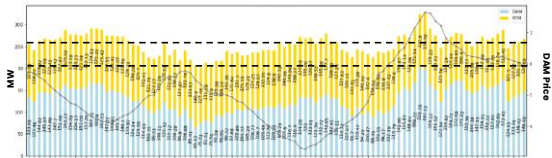


GNA Energy's Data Framework

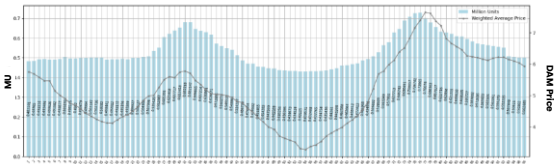


GNA Energy's Data Framework

Power Procurement vs Exchange Price

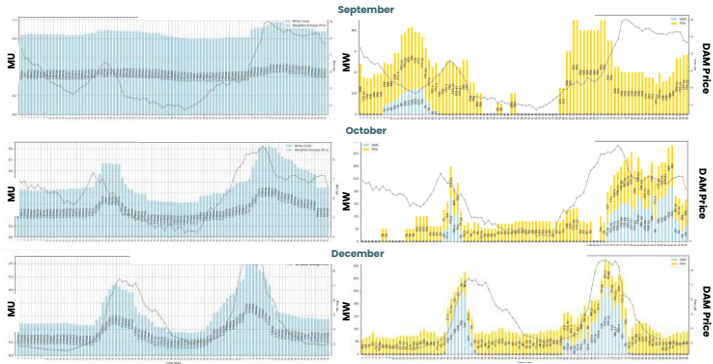


Hydro Generation vs Exchange Price








GNA Energy's Data Framework

Power Procurement and Hydro Generation - Outliers



Source: GNA Energy

Benefits of OTC Platform

-  **Equal and Unbiased** with no vested interest of the OTC Platform
-  **Market Access** for participants of all scales
-  **Informed Decision Making** after reviewing all available information
-  **Transparent** with all information made available to the OTC Platform Members
-  **Data Repository & Analytics** to enable data-driven analysis

GNA Energy OTC Platform

- Regulated by CERC
- Enables data-driven decision making
- Tailored to suit the needs of the Indian Power Market
- Continuously innovating to the dynamic requirements of the Indian Power Plant Market Participants

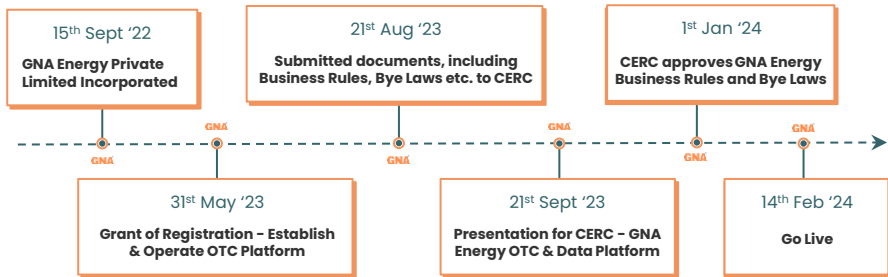
Aggregate and match electricity demand and supply

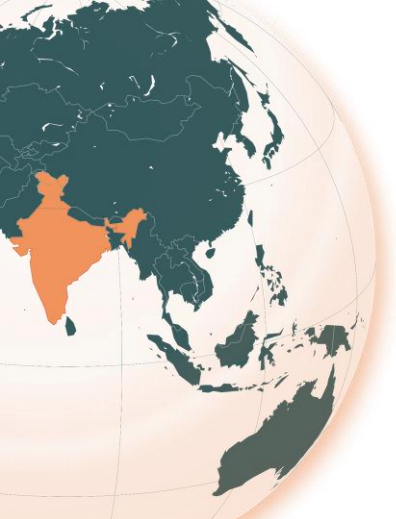
Create a centralised data repository and analytics Center of Excellence

Develop bespoke analytics use cases

Fulfil RPO mandate

GNA Energy Timeline





GNA Energy is striving to become a key enabler of **New India's Clean Energy Transition**



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