

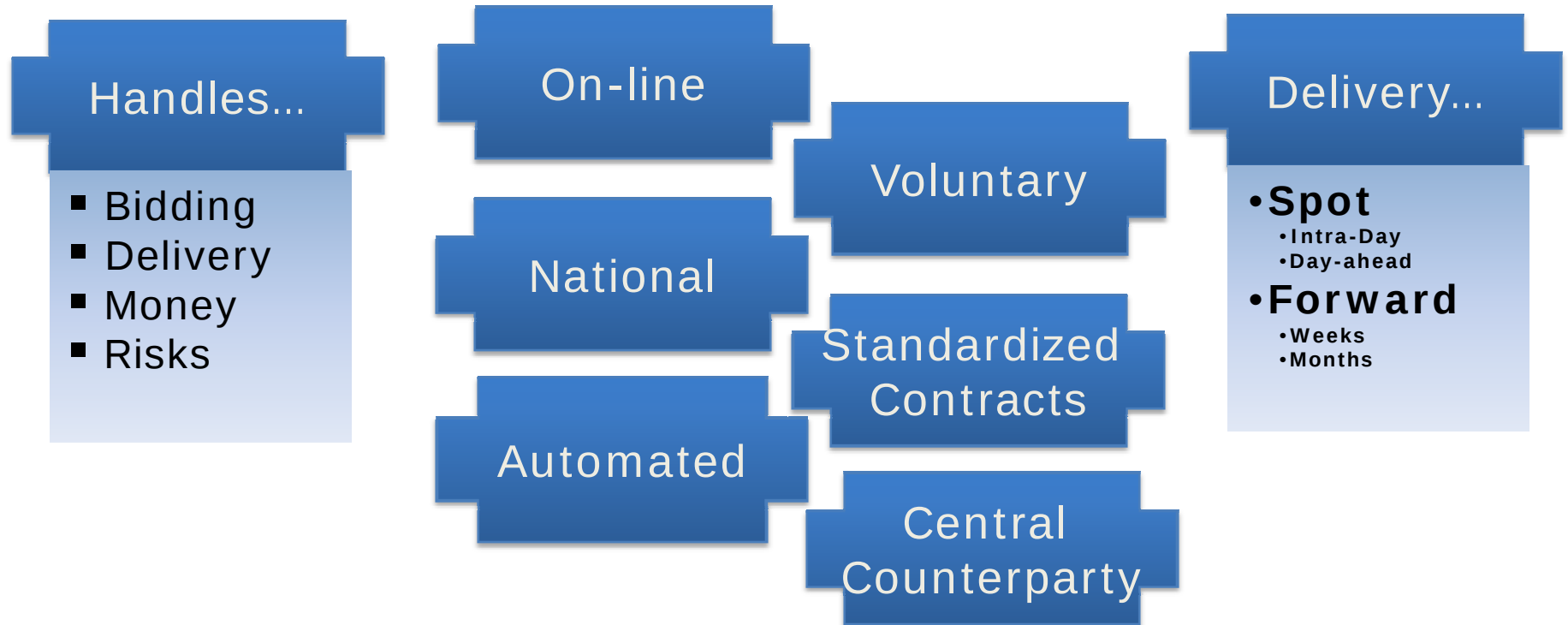


Perspectives on Power Exchange

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What's a Power Exchange?

Organized Marketplace



Main Functions of an Exchange

- Provide technology driven unbiased market place
- Provide neutral and transparent market
- Price discovery
- Standardised contract for Purchase/Sale of electricity as prescribed by the Exchange and permitted by CERC
- All transactions in Contracts shall be cleared, registered and settled by the Exchange.
- Exchange to prescribe trading days and trading session
- Exchange to act as a legal central counter party

