

Power Exchange India Limited

CIRCULAR

Circular No : PXIL/Operations/2020-2021/327
Date of Issue : Tuesday March 23 ,2021
Subject : Launch of G-TAM (Green Term Ahead Market) products in PXIL

Dear Member(s),

We are pleased to inform Members and Clients regarding the introduction of Green Term Ahead Market (**G-TAM**) w.e.f. **Wednesday March 24 ,2021** in line with approval from Central Electricity Regulatory Commission vide Petition No. 228/MP/2020 dated 19th March, 2021.

The **G-TAM** product shall be a new product segment in the Physical products that are currently being traded at exchange. The G-TAM products family shall include the various products designed to keep in view the requirements of the market participants.

The **Matching Methodology** of all the G-TAM products will be based on **Continuous matching mechanism** (as per Annexure V of the PXIL Business Rules). The products being made available under the G-TAM segment are as follows:

Type of Market (G-TAM)	Product Name		Product	Trading Methodology
	Solar	Non-Solar		
Intra Day – Solar / Non-Solar	IDayStatic_SL	IDayStatic_NSL	Intraday Static Solar & Intraday Static Non-Solar	Continuous matching mechanism
Any Day (s) Solar / Non-Solar on Term Ahead basis	ADayDynamic_SL	ADayDynamic_NSL	Anyday Dynamic Solar & Anyday Dynamic NonSolar	Continuous matching mechanism

The description of Static and Dynamic are as follows:

- 1) **Static Continuous products** have fixed 15 minutes delivery period and accordingly matched.
- 2) **Dynamic Continuous products** are where the Participants can choose any

Delivery Period (any block of 15 minutes in a day), as per their requirement. Such orders for a delivery period can match with opposite orders of the same delivery period. In Dynamic Continuous product participants can choose From Delivery Time to Delivery Time in HH:MM format i.e. in 15 min slots.

The Matching for the Static Continuous product Dynamic Continuous product shall be separate i.e. buy orders of Static Continuous product will match with sell orders of Static Continuous product and vice versa. Similarly, buy orders of Dynamic Continuous product will match with sell orders of Dynamic Continuous product and vice versa.

The matching methodology of both Static Continuous product and Dynamic Continuous product is illustrated in [Annexure-5](#).

The solar and non-solar sub classification of the products depends on the source of the renewable energy-used by the selling party for power generation as described in the following table:

G-TAM Product Sub-Type	Source of Generation of Power
Solar (SL)	Solar Energy
Non-Solar (NSL)	Renewable sources other than Solar Energy

The exchange may **add/delete/modify** any business rule or specification related to any **G-TAM** products or this circular after intimation to its members/clients in advance through circulars published on its website as and when it deems necessary and fit.

Members may also please note that the gate closure time is **3 hours and 15 minutes** before the start of delivery for the static products viz **IDayStatic_SL** and **IDayStatic_NSL**, at the Exchange end.

For the above-mentioned products, the Application for scheduling will be created at the exchange end **immediately upon matching of bids**. The trade participants have to provide their consent through **OPEN ACCESS (BILATERAL TRANSACTION) - CONCURRENCE FROM SLDC (in Format II)** within **Thirty (30) minutes** of receiving the **OPEN ACCESS (BILATERAL TRANSACTION)- APPLICATION FOR SCHEDULING (in Format I)** and **OPEN ACCESS (BILATERAL TRANSACTION) -CONCURRENCE FROM SLDC (in Format II)** from the Exchange end.

The application will be made to the appropriate RLDC / SLDC based on consent received from SLDC/Clients. If consents are received by the exchange before the RLDC/SLDC delivery timelines for a particular slot, then the application will be punched on RLDC/SLDC as per the formats generated/Matched bids as those delivery slots will be accepted by RLDC as per their rules and regulations for Bilateral transactions. In case

consent from SLDC/Clients is received later an application will be made to the concerned RLDC (S) / SLDC(S) for the permissible delivery time as per the RLDC/SLDC timelines.

For instance, if the RLDC application gate closure time for from delivery hour 16:00 hours is 13:30 hours and the consent is received at 13:35 hours then the application shall be made from delivery hour 16:15 Hr.

The product information about **G-TAM** is as under:

A. Contract Specification: The detailed contract specifications of various G-TAM products are given in [Annexure-1](#).

B. Trading interface and manual for accessing trading:

PXIL's Trading Portal, - PRATYAY, can be accessed through URL: trading.pxil.in. The members who are already registered can log in into PRATYAY using the Login credentials issued to them.

The manual is given in [Annexure-2](#).

C. Various reports shall be available in the PRATYAY are as under:

- G-TAM Charges reports
- G-TAM Cost of Power reports
- G-TAM Purchase certificates for Buyers

The formats of the Reports are given in [Annexure-3](#).

D. The Standing Clearance / No Objection Certificate requirement for G-TAM products is given in [Annexure-4](#).

E. The Price Discovery mechanism for G-TAM bids is given in [Annexure-5](#).

F. Template of G-TAM Purchase Certificate issued to buyers is given in [Annexure -6](#).

G. Trading timelines of Intraday Solar/Non-Solar Products and Illustration of Application Creation for Anyday- Solar / Non-Solar and Intra Day – Solar / Non-Solar Products are given in [Annexure -7](#).

For further details or any further assistance feel free to get in touch with Market Operations Department on below mentioned phone or email.

Tel No: - +91- 22- 4009 6667/687/696 **Email:** - marketoperation@pxil.co.in

Fax No: - +91- 22- 4009 6690/ 33

For and on behalf of

Power Exchange

India Limited

Sd/-

Mukti Prakash Marchino

Head- Market Operations, Membership and Clearing & Settlement.

1) IDayStatic SL/ IDayStatic NSL

Type of Market	Intra Day – Solar / Non-Solar (Separate sessions shall be operated for transaction in Solar or Non-Solar)
Selling Entity	Solar or Non-Solar power for participating in respective session
Trading System	PXIL PRATYAY Portal
Type of Contract	Firm Delivery Contract Delivery of power is the essence of contract. Trade once executed shall be sent for scheduling
Matching Methodology	Continuous matching mechanism as per Annexure V of the Business Rules
Types of Orders	1. FAK (acronym for Fill and Kill) 2. FOK (acronym for Fill or Kill) 3. Limit orders The Exchange reserves the right to introduce other Order types by issuing a Circular from time to time.
Auction Timings	Daily (00:15 to 23:30 hours) The market shall remain closed for technical reasons from 23:30 hours till 00:15 hours of next day (Day T is the trading day for entering bids in pre-defined sessions as decided by the Exchange) The Exchange reserves the right to revise the auction timings by issuing a Circular from time to time
Delivery Period	13 time blocks ahead up to 24:00 hours of next day (T + 1) with contracts for every 15-minute duration The start of delivery period shall per the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008, Procedure for scheduling bilateral transactions, directions received from RLDCs, and its amendment from time to time
Minimum Bid Volume	0.1MW
Minimum Volume Quotation Step	0.01 MW or 10 kW
Minimum Value Quotation step	Rs. 1 per MWh

Pre-Bid Margin	105% of the bid value from buyers or as defined by the Exchange from time to time. No pre-bid margin is required from the Seller.
Post-Trade Margin (after matching & Before Application to Load Dispatch Centre)	100% of the total trade value and applicable charges (Charge margin) or margin amount from the buyers and no post-bid margin from the seller or as Prescribed. The Margin shall be recomputed on Application Acceptance or/and Real time curtailment. Once the Post-trade margin is applied, Pre-bid margin would be released. Once the pay-in for the trade is fulfilled, Post-trade margin would be released.
Settlement Price(s)	The price discovered during the Continuous matching session. <i>The Exchange reserves the right to modify and/or introduce any other matching mechanism by issuance of Circular</i>
Pay – In Time	T + 1 Day All Pay-in will be done to the Exchange by 11:00 Hrs.
Pay – Out Time	T + 2 Day. All Payouts will be done after 11:00 Hrs.

