ESCert Trading

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✓ Introduction to Power Exchange

✓ ESCert Market- Key Features

✓ Trading in ESCert Market

Exchange: A Competitive 'Market'

- ✓ Transparent online market platform for **delivery based trading**

- ✓ Exchanges provide a efficient, **competitive platform** for price discovery and trading – Stock / Commodity/Energy

- ✓ Now, worldwide Power Exchanges are operating in almost 40 countries.

- ✓ Energy/Power exchanges in India started operations from 2008.

- ✓ Regulatory oversight of Central Electricity Regulatory Commission (CERC)

Company Snapshot

➢ Market Share: **98%**

➢ Average daily trade: **5500 MW**

➢ Annual Traded Volume: **40 Billion Units**

➢ High Participation: **4300+**

3800+ Industries | **47** Discoms (all) | **380+** Generators

Transparency

Competition

Liquidity
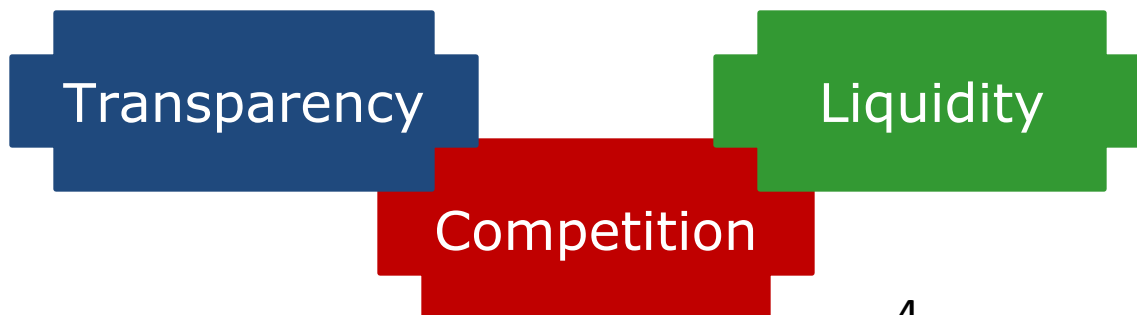
Market Share-FY 17 (All Products)
Average Daily Trade- FY17
Participation-as on 31 Mar 2017

4

IEX Market Segments
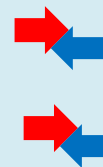
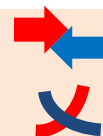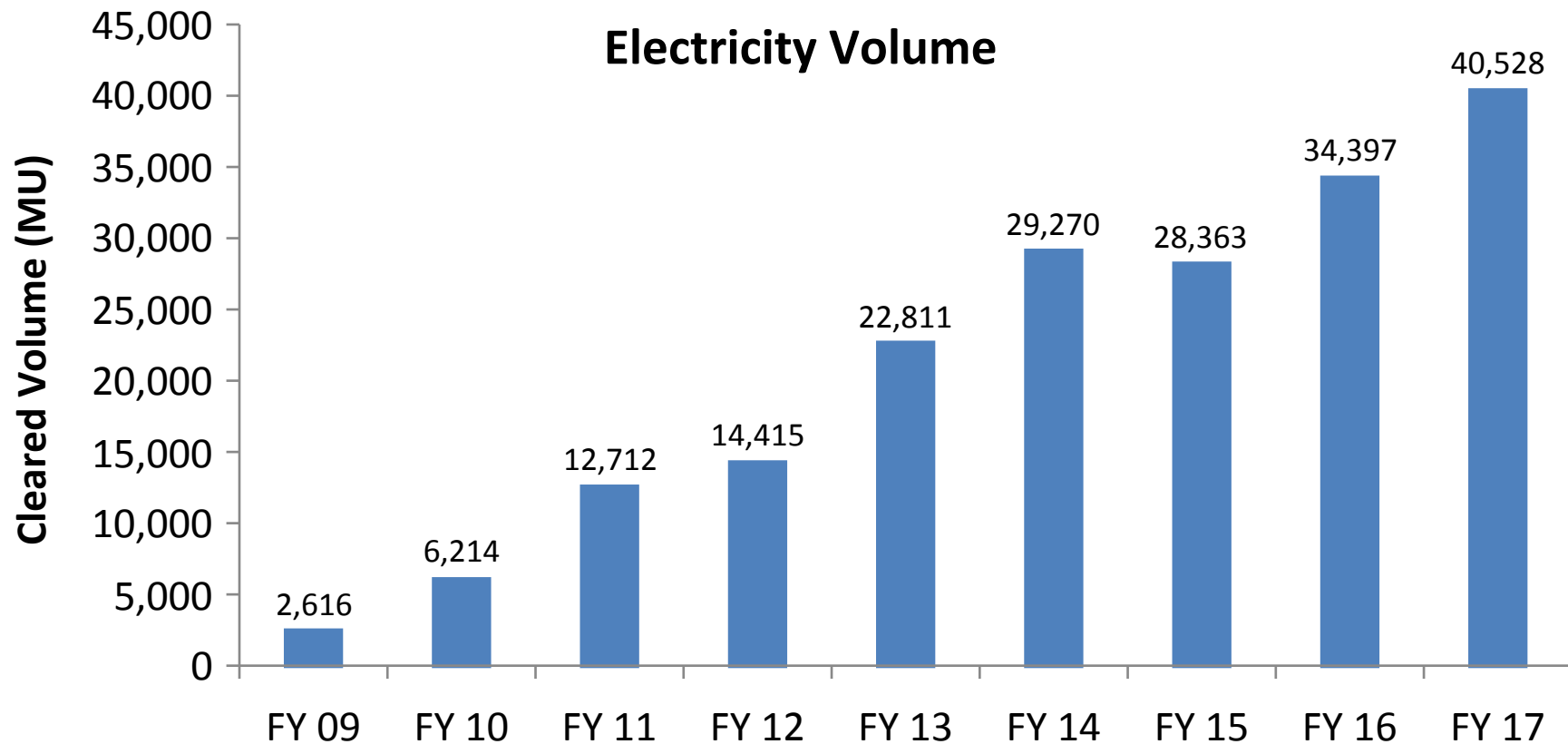|	
Day-Ahead Market since June,08	• *Delivery <u>for next day</u>* • *Price discovery: Closed , Double-sided Auction*
Intraday Market & Day-Ahead Contingency Round the clock since Jul'15	• *Intraday: For Delivery <u>within the same day</u>* • *Day Ahead Contingency: <u>Another window for next day</u>* • *Gate closure : 3 hours*
Term-Ahead Contracts since Sep,09	• *For delivery <u>up to 11 days</u>* • *Daily Contracts, Weekly Contracts*
Renewable Energy Certificates since Feb,11	• ***Green Attributes as Certificates*** • ***Sellers :*** *RE generators not under feed in tariffs* • ***Buyers:*** *Obligated entities; 1MWh equivalent to 1 REC*
Energy Saving Certificates	*All procedures and approvals are in place. Trading to start soon.*

Auction   **Continuous**

IEX Volume Growth : Strong trend line

Electricity Volume

Cleared Volume (MU)

FY	Value
FY 09	2,616
FY 10	6,214
FY 11	12,712
FY 12	14,415
FY 13	22,811
FY 14	29,270
FY 15	28,363
FY 16	34,397
FY 17	40,528

Source: IEX Data (DAM+TAM)
FY 09: from 27 Jun 08-31 Mar 09; Projected Volume of FY 2016-17

