

To whom it may concern,

Thank you for the opportunity to respond to the consultation on the draft Power Market Regulations 2020. This response is submitted on behalf of AFRY Management Consulting, part of the AFRY consulting engineering company which is headquartered in Sweden.

Our submission is brief, focusing on a small number of issues.

I also attach a summary document summarising our own vision and some recommendations for the development of the Indian market. Our views have benefited from discussion with a number of stakeholders and the underlying paper was part of a project which was sponsored by IEX, but the views are our own beliefs and are not those of IEX or any other party.

I note that there is a public hearing on Friday 7th August: is there a way to connect remotely? Would AFRY have the opportunity to present the points below?

The successful development of the Indian power market over the past decade is a credit to the stewardship of the CERC. Faced with rapidly growing demand, the power system has delivered private investment, improved reliability, synchronous connection of the transmission systems, and a country-wide system of zonal pricing, with functioning spot markets trading from several days ahead to real time. The next decade will be equally transformational, as India builds a power system dominated by weather-dependent renewables and the need for flexibility. This future power system will place more emphasis on trading and less on long term contracts to deliver investment and efficient dispatch.

In this context, we expect that flexibility will come from new types of market participants, using decentralised resources and digital tools. We believe that the system will necessarily move away from central pricing and dispatch towards incentive-based decision-making. This in turn must be built on transparency of information and clarity of roles and responsibilities, most importantly that of balance responsibility. At the heart of such a system is the use of cost-reflective balancing energy (Deviation) prices, which will ultimately give all market participants incentives to support system balancing rather than placing a growing burden on the NLDC to manage small-scale resources. For market participants to manage their positions, it is important to have access to liquid, transparent markets; over a range of timeframes from forwards (supporting investment) to real-time (presently used for the security-constrained economic dispatch). This will include continuous intraday markets, to

permit adjustment at any time, and new bid structures and new market timeframes to support new types of market participant must be developed. Innovation by the market platforms is needed to bring about this future.

We have chosen to comment on the following aspects of the draft Power Market Regulations:

- Development of new markets and products
- Market coupling
- Optimal use of the transmission network
- Common clearing and settlement
- Scheduling and delivery (restrictions on trading by generators)

Development of new markets and products

The draft Regulation enables a number of new markets:

- Power exchanges are permitted to list forward contracts over 11 days in advance;
- Introduction of transparent over-the-counter platforms.
- Encouragement of new bid types in day-ahead and real time markets.

The regulations also clarify that the objectives of Power Exchanges include “(1) To design electricity contracts and facilitate transactions of such contracts”

We welcome the intent: the diversity of market players and their needs will increase, as the power system develops new decentralised sources of generation and flexibility.

However, we believe that the effect of market coupling (see below) will hamper the ability of the exchanges collectively to innovate, and will limit their incentives to do so. Instead of competing on their ability to define products which attract market participants, the exchanges must pool liquidity. Thus, exchanges cannot benefit from their own innovations but must instead share ideas with other exchanges.

We would recommend an environment in which exchanges and other market places (including brokers and OTC marketplaces) actively compete to meet the needs of market participants, rather than operating common systems.

Market Coupling

The draft Regulation proposes market coupling between exchanges for both day-ahead and real-time (hour ahead) markets, which echoes the experience of Europe. In this future, the Indian power exchanges will collate orders, but the algorithm for price discovery and ultimately the settlement will be conducted centrally. This will deliver a uniform price in each zone both at day-ahead and also at real-time (hour ahead) stages.

However, we note that in a multi-sequence market, the energy price for any zone and any delivery period will change as new information is known. Day ahead prices will differ from intraday and hour-ahead prices and should be free to do so: day-ahead in itself is not unique. Thus, uniform pricing in the day-ahead timeframe is desirable but not – in itself – necessary. Our experience in Europe is that the coupling between exchanges (Single Day-Ahead Coupling) has stifled innovation and our concern is that the coupling will not lead to optimal outcomes over time.

We believe that the emphasis in India should be to enhance the Deviation pricing arrangements, and to maximise freedom of market participants to trade between multiple marketplaces to perform price discovery and deliver efficient dispatch. In our view, the CERC should seek to maximise price transparency to allow prices to converge rather than enforcing price convergence through coupling.

Optimal use of the transmission network

The network capacity is allocated between marketplaces on a first-come-first-served basis. Thus, day-ahead takes precedence over intraday and the real time (hour-ahead) market. The effect of this will be to limit liquidity in the intraday market, which will have growing importance.

We would recommend a network capacity allocation methodology in which capacity is allocated to the marketplace and timeframe where it has most value, rather than first-come-first-served. Any existing corridor capacity rights may still be honoured, either physically or financially.

Common clearing and settlement

The draft Regulation includes provision for a common clearing and settlement function. This goes further than the European arrangements in which each exchange settles its own orders. The history of exchanges in Europe is that the (presumed) natural synergy between exchange and system operation has diminished, and greater synergies have been found between operators of spot markets and futures and forwards markets (for example EEX and EPEX Spot). As forward trading grows in importance, the potential for cross-commodity clearing

will grow. As market actors rely more on traded forward contracts and less on PPAs, collateral will become a topical issue, and the ability of the exchanges to compete in their clearing services could be an important differentiator.

Scheduling and delivery (restrictions on trading by generators)

The draft Regulation, and other documentation (e.g. guidelines for the Real Time (hour-ahead) Market) places restrictions that certain trades must be '*physically delivered, without netting*'. Although these terms are not defined, we infer them to mean that when a generator sells energy in the OTC, term-ahead or day-ahead market; then it may not subsequently trade out its position except in the case of Force Majeure: i.e. that generators are not free to buy and sell electricity in the spot markets.

If our understanding is correct, then this is a material barrier to trade, to liquidity and to effective price formation and efficient dispatch. The nature of an electricity market – especially in the face of renewable generation – is that expectations change as real time approaches. The buying and selling actions of generators in near-term markets are central to reaching efficient market outcomes. Only generators can know their true costs and parameters for dispatch, and if they are continually seeking opportunities to buy instead of producing to meet their contractual commitments, then market efficiency will result. If trades conducted several days in advance force a generator to produce energy irrespective of changes in market conditions, then it is clear that this will result in inefficient dispatch, an unwillingness of generators to trade ahead of time, or both. None of these is a desirable outcome and we would suggest that this should be reconsidered.

Closing words

The development of the Indian power sector is a global success story. We support and welcome the intentions of the CERC in preparing the market for the 2020s and the renewable power revolution. We offer our recommendations in a positive spirit, based on our own experience in Europe where the coupling between exchanges has not yet led to a vibrant intraday market. We look forward to the opportunity to discuss our ideas with the CERC in future.

About AFRY

AFRY is an international engineering, design and advisory company. We support our clients to progress in sustainability and digitalisation. We are 17,000 devoted experts within the fields of infrastructure, industry and energy, operating across the world to create sustainable solutions for future generations. AFRY has three offices in India, engaged in projects relating to build of renewable and pumped storage generation.

AFRY Management Consulting provides leading-edge consulting and advisory services covering the whole value chain in energy, forest and bio-based industries. Our energy practice is the leading provider of strategic, commercial, regulatory and policy advice to European energy markets. Our energy team of over 250 specialists offers unparalleled expertise in the rapidly changing energy markets across Europe, the Middle East, Asia, Africa and the Americas.

Thank you for consideration of the above points.

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ÅF and Pöyry have come together as AFRY.
We don't care much about making history. We care about making future.