2) ADayDynamic SL/ADayDynamic NSL

Type of Market	Any Day (s) Solar / Non-Solar on Term Ahead basis (Separate sessions shall be operated for transaction in Solar or Non-Solar)
Selling Entity	Solar or Non-Solar power for participating in respective session
Trading System	PXIL PRATYAY Portal
Type of Contract	Firm Delivery Contract Delivery of power is the essence of contract. Trade once executed shall be sent for scheduling.
Matching Methodology	Continuous matching mechanism as per Annexure V of the Business Rules
Types of Orders	1. FAK acronym for Fill and Kill 2. FOK acronym for Fill or Kill 3. Limit orders The Exchange reserves the right to introduce other Order types by issuing a Circular from time to time.
Contracts available for Trading	Delivery in terms of 'MW' to be supplied on daily basis
Duration of Contracts	Daily or multiples thereof as notified by Exchange from time to time. The Seller shall inject power (in MW) to be scheduled on daily basis or multiples thereof
Auction Timings	Daily (01:00 to 23:00 hours).
Delivery Period	96 Time Block Contracts of 15-minute duration each for next day delivery (Day T+1) and up to (Day T + 11) . The delivery for the next day shall be at least 13 time blocks ahead in case of bids put after 20:45 hrs
Minimum Bid Volume	0.1 MW / 100 kW
Minimum Volume Quotation Step	0.01 MW / 10 kW
Minimum Value Quotation step	Rs. 1 per MWh
Pre-Bid Margin	Rs 100 per MWh from buyers and sellers or as Prescribed.
Post-Trade Margin (after matching & Before Application to Load Dispatch Centre)	45% of the total trade value or Equivalent to next 3 days of matched trade value whichever is higher from Buyers or as Prescribed. The Margin shall be recomputed on Application Acceptance or/and Real time curtailment. Once the Post-trade margin is applied, Pre-bid margin would be released.
Settlement Price(s)	The price discovered during the Continuous matching session. The Exchange reserves the right to modify and/or introduce any other matching mechanism by issuance of Circular

Trading Slots and Auction timings	<p>The trade slots are those time periods during which the contracted quantity has to be delivered for the entire contract period. The Green Any Product can be traded over any or all of the Trading slots. The Trading slots and Auction trade session will be notified by Exchange through Trading calendar.</p> <p>Auction trade session – The Any Day (s) auction trade session for the operational day of the Exchange shall be notified from time to time.</p>
Pay – In Time	D Day. All Pay-in will be done to the Exchange by 11:00 Hrs.
Pay – Out Time	D + 1 Day. All Payouts will be done after 11:00 Hrs.

ANNEXURE-2

TRADING INTERFACE AND MANUAL FOR ACCESSING TRADING:

PXIL Trading Portal- PRATYAY can be accessed through URL: trading.pxil.in. The members who are already registered can log in into PRATYAY using the Login credentials issued to them as shown below:



☰ PXIL

Power Exchange India Limited (PXIL) is India's first institutionally promoted Power Exchange that provides innovative and credible solutions to transform the Indian Power Markets. A deep understanding of the local markets is matched by PXIL's non-partisan, unbiased and often fearless functioning, at times even in the face of uncomfortable conclusions. Our core values are – integrity, excellence, commitment and continued innovation. These are the bedrock on which the edifice of PXIL stands. PXIL's unique combination of local insights and global perspectives helps its stakeholders to make better informed business and investment decisions, improves the efficiency of the power markets, and helps shape policies and projects. PXIL is India's first and only Quality Management System "ISO 9001:2008" certified Power Exchange in the country.

[View details »](#)

👁 Vision

To create a significant difference and remain the benchmark of unquestionable integrity and excellence for our stakeholders by continually innovating and offering credible solutions to transform the Indian Power Markets.

🌐 Mission

To constantly demonstrate our core values – Integrity, Excellence, Commitment and Continued Innovation – and to remain non-partisan, unbiased and fearless in our functioning, even in the face of uncomfortable conclusions. To nurture our talented workforce and continually strengthen our local insights and global perspectives so as to bring about a paradigm shift in the functioning of our power markets. To aid our stakeholders to make better informed business and investment decisions, improve the efficiency of the power markets, and help shape policies and projects.

Login to your account

Login

[Click here to reset password.](#)

Trader App <https://memberdr.pxil.in>

Client App <https://clientdr.pxil.in>

Help Line

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Best Viewed in Internet Explorer 9 and Up, chrome, FF

When members/clients log in for the first time in the day, One Time Passcode will be sent to their email ID and mobile number. Members/clients need to enter the received OTP in the text-box and press the Verify OTP button as shown below:



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[View details »](#)

OTP Validation

Since, you are logging in first time today from this machine, we have sent a One Time Passcode to your email ID :re*****@pxil.co.in and mobile number :XXXXXX1225. Please enter the OTP below. If you cannot see any such email in your inbox, make sure to check your SPAM folder. On subsequent logins today from the same machine, you will not need to enter this OTP.

Enter OTP

Verify OTP

Resend OTP

Login to your account

Login

[Click here to reset password.](#)