Growing Participation from Industries
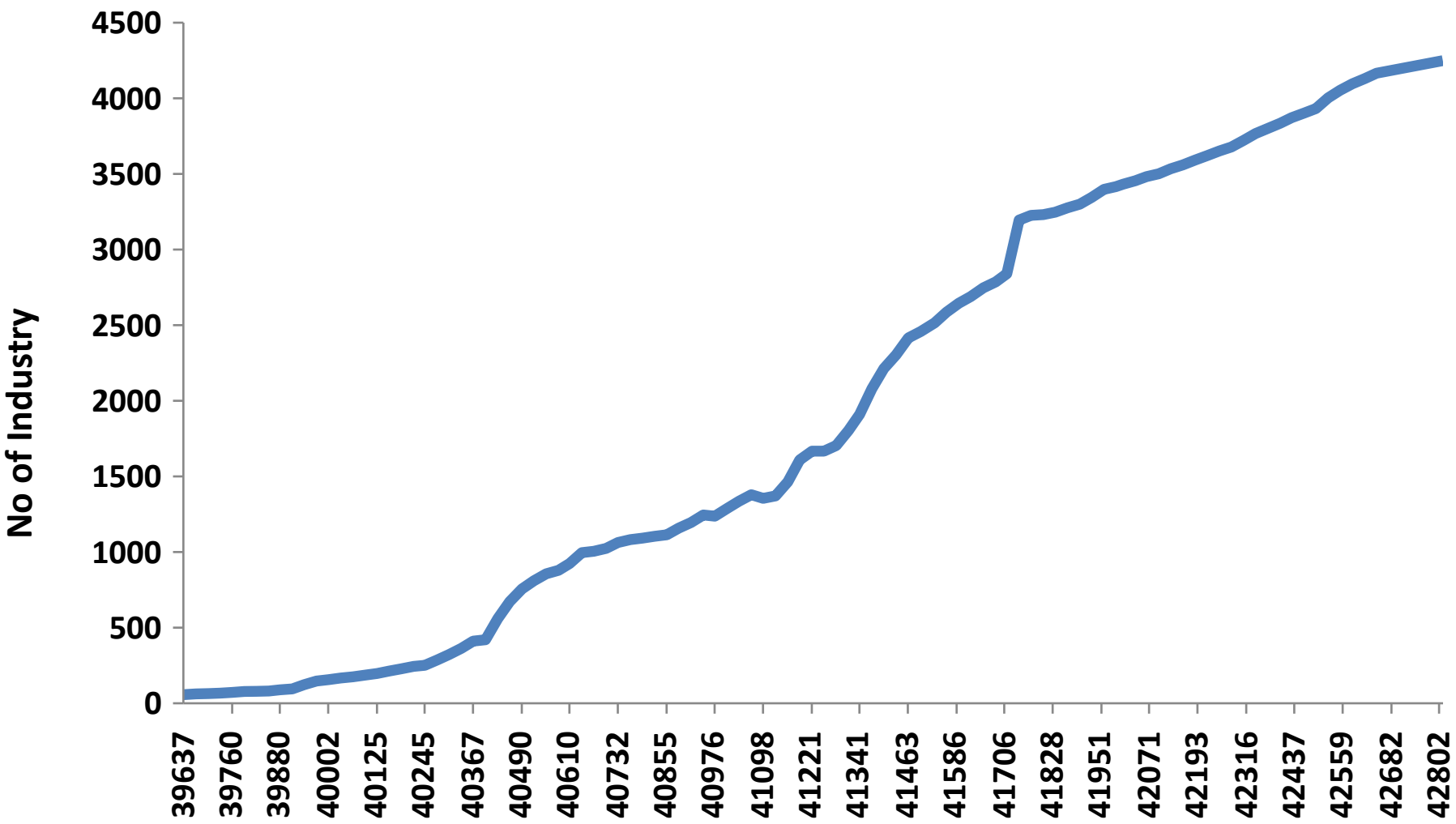
Pan India Industry Participation

Uttarakhand 104

Others, 241

Haryana, 461

Gujarat, 517

Rajasthan, 337

Punjab, 430

Karnataka, 220

Telangana, 222

Tamil Nadu, 813

Andhra Pradesh, 486
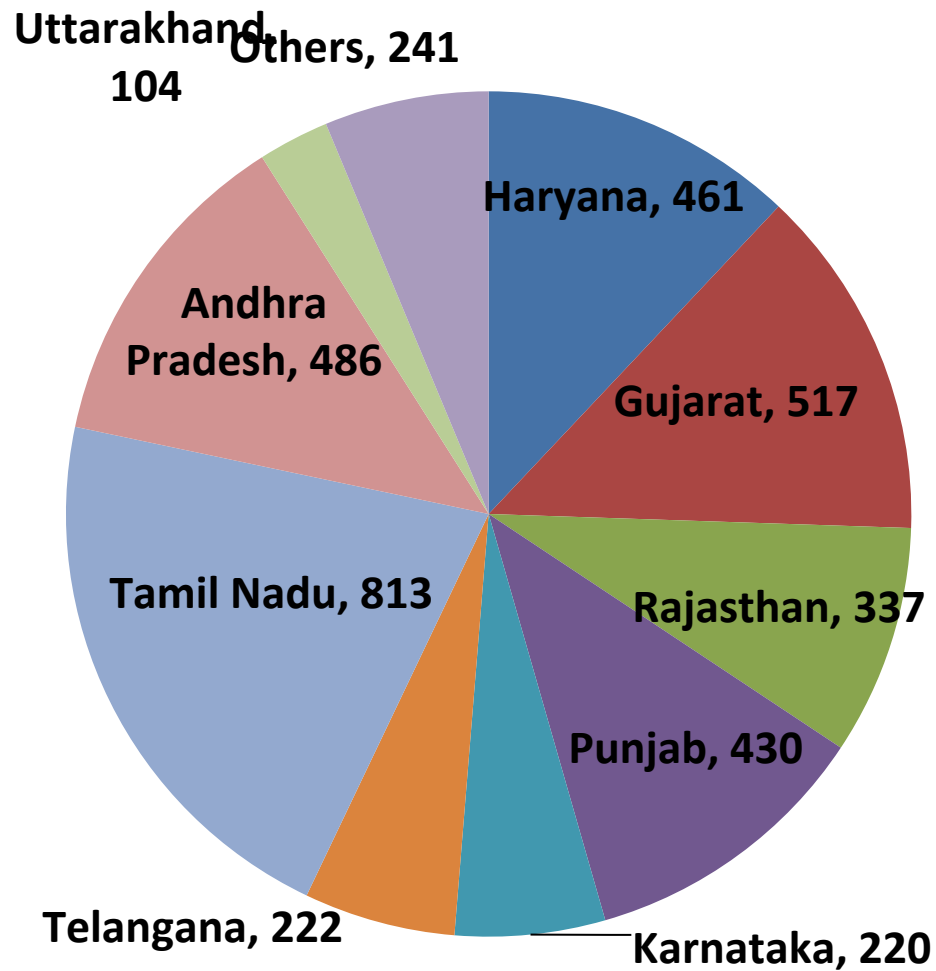
As on April'2017

Sector Wise Volume

Bar chart titled "Sector Wise Volume" showing Volume (MU) by sector:

