



Ref No. 01.CD.MA-01

Date: 28.09.2023

To,
The Secretary
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building,
36, Janpath,
New Delhi-110001

Subject: Submissions of NTPC on Central Electricity Regulatory Commission's discussion paper on Market coupling.

Sir,

Hon'ble Commission vide its notification dated 21.08.2023 has published the discussion paper on market coupling and invited views/ comments/ suggestions/ objections from various stakeholders on the discussion paper

In this regard, please find enclosed comments/ suggestions of NTPC on the Discussion paper on market coupling.

Thanking you,

Yours sincerely,

Ajay Dua

ED (Commercial)

अजय दुआ/AJAY DUA
कार्यकारी निदेशक (वाणिज्यिक)
Executive Director (Commercial)
एनटीपीसी लिमिटेड/NTPC LIMITED

NTPC Comments on CERC Approach Paper on Market Coupling:

The Central Electricity Regulatory Commission notified Power Market Regulations, 2021, on 15th Feb 2021, which came into force on 15th Aug 2021. Part-5 of the Power Market Regulations 2021 (i.e., Regulations 37 to 39) provides the enabling provisions for market coupling among the Power Exchanges. The provision of market coupling is yet to be implemented. In view of the above a discussion paper was floated on date 21st Aug 2023. Comments are sought on the discussion paper published.

As per the discussion paper objective of market coupling is as follows:

- Discovery of uniform market clearing price for the DAM, RTM or any other market
- Optimal Use of transmission infrastructure
- Maximization of economic surplus,

Summary of the Submissions

NTPC is in line with this view of commissions that Market coupling is the need of hour for further increasing the efficiency of electricity market. Without market coupling participants are forced to take the multiple membership and do the same necessary compliance and paying membership fees on each exchange. Therefore, market coupling will help in reducing the duplicity in the system.

In absence of market coupling on many instances a buyer/seller is not able to transact on exchange despite willingness to pay price because no corresponding seller/buyer is present in that time block in the exchange in which they are participating while the same is available on other exchange. There are instances where due to lack of liquidity, no conducive trade has taken place. Entities on both buy and sell sides are left stranded due to lack of matching.

Further instead of allowing market coupling operation on rotational basis among exchange a separate entity or System operator or any independent regulated entity should be there so that various innovative market products as well as financial products can be launched in the electricity segment in future. This will also increase the competition among the exchanges and will lead to better services and optimization of transaction cost for the market participants which will help to reduce the power purchase cost of DISCOMs. By allowing market coupling market participants can freely exercise their choice of exchange and will reduce monopoly of any single entity to control the market. Market coupling fosters a healthier and more competitive marketplace for electricity trading.

NTPC comments on various provision of staff paperwork is as follows:

Provision:

5.2 Does the current Indian power market scenario form a compelling case for market coupling?

NTPC Comments:

1. The Power Market Regulations of 2010, along with the subsequent revisions in 2021 (PMR 2021), have outlined a vision for a multi-exchange model in India's power market. This vision aims to foster competition among exchanges, empowering market participants to make choices based on technological capabilities and the quality of services offered. However, the current structure of the Day-Ahead Market (DAM) and Real-Time Market (RTM) segments does not effectively allow market participants to explore alternative exchange options. This monopolistic market behaviour is detrimental to national interests. Presently three energy exchanges IEX, HPX, PXIL operates in our country.

- Traded volume comparison of different power exchanges for various products in 2023 is attached as **Annexure-I**. It can be observed that IEX has dominant market share in DAM, RTM and GDAM segments.
- There are instances where due to lack of liquidity, no conducive trade has taken place in PXIL. The bid data of 14th to 17th Sept 2023 of PXIL is attached as reference in **Annexure-II**. It can be observed that entities on both buy and sell sides are left stranded due to lack of matching.
- The implementation of Market Coupling holds the promise of granting market participants the freedom to choose their preferred exchange. This will compel all existing exchanges to vie against one another, striving to deliver superior services and expand their market share. Such a shift will promote a more dynamic and competitive power market, ultimately benefiting all the participants. By allowing market participants more choices and reducing the ability of any single entity to control the market, market coupling fosters a healthier and more competitive marketplace for electricity trading.