Trader App <https://member.pxil.in>

Client App <https://client.pxil.in>

Help Line

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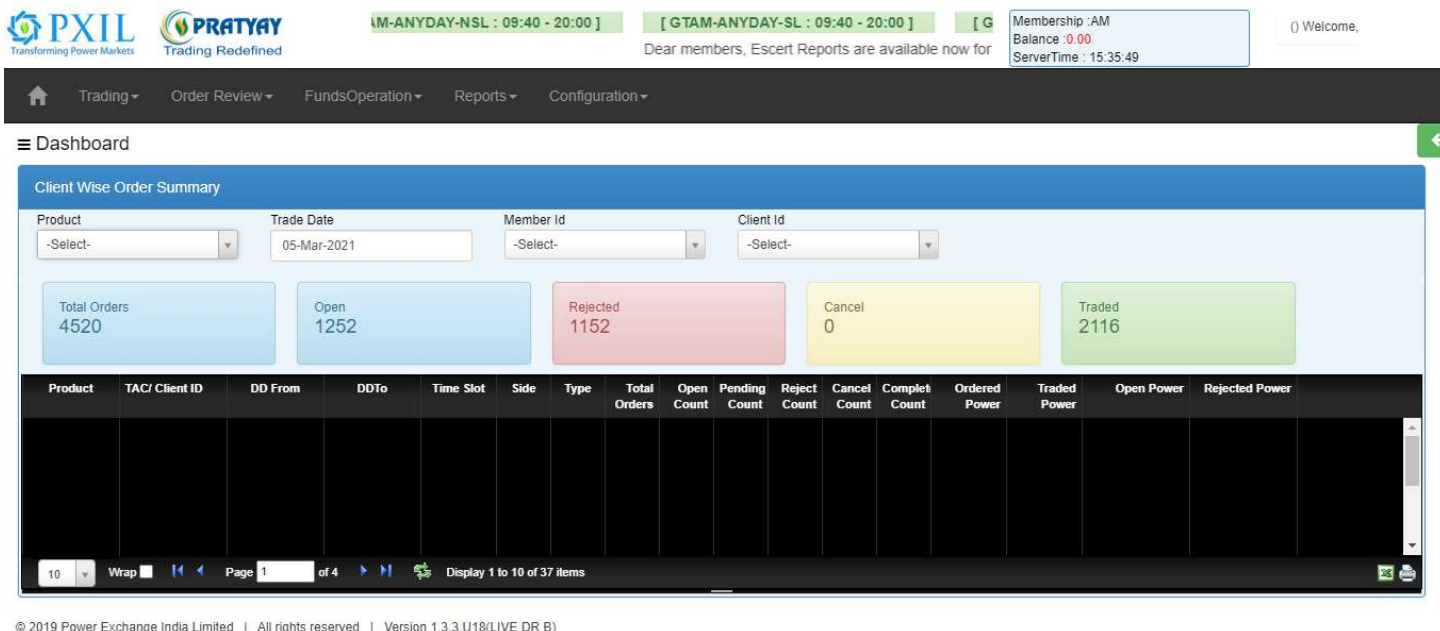
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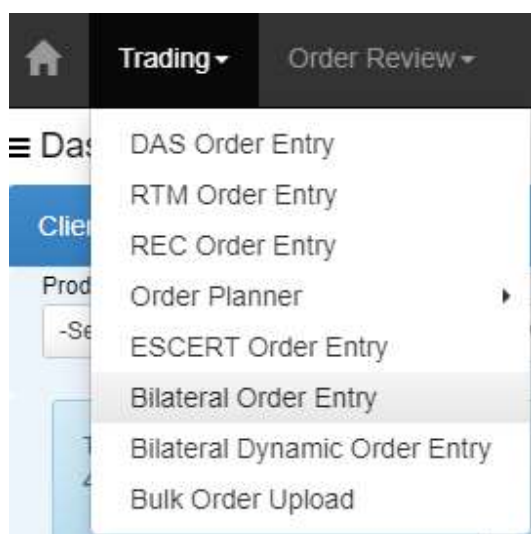
After successful login the members/clients will land up at the Client Wise Order Summary Page as shown below:



The screenshot shows the 'Client Wise Order Summary' page. At the top, there are logos for PXIL and PRATYAY, along with market status indicators: [M-ANYDAY-NSL : 09:40 - 20:00], [GTAM-ANYDAY-SL : 09:40 - 20:00], and [G]. A user information box shows 'Membership : AM', 'Balance : 0.00', and 'ServerTime : 15:35:49'. A navigation bar includes links for Trading, Order Review, FundsOperation, Reports, and Configuration. The main section has filters for Product, Trade Date (05-Mar-2021), Member Id, and Client Id. Summary statistics are displayed: Total Orders (4520), Open (1252), Rejected (1152), Cancel (0), and Traded (2116). Below this is a table with columns for Product, TAC/ Client ID, DD From, DDTo, Time Slot, Side, Type, Total Orders, Open Count, Pending Count, Reject Count, Cancel Count, Complet Count, Ordered Power, Traded Power, Open Power, and Rejected Power. The table shows 10 items on page 1 of 4, with a total of 37 items. The footer contains copyright information: © 2019 Power Exchange India Limited | All rights reserved | Version 1.3.3.U18(LIVE DR B).

On this screen the clients/members can select the filters in order to view the breakup of trades as per product, trade date, Member ID and Client ID. Also, this screen provides the counts of the bids for the filter criteria provided by member and would show breakup as per the status viz; Open, Rejected, cancelled, traded and the total orders.

For entering the bids in the Pratyay Portal the members/clients can please follow the followings steps from the **Trading Menu**:



From the Trading Menu click on the **Bilateral Order Entry** Option. The Bilateral Order Enter screen contains the **Market Watch** Screen which can be used by the participants to get various

Market information like the Best Buy Price, Best Buy Quantity, Best Sell Price as well as the Best Sell Quantity of the desired G-TAM Product. The G-TAM Products are displayed by Clicking the **GREEN** button under the Market Watch screen as shown below:

Market Watch

Non Green **Green**

Product: ALL(A) Del Date: From Date To To Date From Time Slot: -- Select -- To Time Slot: -- Select -- Search Reset Market Review

Product	Session	Delivery	Slot	Best Buy Price	Best Buy Qty	Best Sell Price	Best Sell Qty	Last Traded Price	Total Traded Qty	MarketDepth	TokenEndTime
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	00:00-00:15	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	00:15-00:30	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	00:30-00:45	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	00:45-01:00	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	01:00-01:15	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	01:15-01:30	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00
GTAM-ANYDA	Buy / Sell	06-Mar-2021 To 06-Mar-2021	01:30-01:45	4000	8			4000	1092	RegionwideMarketDepth	05-Mar-2021 20:00

10 Wrap Page 1 of 278 Display 1 to 10 of 2771 items

Below this screen is the Bilateral **Order Entry Screen** in which the participants can enter the desired orders as follows:

Bid Entry

Product Group: --Select-- Product Source: --Select-- Product: WeekWFn1(B) Buy/Sell: BUY TM ID: Client Id: --Select--

Del Date: 06-Mar-2021 To 06-Mar-2021 Slot: Slot Wise From Time Slot: -- Select -- To Time Slot: -- Select -- PriceRs./MWhr: Price

QuantityMW: Qty Token Short Code: Short Code Order Type: Limit Preview Clear CONTRACTDETAIL

In the **Bids Entry Screen** Clients/Members can select/enter the following options:

- The type of G-TAM Product via the Product Group menu in which the participants can select the **desired G-TAM product** from the following list:

Product Group

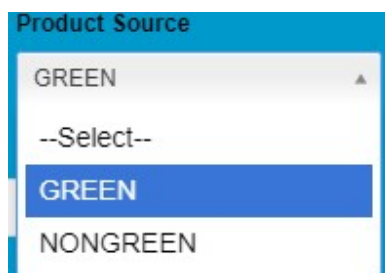
--Select--

--Select--

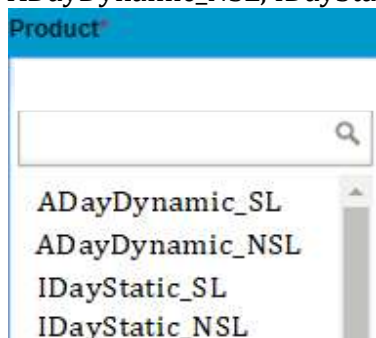
Anyday

Intraday

- The product source needs to be set as **GREEN** from the list as shown below:



- c. The **type of GREEN product i.e. Solar or Non-Solar** viz ADayDynamic_SL, ADayDynamic_NSL, IDayStatic_SL and IDayStatic_NSL via the Product Menu.