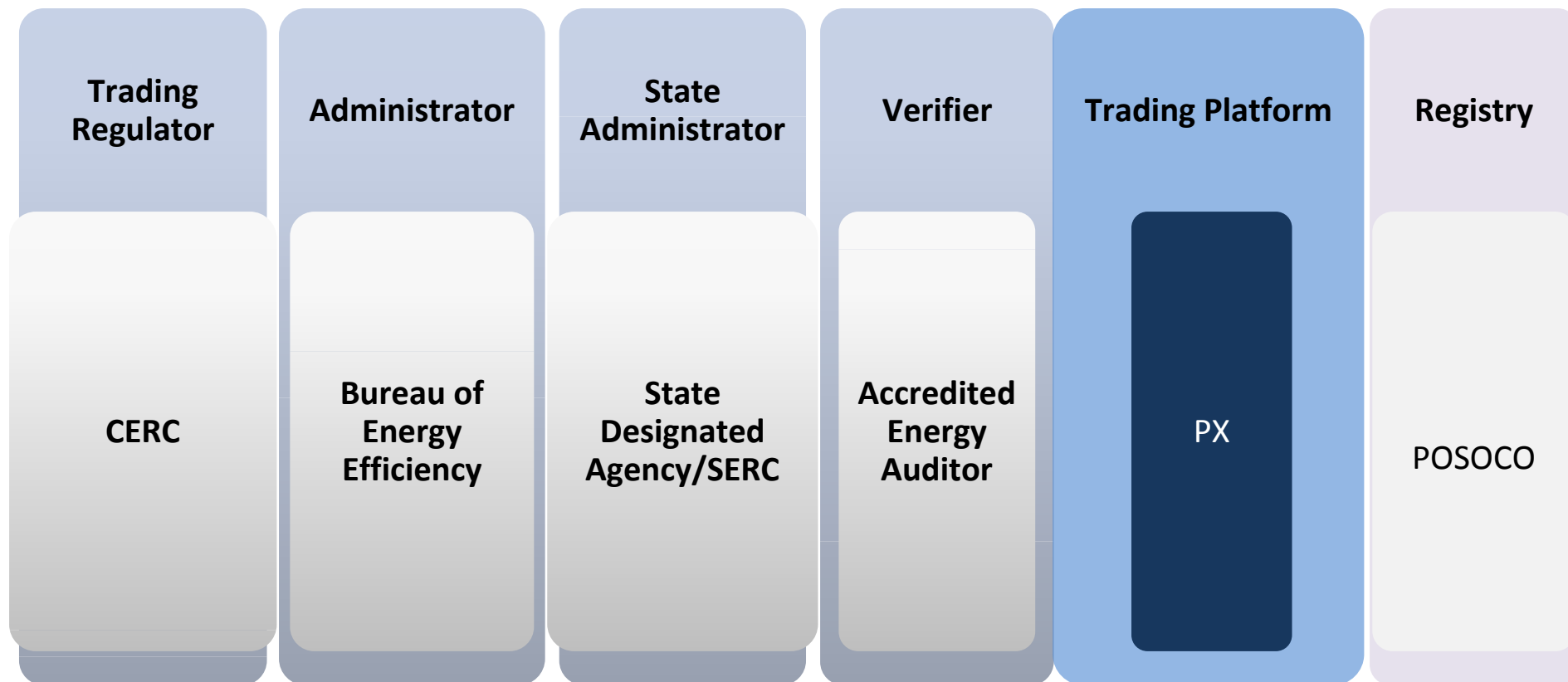| Sector	Volume (MU)
Metal	6,561
Textile	6,256
Chemical	2,568
Automobiles	1,830
Cement	1,612
Steel	661
Food	576
Glass	404
Housing & comml	202
Paper	148
Others	2,945
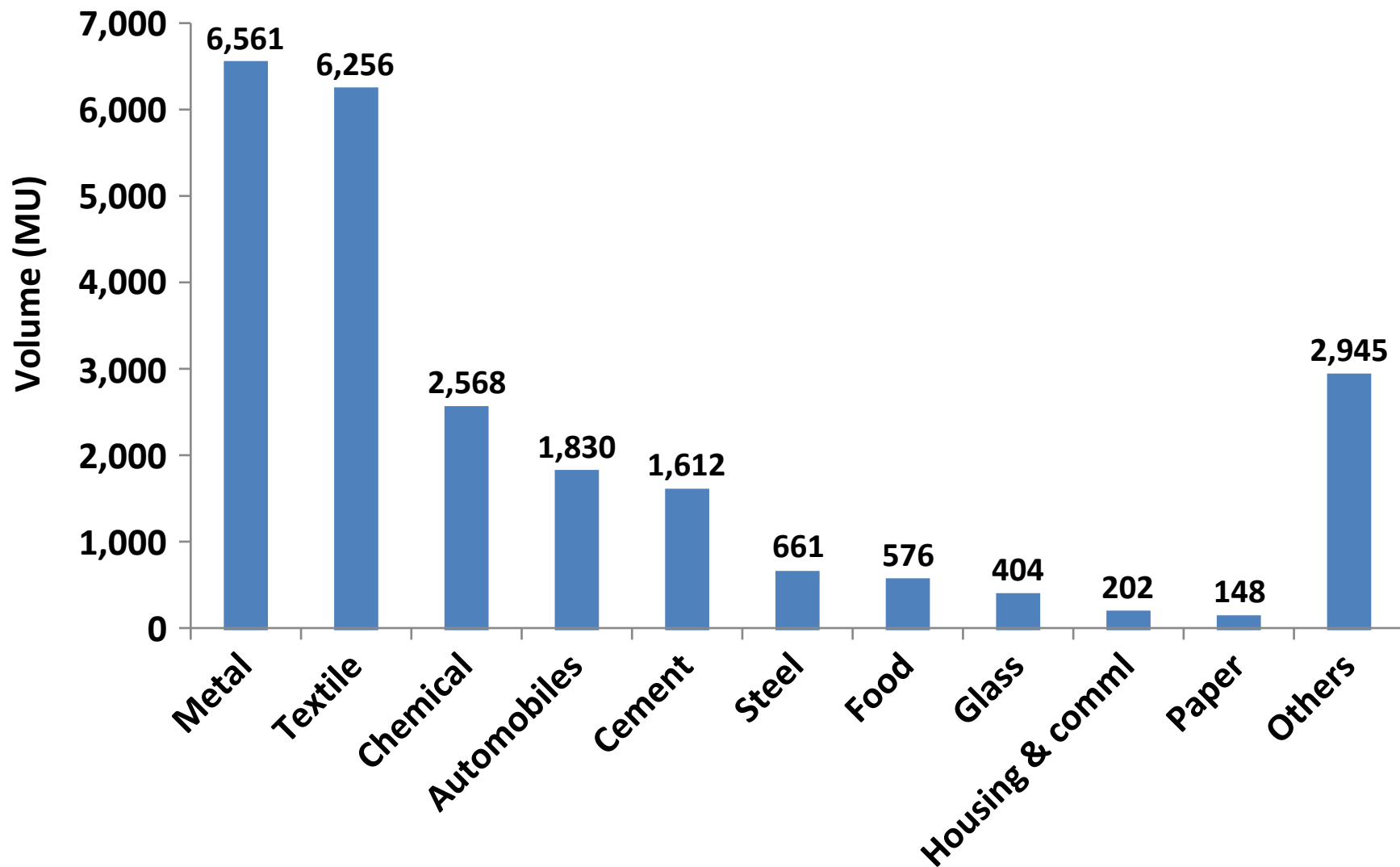
ESCert Trading

A market based mechanism to enhance cost effectiveness of improvements in energy efficiency in energy-intensive large industries and facilities, through certification of energy savings that could be traded

Chronology

- ✓ 2012 – 1st PAT Cycle

- ✓ 2015 – Close of 1st PAT Cycle

- ✓ 2016 –2nd PAT Cycle

- ✓ May, 2016- CERC regulation for Terms and condition for dealing in ESCerts

- ✓ Feb, 2017- CERC approval for procedures for transaction of ESCerts

- ✓ March, 2017- CERC order on fees and charges of ESCERTS Registry

- ✓ **May, 2017- CERC approves IEX Rules & Bye-Laws**

Stakeholders under the PAT scheme

Trading Regulator	Administrator	State Administrator	Verifier	Trading Platform	Registry
CERC	Bureau of Energy Efficiency	State Designated Agency/SERC	Accredited Energy Auditor	PX	POSOCO

Eligible Entity
Designated Consumers Registered with Registry

Salient Features of ESCert trading

Compliance	Mandatory
PAT Cycle	3 Years
Target Entities	Designated Consumers
Sellers	DCs to whom ESCerts have been Issued
Buyers	DCs who have been entitled to purchase ESCerts
Target	6.6 million toe for 1st Cycle
Mechanism	Cap and Trade
Self Retention	Not Allowed for Group Companies
Penalty	As per Energy Conservation Act, 2001 (Linked to market value of oil equivalent