2. Market coupling is designed to eliminate price differentials and create a more integrated and competitive market where volume would flow to all exchanges on basis of their service levels and the credibility. Here's how it works:

- **Price Convergence:** Market coupling aims to achieve price convergence across different exchanges or market segments. This means that the prices for the same product in different markets should be consistent. In the context of electricity markets, for example, the price for electricity should be the same regardless of which exchange you choose to trade on.
- A case for above can be seen below, when the prices of power for the same day has differed on the two platforms (Rs/unit)

Trading Date	IEX AVE MCP	PXIL AVE MCP
06/01/2022	3.53	3.99
07/01/2022	3.30	3.99
08/01/2022	3.18	4.13
11/01/2022	3.16	3.99

- **Increased Competition:** When prices are consistent, market participants have the freedom to choose the exchange based on factors other than price, such as the quality of services, reliability, and credibility of the exchange. This increased competition incentivizes exchanges to improve their services and offer competitive advantages to attract and retain customers. As a result of fee-based competition in the electricity trading business, the exchanges will focus on offering lower fees and charges, thus reduction in cost of power to DISCOMs and other market participants.
- **Efficient Allocation:** Market coupling optimizes the allocation of goods or services, ensuring that they are allocated to those who value them the most. In the context of electricity markets, this means that electricity is allocated efficiently, and market power is reduced. This leads to a fairer and more competitive marketplace.

- **Credibility and Service Levels:** Exchanges that provide better services and have a strong track record of reliability and transparency are likely to attract more market participants. Market coupling encourages exchanges to enhance their credibility and service levels to remain competitive. There are concerns with data security, privacy of bids being placed (encryption) which are expected to be overcome with the implementation of coupling under Independent Market Coupling Operator.
- **Market Manipulation:** With one dominant market exchange, there is a risk of market manipulation if unauthorized individuals or entities gain access to the trading systems. Manipulators could engage in fraudulent trading activities, such as spoofing, front-running, or spreading false information to influence market prices and gain unfair advantages.

Overall, market coupling promotes a more efficient, competitive, and credible market by aligning prices, eliminating monopolistic behaviour, and encouraging exchanges to improve their services to attract participants. It benefits both market participants and the broader economy by creating a level playing field and enhancing the overall efficiency of the market.

Provision:

5.3. Effect of coupling on technological innovation and competition

NTPC Comments:

While some may argue that market coupling will lead to a lack of appetite for bringing in technological and operational innovation, we feel, on the contrary that such a step will lead the way for implementation of collective innovation. The MCO can be tasked to lead the way for creating an innovative design for new products, improvement in existing processes and task the clearing platforms to uniformly implement the same, benefitting all stakeholders. This approach will not only enhance the quality of services provided by the exchanges but also foster innovation. Collaboration among all exchanges, in partnership with regulators, will lead to the development of optimal market

Provision:

5.4. Who shall be the Market Coupling Operator?

Commission is of the view that Grid India is doing TRAS procurement after collecting bids from power exchange and running price discovery engine and published the result on power exchange. These are the activities to be performed by MCO; therefore, System operator may be designated as market coupler.

NTPC Comments:

A well-functioning market shall guarantee the fair and orderly execution of the orders placed by the market parties, secure delivery and payment of the trades and anonymity of the transactions. These three essential attributes reflect the level of efficiency of a market.

The fear of manipulation of markets by market participants, if they are controlling the exchange, will no longer be valid as now prices will be decided by third party market coupler.

The introduction of the third party MCO will result in better optimization for efficient and transparent Price Discovery Mechanism for Power Market operations. This function which is being executed by Power Exchanges now will be shifted to a single entity and result in an unbiased and efficient system operation.