- d. The buy/sell side depending on the type of order the participant wants to place.
- e. The TM-ID will show the member ID by default.
- f. Client id have to selected accordingly to place a bid on behalf of that client.
- g. The delivery date to and from depending on the requirements of the participant.
- h. The Slot option will be selected as Slot Wise by default.
- i. The delivery time to and from depending on the requirements of the participant.
- j. The bid price in Rs. /MWh at which the participant wants to bid.
- k. The Quantity of power in MW the participant wants to bid.
- l. The type of order i.e. Limit, FOK & FAK which are described below:
- FAK** acronym for **Fill and Kill** means the quantity which can be matched against resting order according to the matching rules of the selected product will be matched and balance will be immediately cancelled. FAK type orders will never rest in the order book.
 - FOK** acronym for **Fill or Kill** means either entire order quantity is matched against resting order according to the matching rules of the selected product or the order will be cancelled i.e. either order will be matched fully or is cancelled. FOK type orders will also never rest in the order book.
 - Limit orders** will rest in the order book. Please refer to PXIL Circular no. PXIL/Operations/2020-21/310 dated November 25,2020 for more details.

Once Bids are entered after pressing the Preview button on the above screen and afterwards confirmation of the same, they are displayed on the Summary (Landing) page.

If the **bid quantity is more than the unutilized NOC (No Objection Certificate) i.e. quantity mentioned in NOC minus utilized quantity through PXIL, for the delivery period the bids would be rejected.** The utilized NOC will be checked across all the pending orders, traded orders or scheduled orders in PXIL system.

[ANNEXURE-3](#)

MANUAL FOR VIEWING REPORTS FOR G-TAM PRODUCTS:

Post successful trade and application processing and creation at the Exchange End in the G-TAM products, various reports are provided to Member/Clients. The Members can access the desired reports from the **Reports menu** as shown below:

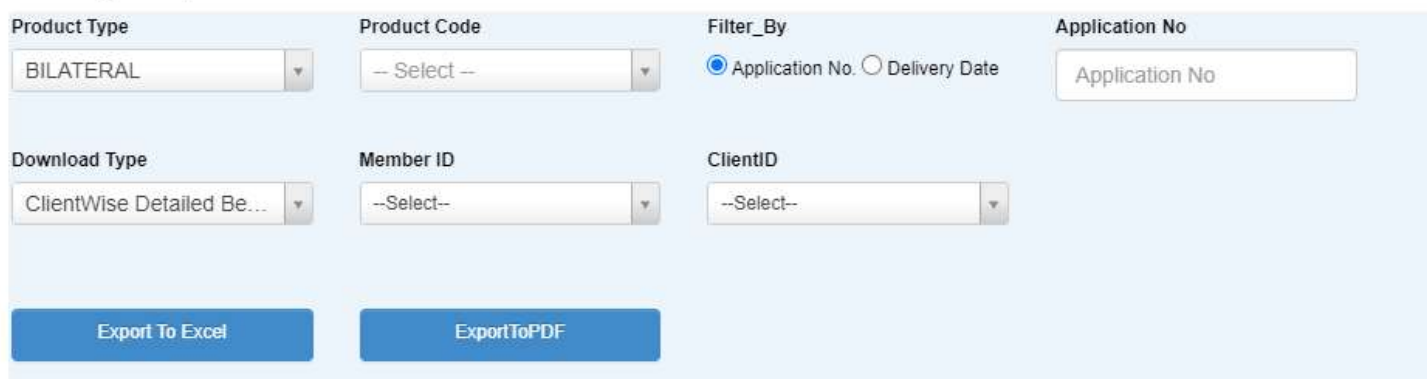


The screenshot shows a dark grey sidebar menu with the word "Reports" followed by a downward arrow. To the right of this menu, a list of report types is displayed in a light grey box. The list includes: DAS, RTM, Margin Reports, REC Reports, ECERT Reports, Obligation Report, Cost Of Power Report, Charges Report, Curtailment Details, Memberwise Report, Report History, and GTAMPurchaseCertificate. Each item has a small right-pointing arrow next to it.

The various Reports in following screens and formats are available in G-TAM Products Segments for Members:

1) Charges Report

≡ ChargesReport



The screenshot shows the "ChargesReport" form. It has a light blue background. At the top, there are four main sections: "Product Type" with a dropdown menu showing "BILATERAL", "Product Code" with a dropdown menu showing "-- Select --", "Filter_By" with two radio buttons (selected: "Application No.", unselected: "Delivery Date"), and "Application No" with a text input field. Below these, there are three more sections: "Download Type" with a dropdown menu showing "ClientWise Detailed Be...", "Member ID" with a dropdown menu showing "--Select--", and "ClientID" with a dropdown menu showing "--Select--". At the bottom, there are two blue buttons: "Export To Excel" and "ExportToPDF".

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POWER EXCHANGE INDIA LIMITED

Certificate of Purchase of Renewable Energy

Number C - Certificate Number

Issued On - Trade Date

Serial No. - Serial Number

Buyer TAC Name

Energy after all curtailment MWh

Energy Type [Solar / Non-Solar]

This certifies that Buyer TAC Name has purchased Energy after all curtailment

MWh of Renewable energy generated from [Solar / Non-Solar] source for the period [Delivery Start Period] to [Delivery End Period], through *Power Exchange India Limited*.

This certificate represented hereby is issued and shall be held subject to all the provisions of the regulations of Honorable CERC as amended from time to time and the Bye - laws, Rules and Business Rule of *Power Exchange India Limited*.

Power Exchange India Limited

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CIN:- U74900MH2008PLC179152, Phone no.+ 91 22 4009 6667/87, Fax: + 91 22 40096690/33, Web Site:www.powerexindia.com.

Email : pxi_mktops@pxil.co.in

Note: - This is a computer generated statement hence doesn't require signature.