Salient Features of ESCert trading

ESCerts	• 1 ESCert = 1 MTOE (Metric Tonne of Oil equivalent)
Trading Platform	• Power Exchange only
Trading Frequency	• Weekly (Tuesday)
Price Determination	• Double-sided Closed Auction with Uniform Price
Selection Principle	• Price I Pro-Rata
Banking	• Allowed for one consecutive cycle
Resale	• Not allowed
Cap & Floor Price	• No Cap & Floor Price
Redemption	• First In - First Out principle
Order Type	• Single Bid
Margin	• 100% from Buyers

Trading/Market Regulator (CERC)

Client — Member — Trade → | TRADING | BROADCAST |

| CLEARING |

Member — Trade → | DELIVERY | PAYMENT |

Power Exchange

ESCerts Registry

Clearing Banks
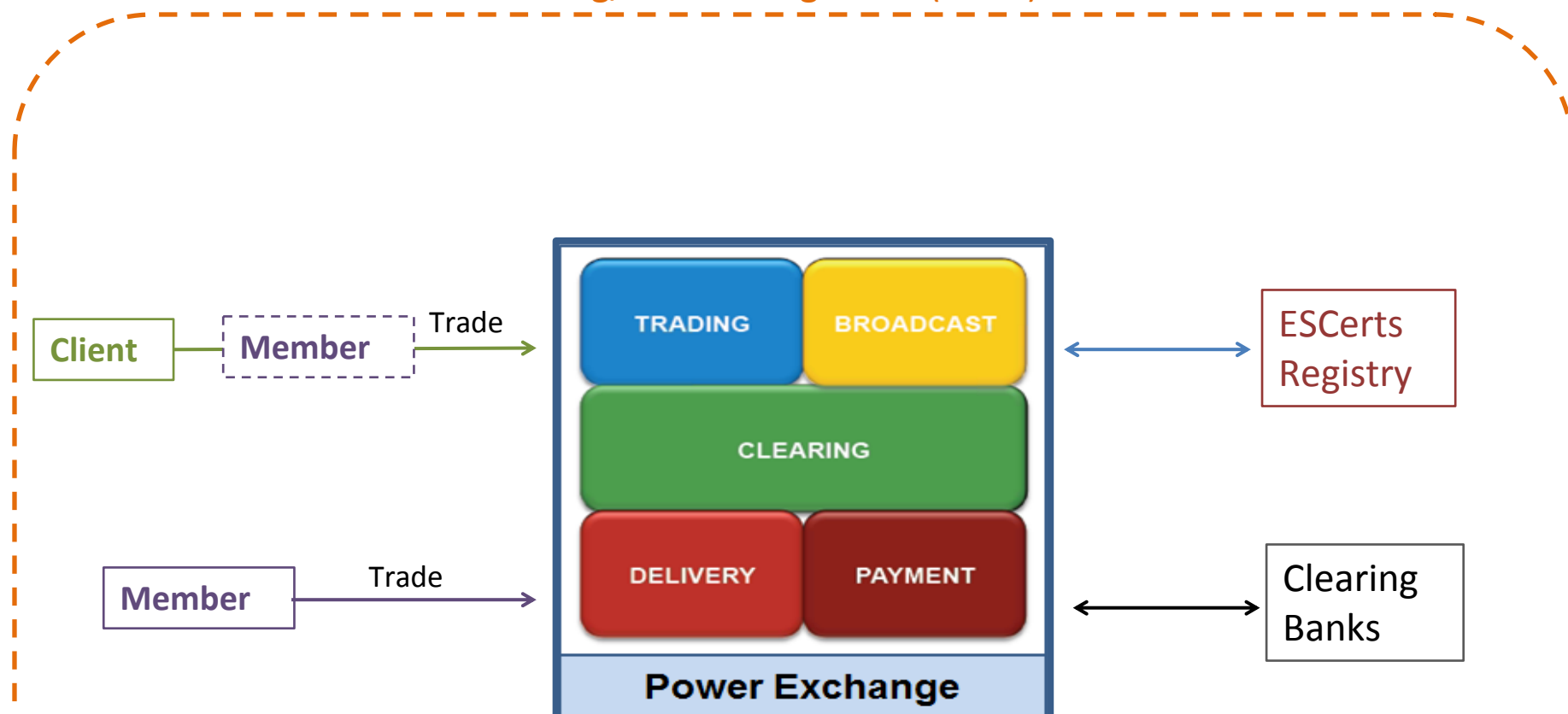
CERC APPROVED
ESCert Framework
IEX Rules & Bye-Laws: Standardized Contract Specification

Trading Timelines

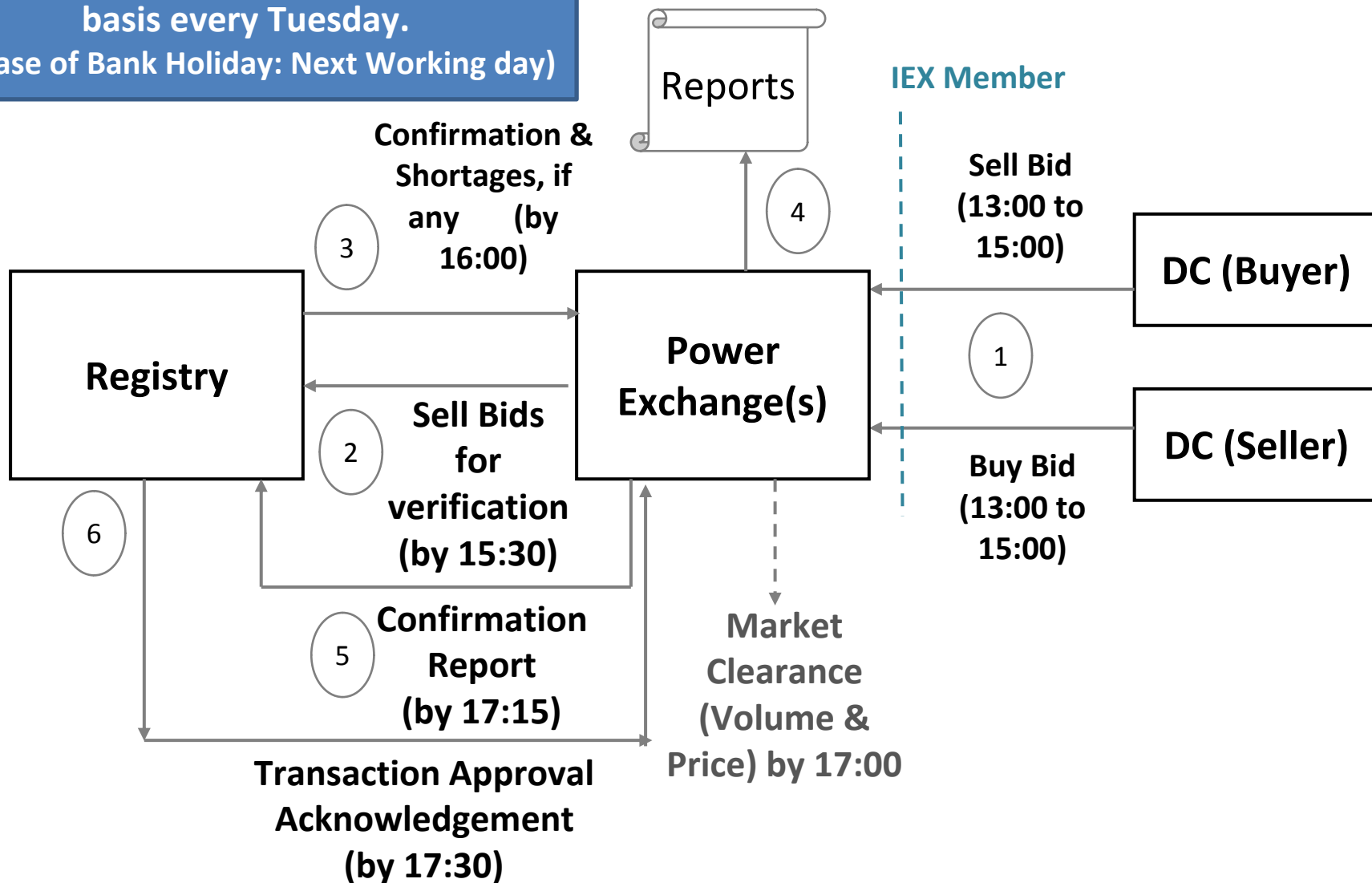| TIME on trade day	DETAILS
Pre-trade Phase:	
By 12.00	Exchange to check initial margin for Members