From the perspective of the market's participants in the exchanges (buyer and sellers), it may be a good proposition as the buyers and seller may more freely exercise their choice of exchange based on the transaction costs involved, rather than the chances of clearing their bids and the resultant price difference between the exchanges. The price coupling of different exchanges and discovery of single price at National Level, would be applicable for all the entities (subject to technical constraints) and would not generate multiple price signals. Irrespective of the volume cleared on any of the exchanges price would not be different for same power at the same time. NTPC agrees with the proposal of Grid-India functioning as a Market Coupling Operator. The Grid-India as a system operator has demonstrated its capability by handling TRAS market segment in both Day ahead and Real Time market. The Grid-India's technological competence and data security capability is amply demonstrated in its day-to-day operation handling continuously on pan India scale grid operation. Since Grid-India is already regulated entity and its proven technological capability makes it a natural choice as Market coupling operator. To ensure the integrity of market result, the Commission should conduct periodic audits and analysis of bid data

as part of market monitoring and surveillance. The Market Coupling Operator may charge a fee for its services.

Provision:

5.7. Changes in the settlement process

5.7.1. Traders are already collecting bids from clients, submitting bids to exchanges, and doing the clearing and settlement. In fact, security maintained by traders is approximately double the cost of power purchased, i.e. maintain a weekly average margin equivalent to power purchased while maintaining a sufficient margin for net cleared volume for tomorrow. Under such a scenario, should traders be allowed to submit their bids directly to the market coupler to reduce the cost of power for trader clients, as the clients are presently paying margins to the trader and bearing fees and margins of exchange?

NTPC Comments:

With the provision of market coupling and independent market coupler, traders may also be given flexibility to directly submit bids to the market coupler which will further compel the exchanges to offer better services in settlement and other terms.

Provision:

5.5 Which Algorithm should be adopted for a coupled market?

NTPC Comments:

As mentioned presently all three Power Exchanges have distinct algorithm, different bid type and different bidding interface. So, it is imperative that New Market Coupling Operator develops a new algorithm incorporating uniform bid types encompassing the different bid types products offered presently by all power exchanges.

Provision:

5.6 How will the clearing & settlement be carried out?

The PMR 2021 provides that the power exchanges shall carry out the Clearing and Settlement of transactions in accordance with the Payment and Settlement Systems Act, 2007 (PSSA 2007) within one year.

In the coupled market scenario, the mechanisms for clearing and settlement will diverge. Till such time a separate Clearing Corporation is introduced, situations requiring cross-settlements

between the exchanges are likely to occur. Till such time, settlement of net amount can be done between exchanges on daily basis.

NTPC Comments:

Power exchanges may be allowed to settle the payment till separate clearing corporation is introduced.

Provision:

5.8 In which market segment should the coupling be introduced first?

NTPC Comments:

Since volume of DAM and RTM segment is higher than other segments like HPTAM etc, so the coupling may be started from DAM and RTM first. However, if there is any difficulty in introducing coupling in RTM due to strict timeline, the coupling may be introduced in DAM only and later can be done into other segments including RTM.

Further Benefits of Market Coupling:

Timely availability of schedule in WBES: It has been observed that some time RTM clearance schedules are not available on WBES due to some communication failure in the system with Market couplings (through System Operator) this discrepancy can also be addressed.

Development of HPDAM and TRAS segments: It has been observed that all power exchanges have not incorporated the low liquidity segment of electricity market like HPTAM, HPDAM etc. However, these markets are required for participation of the high cost imported fuel-based gas stations of NTPC which are further supporting the grid in the time of shortfall. With System operator as MCO this market may develop in future.