ANNEXURE-4

THE STANDING CLEARANCE/NO-OBJECTION CERTIFICATE REQUIREMENTS FOR G-TAM PRODUCTS:

The sellers need to provide Standing Clearance/ No-objection Certificate to the Exchange in Advance in the Format PX-I as shown below (or as per the Procedure for Scheduling provided by CERC from time to time):

FORMAT: PX-I

“Standing Clearance”

<<Format in which Standing Clearance is to be given by SLDCs to a State Utility or intra-state Entity for submission to Power Exchange>>

Ref. No. _____ Dated. _____

1. Name of the SLDC issuing No Objection :
2. Region : North / West / South / East / North-East
3. Name of the Entity :
4. Status of Entity (e.g. State Utility/CPP/IPP/DISCOM etc.):
5. If Generator, then Type of Generator (RE or Non-RE) :
6. Point(s) of Connection :
7. Max. MW ceiling allowed for Injection* :
8. Max. MW ceiling allowed for Drawal* :
- (* SLDCs may specify different MW ceilings for different time blocks, if required.)
9. Validity Period : From : <<Date>> To: <<Date>>
10. Transmission losses (besides Regional Transmission losses)

	Whether Applicable or not (Yes/No)	(%) loss
State Transmission losses		
Distribution Licensees losses		
Any other losses		

11. Transmission charges (besides Regional Transmission charges)

	Whether Applicable or not (Yes/No)	Rate (Rs./MWh)
State Transmission Charges		
Distribution Licensees		
Any other charges		

Declaration:

It is hereby certified that:

- a) We have “No Objection” to seeking and availing Open Access by <<Name of Entity>>, through Power Exchange upto the MW ceiling as specified above, in accordance with applicable regulations of CERC/<<State>> ERC.
- b) We have the required infrastructure for energy metering and time block wise accounting in place. The State/ Distribution licensee network has the required transfer capability for transfer of power as per specified ceiling.
- c) The Transmission Charges for the use of State/Distribution Licensee network and Operating Charges for the State Load Despatch Centers shall be directly settled by Power Exchange with us.
- d) The State Utility designated for the purpose of collection/disbursement of UI charges shall be responsible for timely payment of State’s composite dues into the Regional Pool Account.
- e) Any mismatch between the Scheduled and Actual drawal/injection for the intra-State Entity shall be determined by us and will be covered in the intra-State UI accounting scheme, or as applicable.
- f) The Reactive Energy Charges shall be governed by the Regulations applicable within the State.
- g) We shall disburse the Transmission Charges for use of the State/Distribution Licensee Network to the State Transmission Utility /Distribution Licensee directly.
- h) We shall inform the total import and export capability of the State as a whole to all concerned. Attempt shall be made to declare this in advance through our website.
- i) Any change in the contents of the Standing Clearance shall be conveyed to the party to whom Standing Clearance was given, latest by 10 Hrs. of the day prior to the day of transaction. In such cases, the Power Exchange(s) shall also be informed simultaneously.
- j) If the applicant is generator, then the Drawal quantum mentioned under serial no. 8 above is applicable only for the duration of forced outage of Generator.
- k) If the applicant is generator, then generator shall ensure that bidding in the Real Time Market is done taking into account their ramping constraints

Signature
Name
Designation
(Authorized Signatory)
Phone No.:

Place:
Date:

The Standing Clearance/ No-objection Certificate provided by the Seller to the Exchange in Advance in the Format PX-I below (or as per the Procedure for Scheduling provided by CERC from time to time) must clearly mention in the Max MW Ceiling allowed for Injection* row the following:

- 1) Total eligible maximum power allowed for Injection* being segregated into RE(Renewable) and Non- Renewable Power.
- 2) The source of RE(Renewable) power being Solar (SL) or Non-Solar (NSL).

A sample of the above information mentioned in Max MW Ceiling allowed for Injection* row of the Standing Clearance/ No-objection Certificate provided by Seller is as presented below:

“Standing Clearance” / “No Objection Certificate”
 <<Format in which Standing Clearance/NOC to be given by SLDCs to a State Utility or intra-state Entity for submission to Power Exchange>>

NOC No.

Date:

1. Name of the SLDC issuing NOC :
2. Region :
3. Name of the Entity :
4. Status of Entity (e.g.; State Utility/CPP/IPP/Discom etc.):
5. Point(s) of Connection :
6. Max. MW ceiling allowed for Injection* : **5000MW (2500MW+2500MW RE-Solar)**
7. Max. MW ceiling allowed for Drawal* : **5000MW**
 (* SLDCs may specify different MW ceilings for different time blocks, if required.)
8. Validity Period :
9. Transmission losses (besides Regional Transmission losses)

	Whether Applicable or not (Yes/No)	(%) loss
State Transmission losses		
Distribution Licensees losses		
Any other losses		

10. Transmission charges (besies Regional Transmission charges)

	Whether Applicable or not (Yes/No)	Rate (Rs./MWh)
State Transmission Charges		
Distribution Licenees		
Any other charges		

Declaration:

It is hereby certified that:

- a) We have “No Objection” to seeking and availing Open Access by TSSPDCL/TSPCC through Power Exchange up to the MW ceiling as specified above, in accordance with applicable regulations of CERC/TSERC.
- b) We have the required infrastructure for energy metering and time block wise accounting in place. The State/ Distribution licensee network has the required transfer capability for transfer of power as per specified ceiling.
- c) The Transmission Charges for the use of State/Distribution Licensee network and Operating Charges for the State Load Despatch Centers shall be directly settled by Power Exchange with us.
- d) The State Utility designated for the purpose of collection/disbursement of UI charges shall be responsible for timely payment of State’s composite dues into the Regional Pool Account.
- e) Any mismatch between the Scheduled and Actual drawal/injection for the intra-State Entity shall be determined by us and will be covered in the intra-State UI accounting scheme, or as applicable.
- f) The Reactive Energy Charges shall be governed by the Regulations applicable within the State.
- g) We shall disburse the Transmission Charges for use of the State/Distribution Licensee Network to the State Transmission Utility /Distribution Licensee directly.
- h) We shall inform the total import and export capability of the State as a whole to all concerned. Attempt shall be made to declare this in advance through our website.
- i) Any change in the contents of the Standing Clearance/NOC shall be conveyed to the party to whom Standing Clearance/NOC was given, latest by 10 Hrs. of the day prior to the day of transaction. In such cases, the Power Exchange(s) shall also be informed simultaneously.

ANNEXURE-5

THE PRICE DISCOVERY MECHANISM FOR G-TAM PRODUCTS:

In trading session of products with Continuous Matching methodology, the participants shall submit buy and sale Orders on a continuous basis during the trading period. The buyers and sellers Order will be matched on continuous basis with **price-time priority**.

Without prejudice to the generality of the above, in the Continuous Trading sessions, Buyers and Sellers will enter their Orders and the Orders will be matched as per the **Order type, Price and Time of Order**.

1) Price Time Priority

- 1.1. In the contracts with Continuous matching, if two Orders entered in the terminals are eligible for a match as per the matching rules, then matching will take place instantly
 - 1.1.1. For order matching, the best buy order is the one with the highest price and the best sell order is the one with the lowest price.
 - 1.1.2. The best buy order is matched with the best sell order for the same contract.
 - 1.1.3. The Orders are matched based on price and time priority. In case of more than one Order having the same price, the Order submitted at the earliest will get the priority in matching.
 - 1.1.4. An order may match partially with another order resulting in multiple trades.
 - 1.1.5. Members can proactively enter orders in the system, which will be displayed in the system till the full quantity is matched by one or more of counter-orders and result into trade(s) or is cancelled by the member.
 - 1.1.6. Alternatively, members may react to an order available in market watch and place orders. In a matched pair, the order lying unmatched is considered 'passive' (the one which was entered earlier) and the order that came later is considered 'active'.