Process flow for ESCerts trading

Trading to be carried out on weekly basis every Tuesday.
(In case of Bank Holiday: Next Working day)

Reports

Confirmation & Shortages, if any (by 16:00)

3

Registry

Power Exchange(s)

Sell Bids for verification (by 15:30)

2

4

IEX Member

Sell Bid (13:00 to 15:00)

DC (Buyer)

1

DC (Seller)

Buy Bid (13:00 to 15:00)

6

5

Confirmation Report (by 17:15)

Market Clearance (Volume & Price) by 17:00

Transaction Approval Acknowledgement (by 17:30)

Roles & Responsibilities of PX

- ✓ Formulate Rules and Bye Laws for Transaction of ESCerts on PX

- ✓ Develop IT Platform compatible with the PAT-Net portal and D-CRM for online transaction.

- ✓ Permit transaction of ESCerts only to the Eligible Entities.

- ✓ To determine MCP and MCV based on double sided closed Auction with Uniform Pricing principle

- ✓ Send reports for Transaction confirmation, pay-in and pay-out for Executed Transaction.

- ✓ Issue Purchase Certificate to the Buyers.

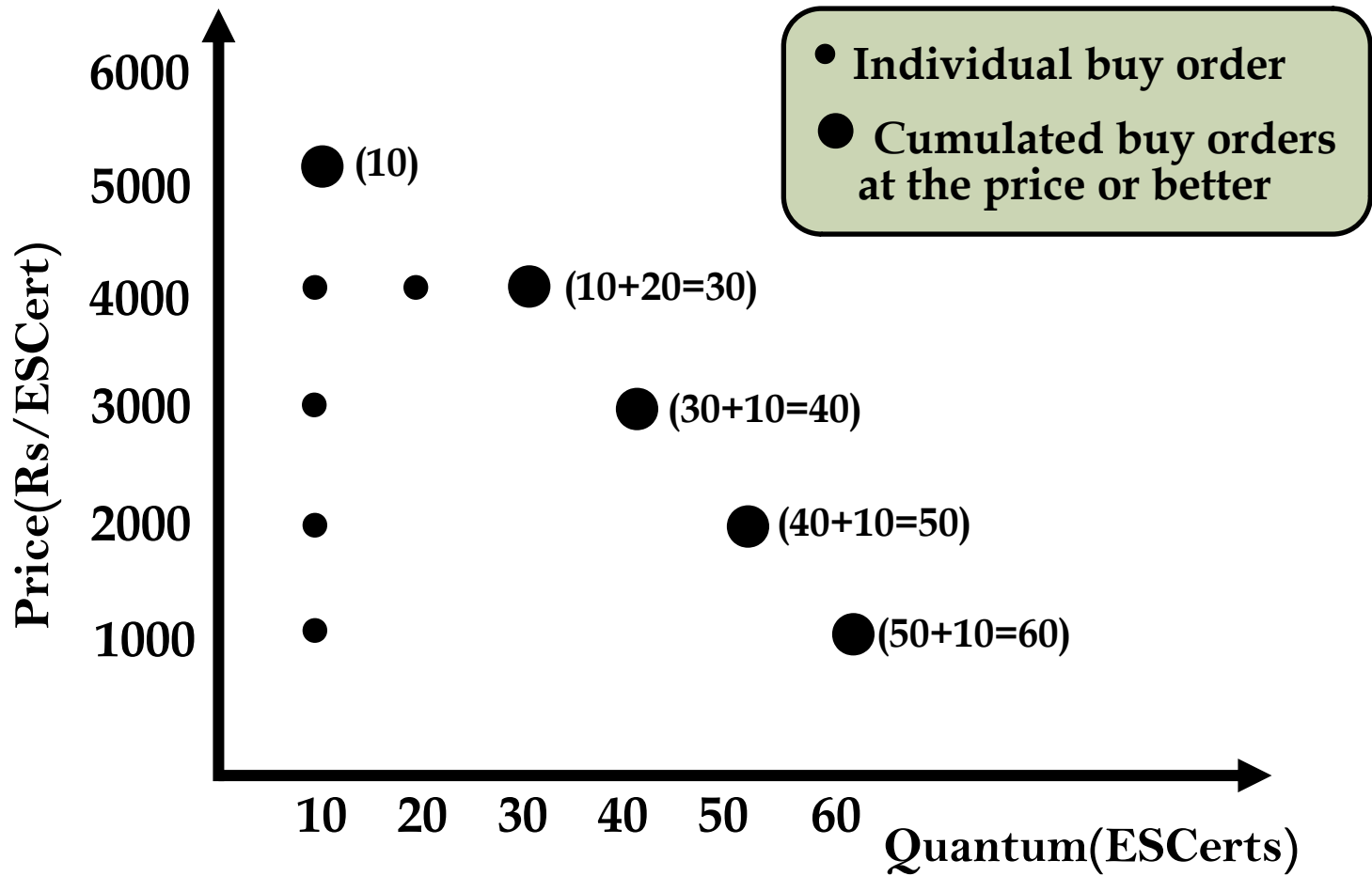- ✓ Display ESCerts demand supply curves on the website