Annexure-I

<u>IEX: Traded Volume in 2023 (MU)</u>								
Month	DAM	GDAM	RTM	TAM	GTAM	HPDAM	REC	ESCERTS
Jan	4947.96	285.16	2101.89	698.36	59.32		394.79	
Feb	4658.76	253.00	1714.10	696.66	93.71		373.50	153.60
Mar	4718.38	297.75	2098.33	961.56	129.43		868.81	22.88
Apr	4465.43	157.76	2156.39	621.30	59.93	0.16	199.16	122.95
May	3999.35	198.12	2429.21	821.13	97.19	0.22	142.46	202.15
Jun	4123.98	167.36	2675.93	877.25	69.54	0.54	533.39	244.19
Jul	3966.20	212.15	2541.23	833.86	57.58	0.30	623.98	70.22
Aug	3881.41	162.71	2738.79	1500.00	79.06	4.23	252.66	103.40

<u>HPX: Traded Volume in 2023 (MU)</u>								
Month	DAM	GDAM	RTM	TAM	GTAM	HPTAM	REC	ESCERTS
Jan				405.12	18.05		1.25	
Feb				570.69	22.57		0.14	1.24
Mar				476.92	1.13		1.52	47.65
Apr			0.11	600.92	46.54		27.94	
May			1.72	738.18	19.54			4.87
Jun				661.98	54.34			156.21
Jul				724.08	78.49		0.60	
Aug	0.27		1.13	1136.49	74.84	306.22	0.48	

<u>PXIL: Traded Volume in 2023 (MU)</u>								
	DAM	GDAM	RTM	TAM	GTAM	HPDAM	REC	ESCERTS
Jan	0.12			645.60	45.08		94.52	
Feb				565.60	3929.41		124.22	3.70
Mar				514.79	30.79		106.31	105.87
Apr				541.69	16.55		149.03	20.00
May	1.56			447.13	41.86		92.25	15.62
Jun	0.25			590.70	41.65		122.04	64.05
Jul				375.78	14.86		100.63	
Aug	16.33		0.63	1038.76	26.59		80.78	98.42

Annexure-II

Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV	Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV
09/14/2023	19:00	10	-	-	-	09/17/2023	00:00	-	50	-	-
09/14/2023	19:15	10	-	-	-	09/17/2023	00:15	-	50	-	-
09/14/2023	19:30	10	-	-	-	09/17/2023	00:30	-	50	-	-
09/14/2023	19:45	10	-	-	-	09/17/2023	00:45	-	50	-	-
09/14/2023	20:00	10	-	-	-	09/17/2023	01:00	-	50	-	-
09/14/2023	20:15	10	-	-	-	09/17/2023	01:15	-	50	-	-
09/14/2023	20:30	10	-	-	-	09/17/2023	01:30	-	50	-	-
09/14/2023	20:45	10	-	-	-	09/17/2023	01:45	-	50	-	-
09/14/2023	21:00	25	-	-	-	09/17/2023	02:00	-	75	-	-
09/14/2023	21:15	25	-	-	-	09/17/2023	02:15	-	75	-	-
09/14/2023	21:30	25	-	-	-	09/17/2023	02:30	-	75	-	-
09/14/2023	21:45	25	-	-	-	09/17/2023	02:45	-	75	-	-
09/14/2023	22:00	45	-	-	-	09/17/2023	03:00	-	75	-	-
09/14/2023	22:15	45	-	-	-	09/17/2023	03:15	-	75	-	-
09/14/2023	22:30	45	-	-	-	09/17/2023	03:30	-	75	-	-
09/14/2023	22:45	45	-	-	-	09/17/2023	03:45	-	75	-	-
09/14/2023	23:00	45	-	-	-	09/17/2023	04:00	-	75	-	-
09/14/2023	23:15	45	-	-	-	09/17/2023	04:15	-	75	-	-
09/14/2023	23:30	45	-	-	-	09/17/2023	04:30	-	75	-	-
09/14/2023	23:45	45	-	-	-	09/17/2023	04:45	-	75	-	-
09/15/2023	00:00	10	-	-	-	09/17/2023	05:00	-	50	-	-
09/15/2023	00:15	10	-	-	-	09/17/2023	05:15	-	50	-	-
09/15/2023	00:30	10	-	-	-	09/17/2023	05:30	-	50	-	-
09/15/2023	00:45	10	-	-	-	09/17/2023	05:45	-	50	-	-
09/15/2023	01:00	10	-	-	-	09/17/2023	06:00	-	50	-	-
09/15/2023	01:15	10	-	-	-	09/17/2023	06:15	-	50	-	-
09/15/2023	01:30	10	-	-	-	09/17/2023	06:30	-	50	-	-
09/15/2023	01:45	10	-	-	-	09/17/2023	06:45	-	50	-	-
09/15/2023	02:00	10	-	-	-	09/17/2023	07:00	-	50	-	-

Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV	Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV
09/15/2023	02:15	10	-	-	-	09/17/2023	07:15	-	50	-	-
09/15/2023	02:30	10	-	-	-	09/17/2023	07:30	-	50	-	-
09/15/2023	02:45	10	-	-	-	09/17/2023	07:45	-	50	-	-
09/15/2023	03:00	10	-	-	-	09/17/2023	08:00	-	75	-	-
09/15/2023	03:15	10	-	-	-	09/17/2023	08:15	-	75	-	-
09/15/2023	03:30	10	-	-	-	09/17/2023	08:30	-	75	-	-
09/15/2023	03:45	10	-	-	-	09/17/2023	08:45	-	75	-	-
09/15/2023	04:00	10	-	-	-	09/17/2023	09:00	-	75	-	-
09/15/2023	04:15	10	-	-	-	09/17/2023	09:15	-	75	-	-
09/15/2023	04:30	10	-	-	-	09/17/2023	09:30	-	75	-	-
09/15/2023	04:45	10	-	-	-	09/17/2023	09:45	-	75	-	-
09/15/2023	05:00	20	-	-	-	09/17/2023	10:00	-	75	-	-
09/15/2023	05:15	20	-	-	-	09/17/2023	10:15	-	75	-	-
09/15/2023	05:30	20	-	-	-	09/17/2023	10:30	-	75	-	-
09/15/2023	05:45	20	-	-	-	09/17/2023	10:45	-	75	-	-
09/15/2023	06:00	20	-	-	-	09/17/2023	11:00	-	75	-	-
09/15/2023	06:15	20	-	-	-	09/17/2023	11:15	-	75	-	-
09/15/2023	06:30	20	-	-	-	09/17/2023	11:30	-	75	-	-
09/15/2023	06:45	20	-	-	-	09/17/2023	11:45	-	75	-	-
09/15/2023	07:00	20	-	-	-	09/17/2023	12:00	-	75	-	-
09/15/2023	07:15	20	-	-	-	09/17/2023	12:15	-	75	-	-
09/15/2023	07:30	20	-	-	-	09/17/2023	12:30	-	75	-	-
09/15/2023	07:45	20	-	-	-	09/17/2023	12:45	-	75	-	-
09/15/2023	08:00	20	-	-	-	09/17/2023	13:00	-	75	-	-
09/15/2023	08:15	20	-	-	-	09/17/2023	13:15	-	75	-	-
09/15/2023	08:30	20	-	-	-	09/17/2023	13:30	-	75	-	-
09/15/2023	08:45	20	-	-	-	09/17/2023	13:45	-	75	-	-
09/15/2023	09:00	20	-	-	-	09/17/2023	14:00	-	75	-	-
09/15/2023	09:15	20	-	-	-	09/17/2023	14:15	-	75	-	-
09/15/2023	09:30	20	-	-	-	09/17/2023	14:30	-	75	-	-
09/15/2023	09:45	20	-	-	-	09/17/2023	14:45	-	75	-	-

Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV	Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV
09/15/2023	10:00	10	-	-	-	09/17/2023	15:00	-	75	-	-
09/15/2023	10:15	10	-	-	-	09/17/2023	15:15	-	75	-	-
09/15/2023	10:30	10	-	-	-	09/17/2023	15:30	-	75	-	-
09/15/2023	10:45	10	-	-	-	09/17/2023	15:45	-	75	-	-
09/15/2023	11:00	10	-	-	-	09/17/2023	16:00	-	50	-	-
09/15/2023	11:15	10	-	-	-	09/17/2023	16:15	-	50	-	-
09/15/2023	11:30	10	-	-	-	09/17/2023	16:30	-	50	-	-
09/15/2023	11:45	10	-	-	-	09/17/2023	16:45	-	50	-	-
09/15/2023	12:00	10	-	-	-	09/17/2023	17:00	-	50	-	-
09/15/2023	12:15	10	-	-	-	09/17/2023	17:15	-	50	-	-
09/15/2023	12:30	10	-	-	-	09/17/2023	17:30	-	50	-	-
09/15/2023	12:45	10	-	-	-	09/17/2023	17:45	-	50	-	-
09/15/2023	13:00	10	-	-	-	09/17/2023	18:00	-	50	-	-
09/15/2023	13:15	10	-	-	-	09/17/2023	18:15	-	50	-	-
09/15/2023	13:30	10	-	-	-	09/17/2023	18:30	-	50	-	-
09/15/2023	13:45	10	-	-	-	09/17/2023	18:45	-	50	-	-
09/15/2023	14:00	10	-	-	-	09/17/2023	19:00	-	50	-	-
09/15/2023	14:15	10	-	-	-	09/17/2023	19:15	-	50	-	-
09/15/2023	14:30	10	-	-	-	09/17/2023	19:30	-	50	-	-
09/15/2023	14:45	10	-	-	-	09/17/2023	19:45	-	50	-	-
09/15/2023	15:00	20	-	-	-	09/17/2023	20:00	-	50	-	-
09/15/2023	15:15	20	-	-	-	09/17/2023	20:15	-	50	-	-
09/15/2023	15:30	20	-	-	-	09/17/2023	20:30	-	50	-	-
09/15/2023	15:45	20	-	-	-	09/17/2023	20:45	-	50	-	-
09/15/2023	16:00	20	-	-	-	09/17/2023	21:00	-	50	-	-
09/15/2023	16:15	20	-	-	-	09/17/2023	21:15	-	50	-	-
09/15/2023	16:30	20	-	-	-	09/17/2023	21:30	-	50	-	-
09/15/2023	16:45	20	-	-	-	09/17/2023	21:45	-	50	-	-
09/15/2023	17:00	20	-	-	-	09/17/2023	22:00	-	50	-	-
09/15/2023	17:15	20	-	-	-	09/17/2023	22:15	-	50	-	-
09/15/2023	17:30	20	-	-	-	09/17/2023	22:30	-	50	-	-

Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV	Date	Time_Block	PXIL_Demand	PXIL_Supply	MCP	MCV
09/15/2023	17:45	20	-	-	-	09/17/2023	22:45	-	50	-	-
09/15/2023	18:00	20	-	-	-	09/17/2023	23:00	-	50	-	-
09/15/2023	18:15	20	-	-	-	09/17/2023	23:15	-	50	-	-
09/15/2023	18:30	20	-	-	-	09/17/2023	23:30	-	50	-	-
09/15/2023	18:45	20	-	-	-	09/17/2023	23:45	-	50	-	-
09/15/2023	19:00	20	-	-	-						
09/15/2023	19:15	20	-	-	-						
09/15/2023	19:30	20	-	-	-						
09/15/2023	19:45	20	-	-	-						
09/15/2023	20:00	20	-	-	-						
09/15/2023	20:15	20	-	-	-						
09/15/2023	20:30	20	-	-	-						
09/15/2023	20:45	20	-	-	-						
09/15/2023	21:00	20	-	-	-						
09/15/2023	21:15	20	-	-	-						
09/15/2023	21:30	20	-	-	-						
09/15/2023	21:45	20	-	-	-						
09/15/2023	22:00	20	-	-	-						
09/15/2023	22:15	20	-	-	-						
09/15/2023	22:30	20	-	-	-						
09/15/2023	22:45	20	-	-	-						
09/15/2023	23:00	20	-	-	-						
09/15/2023	23:15	20	-	-	-						
09/15/2023	23:30	20	-	-	-						
09/15/2023	23:45	20	-	-	-						