2) Price matching (Traded Price):

- 2.1. Orders will always be matched at the passive order price.
 - 2.1.1. This ensures that the orders with an earlier time stamping with same price get priority over the orders that come in later. The price of the first Order entered in the system will be considered as the traded price for the contract.

Illustration 1:

Buy Order Quantity	Buyer Order Price (Rs. /MWh)	Sell Order Quantity	Sell Order Price (Rs. /MWh)
100	3400	150	3600
50	3300	100	3700
100	3000	100	4000
100	2500	60	5500
50	2000	100	6000

In the above, the 5 best buy and Sell Orders are given. However, none of the Orders can match as the best buy Order price is lower than the best Sell Order price. These Orders are open and passive.

Traded Price: -

Traded Quantity: 0 MW

Illustration 2:

Buy Order Quantity	Buyer Order Price (Rs. /MWh)	Sell Order Quantity	Sell Order Price (Rs. /MWh)
100	3400	150	3600
50	3300	100	3700
100	3000	100	4000
100	2500	60	5500
50	2000	100	6000
100	3650		

Say a Participant enters a Buy Order for quantity 100 at price 3650, this buy Order (active) shall match with the best passive Order i.e. at rate 3600 and the matched quantity will be 100. The Traded price shall be 3600.

Traded Price: 3600

Traded Quantity: 100 MW

ILLUSTRATION OF MATCHING OF STATIC AND DYNAMIC PRODUCTS:

1) Static Continuous product

a. Case 1:

Participant A entered a sell order from 18:00 to 20:00 hours of 100 MW at Rs. 2450 per MWh for each 15 minutes slots between 18:00 to 20:00 hours. Participant A has entered for same delivery slot to fulfill his requirement of 50MW at Rs. 2500 per MWh for each 15 minutes slot. Since the matching is continuous in nature, orders once entered and found a match will be matched instantly.

Participant (in ascending time priority of bidding)	Time Slot	Type	Quantity (in MW)	Rate (in Rs. /MWh)
A	18:00-18:15	Sell	100	2450
A	18:15-18:30	Sell	100	2450
A	18:30-18:45	Sell	100	2450
A	18:45-19:00	Sell	100	2450
A	19:00-19:15	Sell	100	2450
A	19:15-19:30	Sell	100	2450
A	19:30-19:45	Sell	100	2450
A	19:45-20:00	Sell	100	2450
B	18:00-18:15	Buy	50	2500
B	18:15-18:30	Buy	50	2500
B	18:30-18:45	Buy	50	2500
B	18:45-19:00	Buy	50	2500
B	19:00-19:15	Buy	50	2500
B	19:15-19:30	Buy	50	2500
B	19:30-19:45	Buy	50	2500
B	19:45-20:00	Buy	50	2500



Result: In static product, partial clearance is also possible for the matching time blocks of buy and sell orders.

Participant A and Participant B orders will match from 18:00 Hours to 20:00 Hours for **50 MW at Rs. 2450 per MWh**.

b. Case 2:

Participant A entered a buy order from 18:00 to 20:00 hours of 100 MW at Rs. 2500 per MWh for each 15 minutes slots between 18:00 to 20:00 hours. Participant B has a buy order from 19:00 to 20:00 hours of 100 MW at Rs. 2400 per MWh for each 15 minutes slots between 19:00 to 20:00 hours. Since the matching is continuous in nature, orders once entered and found a match will be matched instantly.

Participant (in ascending time priority of bidding)	Time Slot	Type	Quantity (in MW)	Rate (in Rs. /MWh)
A	18:00-18:15	Buy	50	2500
A	18:15-18:30	Buy	50	2500
A	18:30-18:45	Buy	50	2500
A	18:45-19:00	Buy	50	2500
A	19:00-19:15	Buy	50	2500
A	19:15-19:30	Buy	50	2500
A	19:30-19:45	Buy	50	2500
A	19:45-20:00	Buy	50	2500
B	19:00-19:15	Sell	100	2400
B	19:15-19:30	Sell	100	2400
B	19:30-19:45	Sell	100	2400
B	19:45-20:00	Sell	100	2400



Result: In static product, the orders are stored in separate slots of **15 minutes each**. The quantity will be matched from 19-20 hours as these are the match-able orders available in the system. The orders for the other hours will remain open in the system for further matching in case new counterpart orders are available in the system for further matching.

Participant A and Participant B orders will match from **19:00 Hours to 20:00 Hours for 50 MW at Rs. 2500 per MWh**.

c. Case 3:

Participant A entered a buy order from 17:45 to 19:00 hours of 50 MW at Rs. 2500 per MWh for each 15 minutes slots between 17:45 to 19:00 hours. Participant B entered a buy order from 18:30 to 19:00 hours of 20 MW at Rs. 2450 per MWh for each 15 minutes slots between 18:30 to 19:00 hours. Participant C entered a buy order from 18:00 to 19:00 hours of 30 MW at Rs. 2400 per MWh for each 15 minutes slots between 18:00 to 19:00 hours. Participant D entered a sell order from 18:00 to 20:00 hours of 100 MW at Rs. 2300 per MWh for each 15 minutes slots between 18:00 to 20:00 hours.

Participant (in ascending time priority of bidding)	Time Slot	Type	Quantity (in MW)	Rate (in Rs. /MWh)
A	17:45-18:00	Buy	50	2500
A	18:00-18:15	Buy	50	2500
A	18:15-18:30	Buy	50	2500
A	18:30-18:45	Buy	50	2500

A	18:45-19:00	Buy	50	2500
B	18:30-18:45	Buy	20	2450
B	18:45-19:00	Buy	20	2450
C	19:00-19:15	Buy	30	2400
C	19:15-19:30	Buy	30	2400
C	19:30-19:45	Buy	30	2400
C	19:45-20:00	Buy	30	2400
D	18:00-18:15	Sell	100	2300
D	18:15-18:30	Sell	100	2300
D	18:30-18:45	Sell	100	2300
D	18:45-19:00	Sell	100	2300
D	18:30-18:45	Sell	100	2300
D	18:45-19:00	Sell	100	2300
D	19:00-19:15	Sell	100	2300
D	19:15-19:30	Sell	100	2300
D	19:30-19:45	Sell	100	2300
D	19:45-20:00	Sell	100	2300



Result: In static product, the orders are stored in separate slots of **15 minutes each**. The quantity will be matched from 18:00-20:00 as these are the match-able orders available in the system. The orders for the other hours will remain open in the system for further matching in case new counterpart orders are available in the system for further matching.

Participant A and Participant D orders will match from **18:00 Hours to 19:00 Hours for 50 MW at Rs. 2500 per MWh.**

Participant B and Participant D orders will match from **18:30 Hours to 19:00 Hours for 20 MW at Rs. 2450 per MWh.**

Participant C and Participant D orders will match from **19:00 Hours to 20:00 Hours for 30 MW at Rs. 2400 per MWh.**

In this case three separate applications for each bilateral trade will be created by the Exchange.