P*

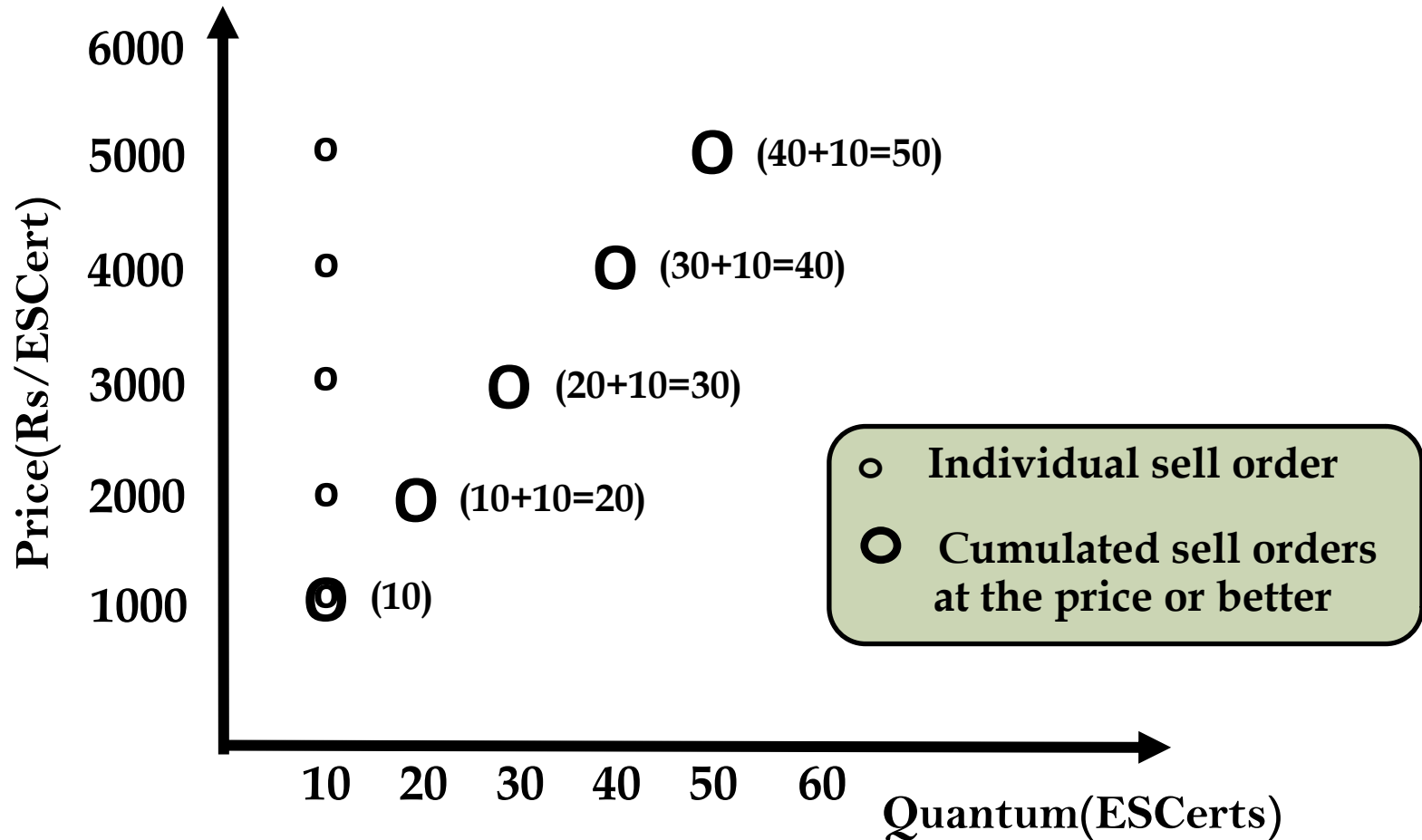The perfectly liquid, frictionless market solution
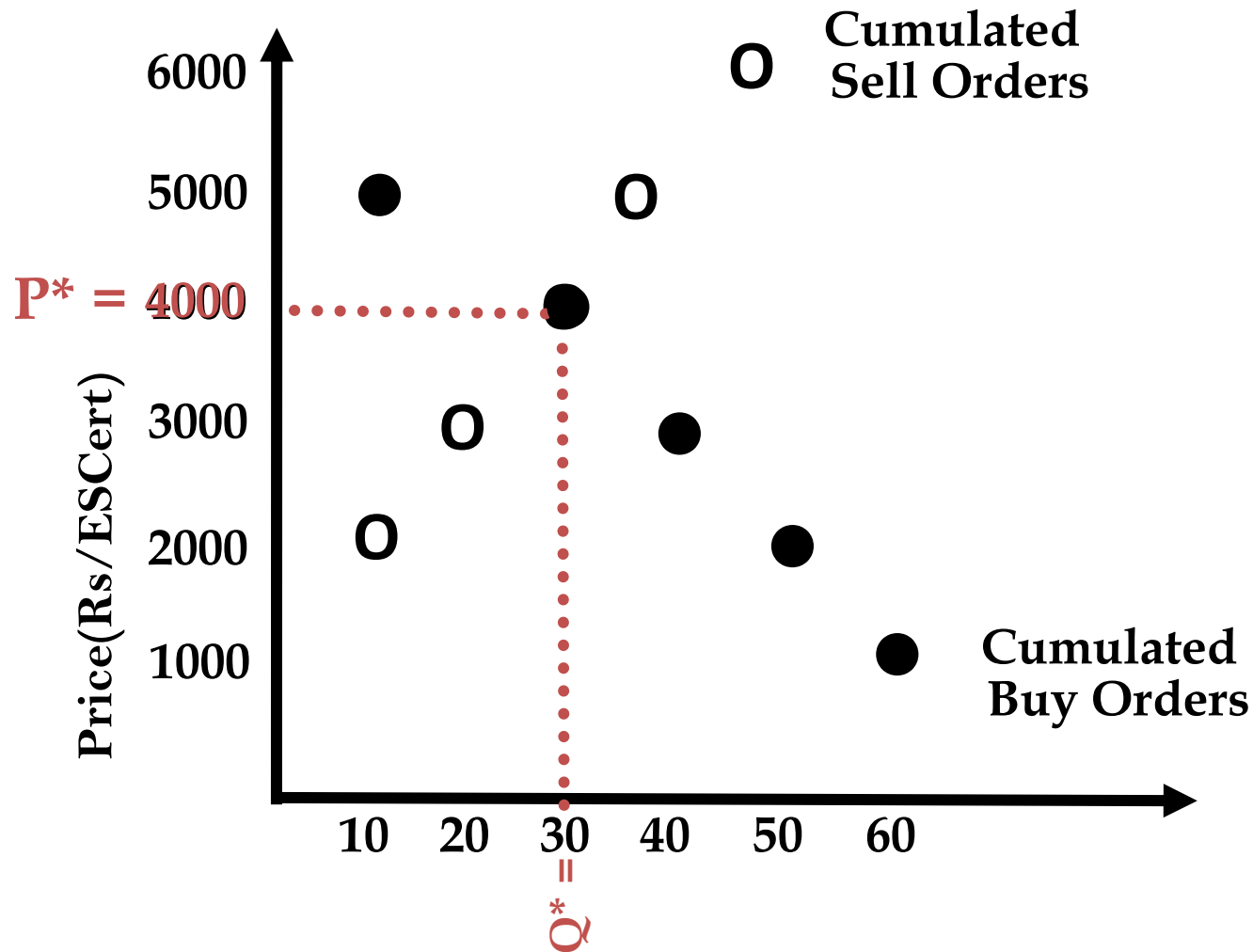
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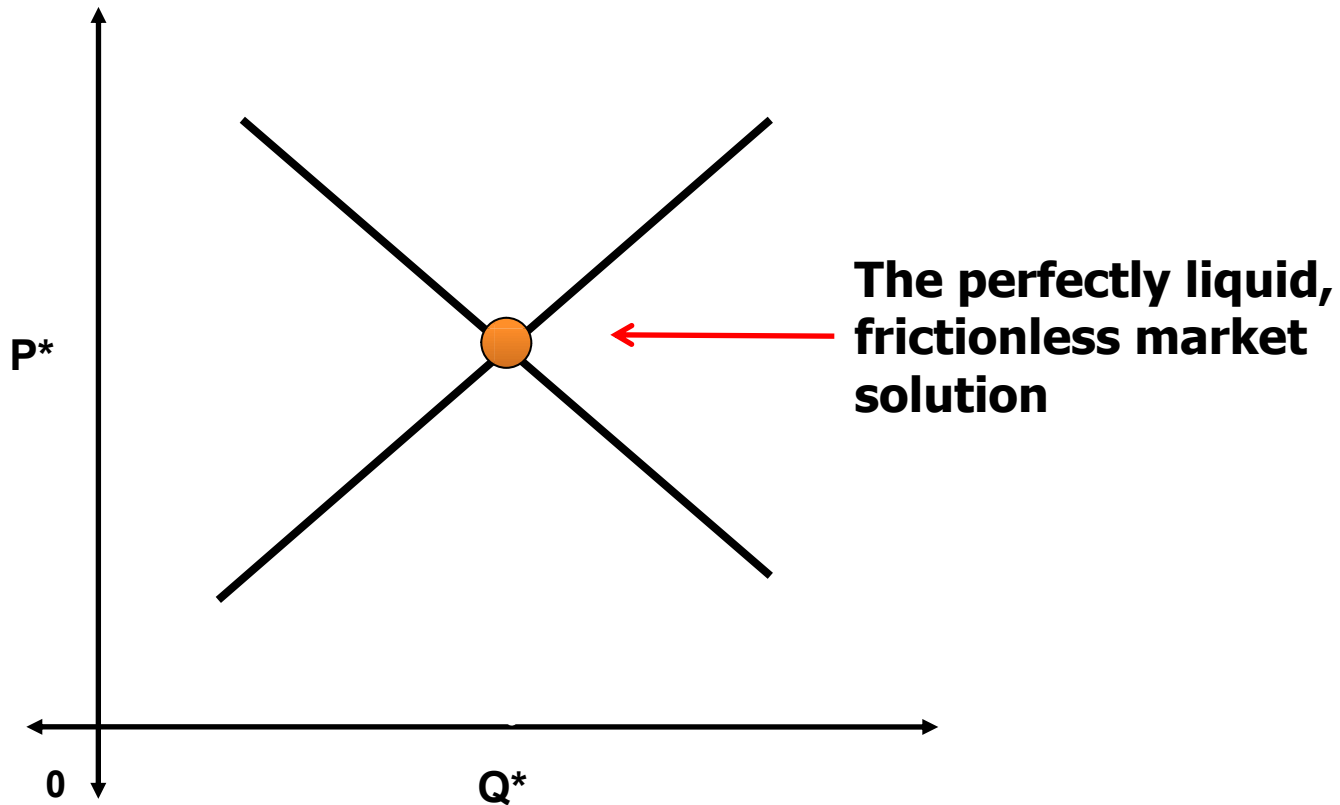
The Batching of Customer Orders
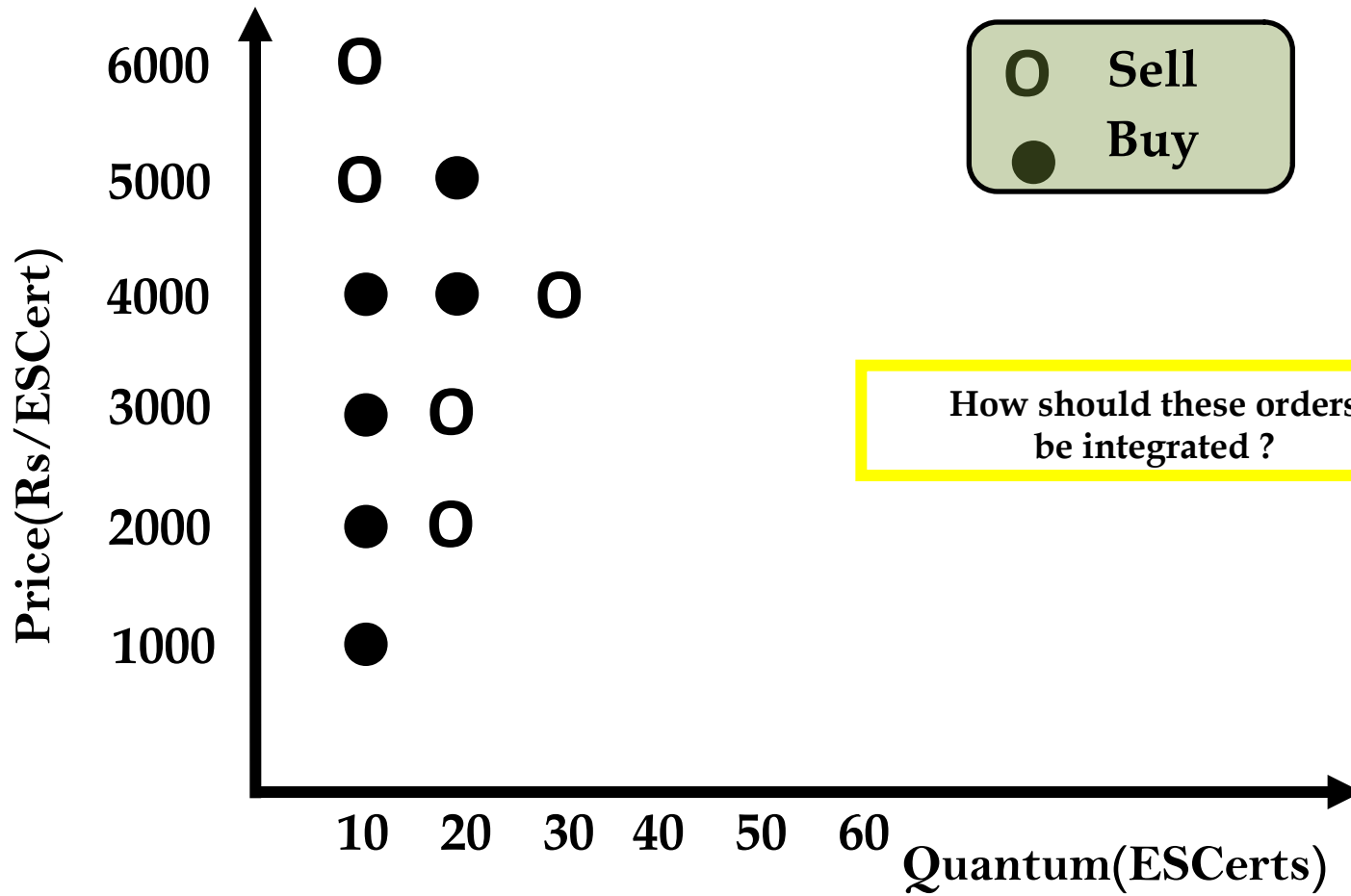
Aggregate the Buy Orders

Aggregate the Sell Orders

Match Aggregated Buy & Sell Orders
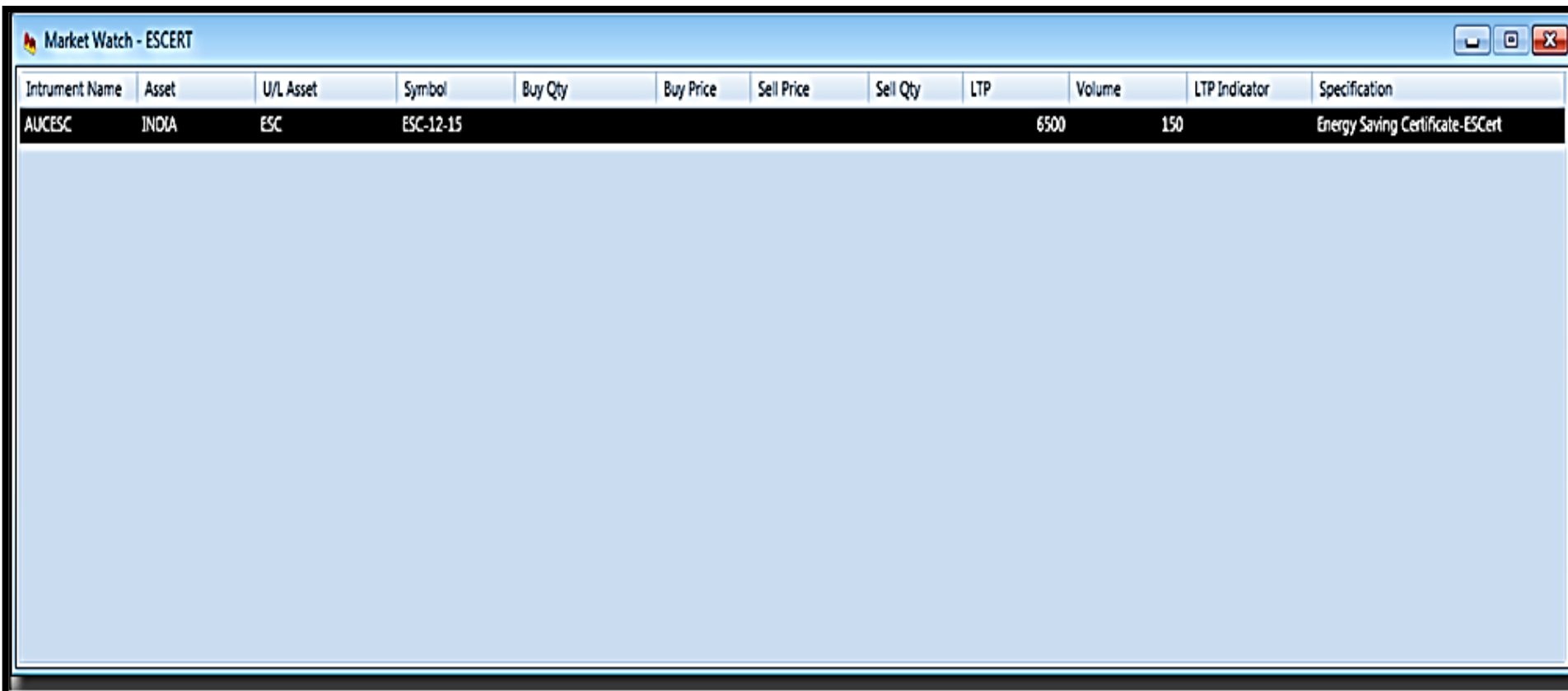
ORDER BOOK WINDOW(WITHIN TRADING HOURS)