2) Dynamic Continuous product

a. Case1:

The Participant A has entered a sell order from 18:00 to 20:00 Hours for 100 MW at Rs. 2450 per MWh. Participant B has also entered for same delivery slot i.e. 18:00 to 20:00 Hours to fulfill his requirement of 100MW at Rs. 2500 per MWh. Since the matching is continuous in nature, orders once entered and found a match will be matched instantly. In Dynamic Continuous product, the orders will be stored as complete block as entered in the system.

Participant (in ascending time priority of bidding)	Time Slot	Type	Quantity (in MW)	Rate (in Rs. /MWh)
A	18:00-20:00	Sell	100	2450
B	18:00-20:00	Buy	50	2500



Result: In dynamic product, partial clearance is also possible provided the delivery period of both the buy and sell order is the same.

Participant A and Participant B orders will match from 18:00 Hours to 20:00 Hours for **50 MW at Rs. 2450 per MWh.**

b. Case 2:

Here the Participant A has entered a sell order from 18:00 to 19:00 Hours for 100 MW at Rs. 2450 per MWh. Participant B has also entered buy orders from 18:00 to 20:00 Hours for same delivery slot to fulfill his requirement of 100MW at Rs. 2500 MWh for each hourly slot.

Participant (in ascending time priority of bidding)	Time Slot	Type	Quantity (in MW)
A	18:00-19:00	Sell	100
B	18:00-20:00	Buy	100




Result: In dynamic product, the delivery period of sell side **does not match** with the buy side. Hence, the orders will remain unmatched and open until a counterpart with same delivery period is available for matching or until gate closure. In dynamic product, partial clearance is also possible but the delivery period must be same.

Participant A and Participant B orders **will not match**.

TEMPLATE OF G-TAM PURCHASE CERTIFICATE:

The certificates will be generated **after a communicated number of days following the last day of the delivery period to the Buyer**. The number of days after which the certificate will be generated will be decided by the Exchange and intimated to all the Clients/Members through its circulars from time to time. The Purchase Certificates in generated in the following format:

 POWER EXCHANGE INDIA LIMITED	
Certificate of Purchase of Renewable Energy	
Number C - <small>Certificate Number</small>	Issued On - <small>Trade Date</small>
Serial No. - <small>Serial Number</small>	
 <small>Buyer TAC Name</small>	
 <small>Energy after all curtailment</small> MWh	
Energy Type [Solar / Non-Solar]	
This certifies that <small>Buyer TAC Name</small> has purchased <small>Energy after all curtailment</small>	
MWh of Renewable energy generated from [Solar / Non-Solar] source for the period [Delivery Start Period] to [Delivery End Period], through <i>Power Exchange India Limited</i> .	
This certificate represented hereby is issued and shall be held subject to all the provisions of the regulations of Honorable CERC as amended from time to time and the Bye - laws, Rules and Business Rule of <i>Power Exchange India Limited</i> .	
<small>Power Exchange India Limited</small> <small>Regd. Office: Power Exchange India Ltd.9th Floor, 901 ,Sumer Plaza,Marol Maroshi Road,Marol Andheri (East),Mumbai 400 059, India.</small> <small>CIN:- U74900MH2008PLC179152, Phone no.+ 91 22 4009 6667/87, Fax: + 91 22 40096690/33, Web Site:www.powerexindia.com.</small> <small>Email : pxi_mktops@pxil.co.in</small>	
Note: - This is a computer generated statement hence doesn't require signature.	

Trading timelines of Intra Day – Solar / Non-Solar Products:

For Same (T) Day Delivery: DDMMYY=T				For Next (T+1) Day Delivery: DDMMYY=T+1			
Token Short Code	Delivery Start Time	Delivery End Time	Gate Closure Time	Token Short Code	Delivery Start Time	Delivery End Time	Gate Closure Time
DDMMYY1717	04:00	04:15	00:45	-	-	-	-
DDMMYY1818	04:15	04:30	01:00	-	-	-	-
DDMMYY1919	04:30	04:45	01:15	-	-	-	-
DDMMYY2020	04:45	05:00	01:30	-	-	-	-
DDMMYY2121	05:00	05:15	01:45	-	-	-	-
DDMMYY2222	05:15	05:30	02:00	-	-	-	-
DDMMYY2323	05:30	05:45	02:15	-	-	-	-
DDMMYY2424	05:45	06:00	02:30	-	-	-	-
DDMMYY2525	06:00	06:15	02:45	-	-	-	-
DDMMYY2626	06:15	06:30	03:00	-	-	-	-
DDMMYY2727	06:30	06:45	03:15	-	-	-	-
DDMMYY2828	06:45	07:00	03:30	-	-	-	-

Subsequent Time Blocks

DDMMYY9292	22:45	23:00	19:30	-	-	-	-
DDMMYY9393	23:00	23:15	19:45	-	-	-	-
DDMMYY9494	23:15	23:30	20:00	-	-	-	-
DDMMYY9595	23:30	23:45	20:15	-	-	-	-
DDMMYY9696	23:45	24:00	20:30	DDMMYY0101	00:00	00:15	20:45
				DDMMYY0202	00:15	00:30	21:00
-	-	-	-	DDMMYY0303	00:30	00:45	21:15

The token shall be in the form of DDMMYYHRHR= DD-Delivery date, MM-Month, YY-Year, HR-End of Slot number for the Delivery from E.g.: If Delivery Date is 10th June 2020, Delivery period 05:15-05:30 Hrs then token short code is 1006212222.

After the expiry of token at token end time specified above, the delivery of the said time block in table will not be allowed. For Instance, if token with short code 1006202121 expires, the delivery of the time blocks 05:00-05:15 will not be allowed further for order entry.

Carry forward of Orders in G-TAM Intraday products: The unmatched Orders shall remain **active throughout the day except for Orders cancelled by Member(s) (or) those truncated by the system due to expiry of delivery period/ Token end time** as illustrated below:

Case 1: At 13:00 Hrs

	Delivery Time Slot	Quantum(MW)	Rate(Rs./MWhr)	Order Status
Buyer A	16:00-19:00	100	3100	Active

A participant has placed a buy Order from 16:00 Hrs to 19:00 Hrs of 100 MW in each hourly slot @ Rs. 3100 /MWh at 13:00 Hrs. The Order will be active till the token end time 13:45 for 16:00-17:00 Hrs, in case there is no counterpart available for matching. Case 2: After 13:45 Hrs the token for 16:00-17:00 Hrs slot will expire.

Case 2: After 13:45 Hrs the token for 16:00-17:00 Hr slot will expire.

	Delivery Time Slot	Quantum(MW)	Rate(Rs./MWhr)	Order Status
Buyer A	16:00-17:00	100	3100	Inactive
	17:00-19:00	100	3100	Active

After 13:45 Hrs the token for 16:00-17:00 Hrs slot will expire considering the 2:15 Hrs gap from delivery hour, the Order for Hour slot 16:00-17:00 Hrs will be held inactive and the other subsequent hour Orders will remain active and valid.