IEX INDIAN ENERGY EXCHANGE India's No.1 Power Exchange

Order Book - [Pending]

Participant ID	Portfolio ID	Instrument Name	Symbol	Buy/Sell	Pending Quantity	Price	Status	Order No.	Disclosed...	Validity	Trigger Price	Reason	Remarks
N2DL0BYP0000	N2DL0BYP0001	AUCESC	ESC-12-15	Sell	150	5000	Pending	117052000000002		EOS			
N2DL0NDP0000	N2DL0NDP0001	AUCESC	ESC-12-15	Buy	200	6500	Pending	117052000000003		EOS			
N2DL0BRP0000	N2DL0BRP0001	AUCESC	ESC-12-15	Buy	100	6000	Pending	117052000000001		EOS			

Filter | Inst. Name : ALL, Buy/Sell : , Product : ALL, Participant ID : ALL, User ID : ALL, Portfolio ID : ALL | Buy Qty : 300 | Sell Qty : 150

MARKET WATCH WINDOW

IEX will conduct Mock Trading Session with all the members before commencing ESCert Trading

Trade @ IEX

✓Member - deals directly with Exchange

- DCs

- Electricity Traders

- Consultants/ Energy Auditors etc

✓Client - deals through Member

- DCs

IEX Membership Types

Proprietary Member

- **DCs**
  Right to trade and clear on its own account

Professional Member

- Trade and clear on behalf of its Clients
- NO CREDIT /FINANCING

Trader Member
(CERC Trading License)

- Trade and clear on behalf of its Clients
- CREDIT /FINANCING

DCs (Clients)
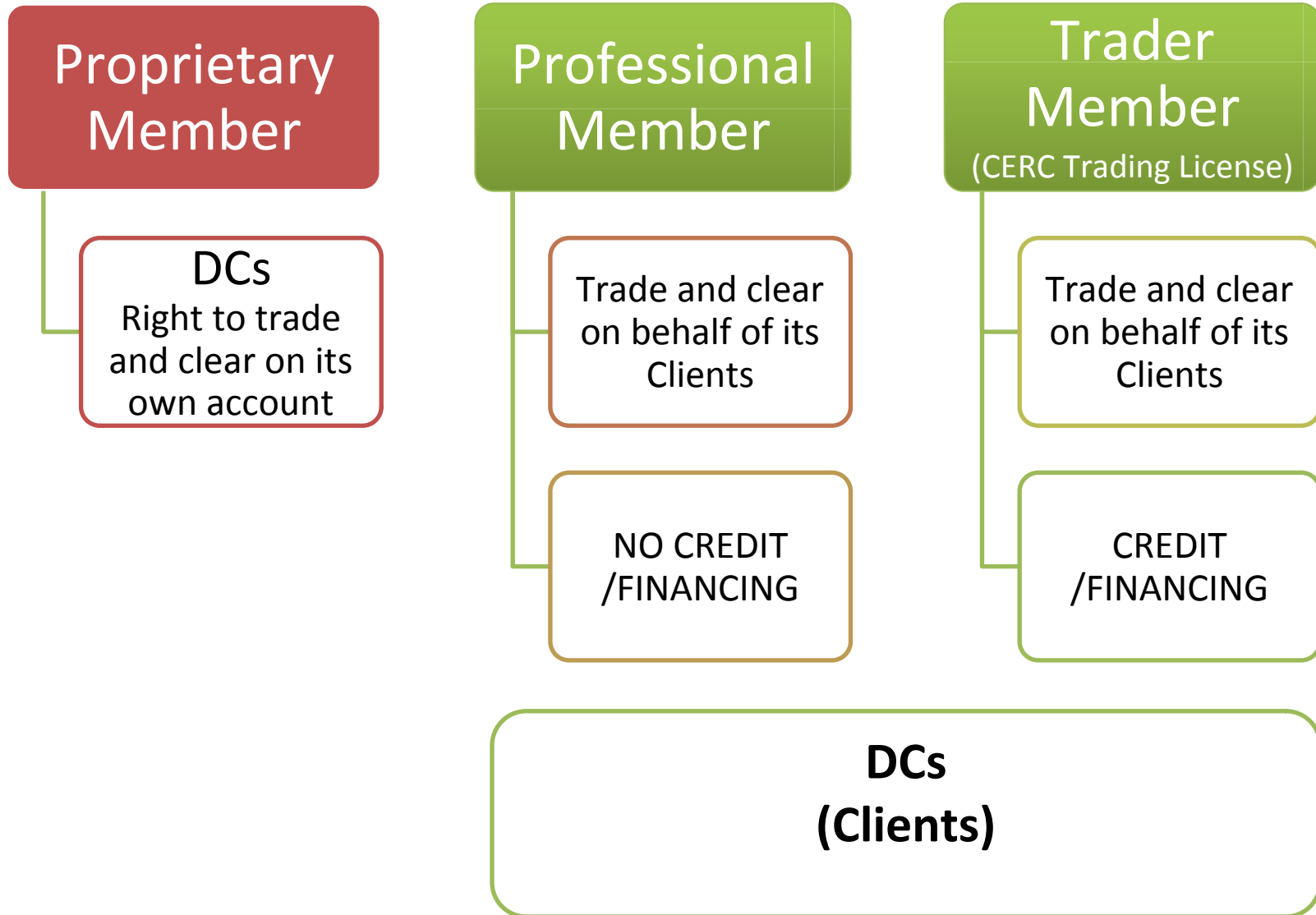
Financial Requirements

- *Existing Electricity & REC members can trade in ESCert market at no extra cost.*

Exclusive ESCert Membership

Fees	Amount (in Rs Lakh)
Admission Fee	5
Subscription Fees (PAT Cycle)	1
Processing Fees	0.1
TOTAL	**6.1**
Interest Free Security Deposit	2.5
IEX Transaction fees(Rs/ESCert)	20
Net worth *	Rs 50

Exclusive ESCert Client

Client Fees	
Client fees per pat cycle	Rs. 20,000
IEX Transaction fees(Rs/ESCert)	20

Forms Required

ESCert Membership

Existing Member (Electricity/REC):

- ✓ No Forms required

New Exclusive Member

- ✓ IEX Membership Application Form.
- ✓ Bio data
- ✓ Net worth Certificate (Proprietary member exempted)
- ✓ Shareholding Pattern.
- ✓ Board Resolution.
- ✓ Membership Undertaking.
- ✓ Details of Client & Settlement Bank account.

ESCert Client

Existing Client (Electricity/REC):

- ✓ Client Registration form(Member to Exchange).
- ✓ Risk Disclosure Document

New Exclusive Client

- ✓ Client Registration form(Client to Member).
- ✓ Client Registration form(Member to Exchange).
- ✓ Member client Agreement
- ✓ Risk disclosure document
- ✓ Undertaking by client of Professional member.
- ✓ Client Request for change of member.

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THANK YOU
for kind attention !!

✓ **"Leaders in Power Market Development"- 2014 I 2015**

   Council of Power Utilities

✓ **"Exchange of the Year"- 2014**

   Power Business View, a First View Group Venture

✓ **"Best Power Exchange in India" – 2012 I 2013 I 2014**

   Enertia Foundation

✓ **"Best Performing Power Trading Company/Exchange" – 2012 I 2013**

   Power line

✓ **"Innovators in Product and Technology"- 2013**

   Inc. India

✓ **"Best E- Enabled Consumer Platform" - 2009**

   Inc. India