Case 3:

	Delivery Time Slot	Quantum(MW)	Rate(Rs./MWhr)	Order Status
Buyer A	17:00-19:00	100	3100	Active

	Delivery Time Slot	Quantum(MW)	Rate(Rs./MWhr)	Order Status
Seller A	17:00-19:00	50	3100	Active

The above case illustrates that a seller has placed an order from 17:00-19:00 Hrs, 50 MW @ Rs. 3100 / MWhr. The Order from 17:00-19:00 Hrs will be cleared for buyer and seller with 50 MW as clearing quantum after matching and the remaining Order of Buyer A will remain active and will be carried forward.

Case 4:

	Delivery Time Slot	Quantum(MW)	Rate(Rs./MWhr)	Order Status
Buyer A	17:00-19:00	50	3100	Matched
	17:00-19:00	Remaining 50	3100	Active

The above case illustrate that the remaining Orders are active for further matching with available counterpart and if not then they will expire after token end time.

Special Case: In this case, Seller A and Buyer B have entered 2 orders for a single hour i.e., 16:00-17:00 Hrs but at a different rate. Please refer the table below:

Participant	Time Slot	Quantity (in MW)	Rate (in Rs./MWH)	Time of order	Gate Closure
Seller A	16:00-17:00 Hrs	100	3000	11:30 Hrs	12:45 Hrs
Buyer B	16:00-17:00 Hrs	100	3000	11:31 Hrs	12:45 Hrs
Seller A	16:00-17:00 Hrs	150	2500	11:32 Hrs	12:45 Hrs
Buyer B	16:00-17:00 Hrs	150	2500	11:33 Hrs	12:45 Hrs

At 11:31 Hrs, the orders of buyer B and seller A will match instantly. However, if the seller and buyer wish to buy more power and the orders match at a different rate at 11:33Hrs as shown in the table above. In such cases, 2 applications will be made for same hour as the rates at which matching is done for both the applications are different. Under such cases there will be 2 applications made between same parties for 100 MW for Time slot 16:00-17:00 Hrs & 150 MW for Time slot 16:00-17:00 Hrs at Rs. 3000 /MWH and Rs. 2500/MWH respectively.

However, if the seller A and buyer B enter orders into PRATYAY as per the table below, then a single application will be made with the collated quantity in case the application for the first trade that is at 11:31 Hrs is not made. A single application will be made for 250 MW for time slot 16:00-17:00 Hrs at Rs. 2750 /MWH.

Participant	Time Slot	Quantity (in MW)	Rate (in Rs./MWH)	Time of order	Gate Closure
Seller A	16:00-17:00 Hrs	100	2750	11:30Hrs	12:45 Hrs
Buyer B	16:00-17:00 Hrs	100	2750	11:31Hrs	12:45 Hrs
Seller A	16:00-17:00 Hrs	150	2750	11:32Hrs	12:45 Hrs
Buyer B	16:00-17:00 Hrs	150	2750	11:33Hrs	12:45Hrs

This will be applicable for both G-TAM Anyday Solar /Non-solar and G-TAM Intraday Solar /Non-solar products.

Illustration of Application Creation for Anyday- Solar / Non-Solar and Intra Day - Solar / Non-Solar Products:

Participant	Hour	Quantity (MW)	Rate (Rs. /MWh)	Bid time
Buyer A	18:00-24:00	100	3000	11:06
Seller B	18:00-24:00	100	2900	11:30

In the above case, the following applications needs to will be created:

Application no.	Matched Pairs	Hour	Quantity (MW)	Rate (Rs. /MWh)
X1	Buyer A-Seller B	18:00-24:00	100	3000

PXIL Gate Closure Time: 14:45 Hrs

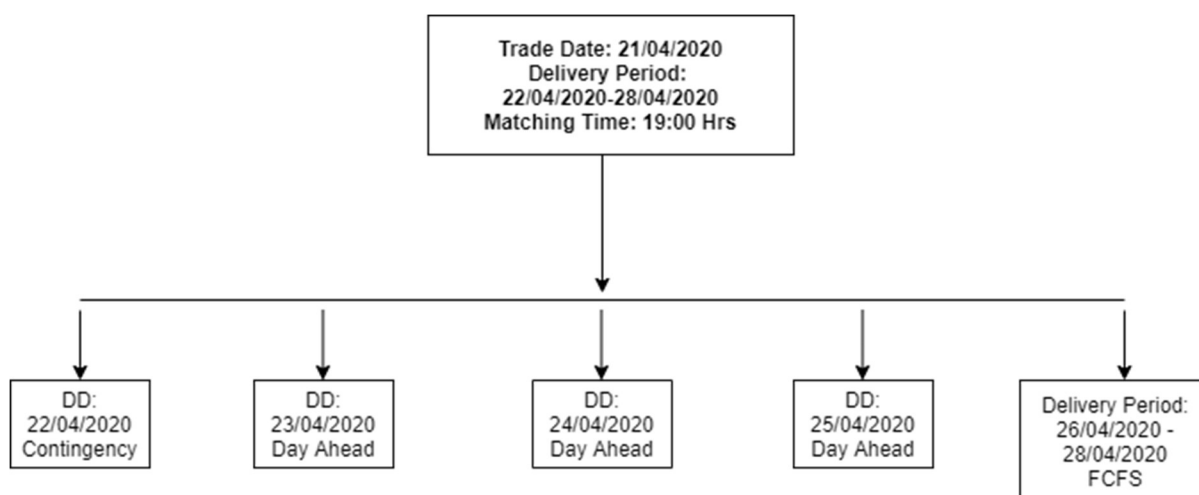
Application Creation Time: 11:30 Hrs

RLDC punching Cut-off Time: 15:30 Hrs

Latest Consent Received from	Latest Time of Receiving Consent	Delivery Period	Effective Traded MWh
Seller B or Buyer A	11:30 - 15:30 Hrs	18:00-24:00 Hrs	600 MWh
Seller B or Buyer A	15:30 – 15:45 Hrs	18:15-24:00 Hrs	575 MWh
Seller B or Buyer A	15:45 – 16:00 Hrs	18:30-24:00 Hrs	550 MWh
Seller B or Buyer A	16:00 – 16:15 Hrs	18:45-24:00 Hrs	525 MWh

In case of **Anyday- Solar / Non-Solar** products, the application shall be made as illustrated below:

Case 1: Consider the trade date to be 21st April 2020(T) and the buyer and seller is matched at 19:00 Hrs for delivery period of 7 days i.e., 22nd April to 28th April 2020. In this particular case, the delivery period is continuous but the provisions at RLDC does not allow to apply for the said period in a single application. Hence, multiple applications are required to be made in this case. A total of 5 numbers of application will be made based on the rules outlined by RLDC's, 1 number Contingency application, 3 numbers Day Ahead Application & 1 numbers First come first serve application



Case 2: In this case, suppose the trade date is 21st April 2020(T) and the buyer and seller are matched at 16:40 Hrs for delivery period of 7 days i.e., 22nd April to 28th April 2020, then a total of 4 applications will be created; 1 numbers of Contingency application, 2 numbers of Day Ahead Application & 1 numbers of First come first serve application. If the application time is before 17:30 Hrs then only this arrangement works else the application numbers will be same as case 1.