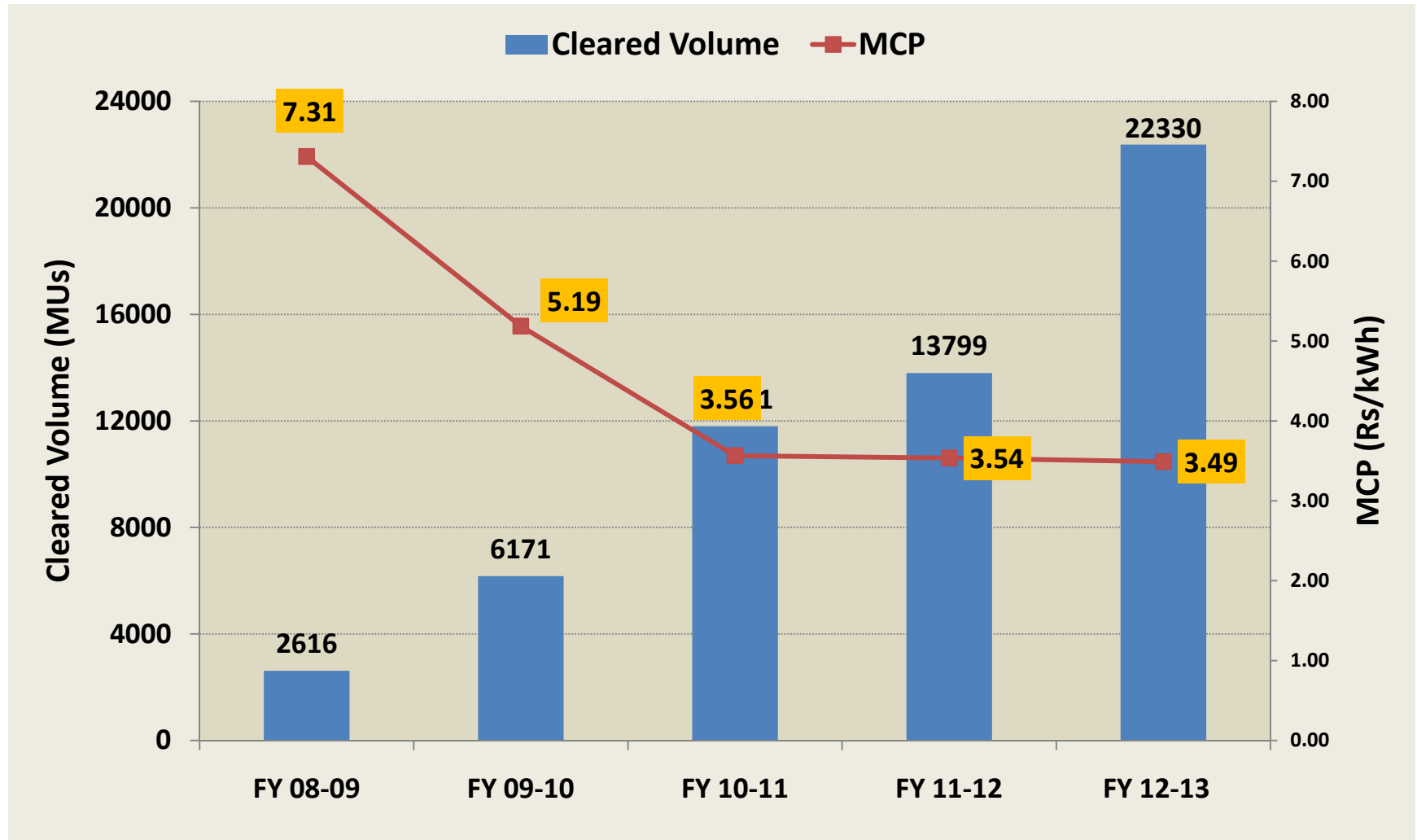
IEX – DAM Product Description

- **Bidding**
 - Double sided Closed Auction
- **Order Types**
 - 15-min block or Portfolio Orders
 - Min 15 Min
 - Different Price-Quantity Pairs
 - Partial Execution Possible
 - Block Orders
 - Relational Block Bid
 - Any 15-min block or series of 15-min blocks during the same day
 - Customized block bid allowed
- **Order Characteristics**
 - Minimum Order quantity cannot be less than 0.1 MW
 - Minimum volume step: 0.1 MW
 - Minimum price step: Rs 1 per MWh (0.1p/kWh)

IEX – DAM Product Description

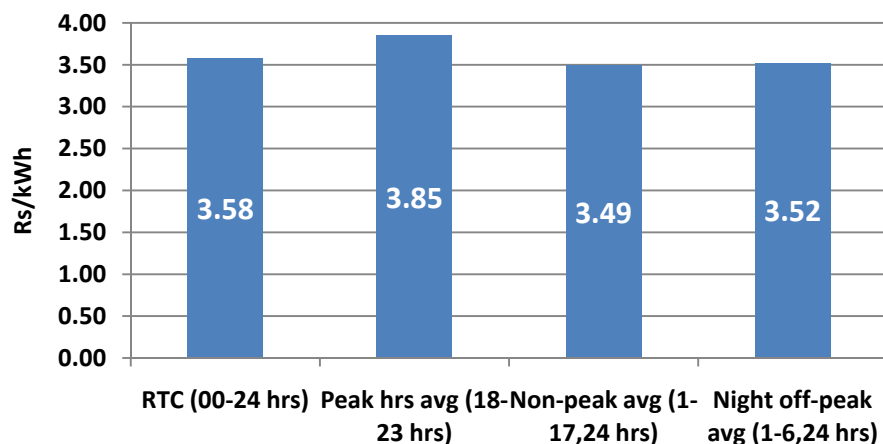
- **Trading Availability**
 - Every Calendar Day
- **Firm commitment to purchase or sell**
- **Order Entry / revise /cancel**
 - Entry of orders on D-1 from 10:00 hrs to 12:00 hrs related to Delivery Day (D day)
- **Delivery Point**
 - Periphery of Regional Transmission System in which the grid-connected entity, is located

DAM Cleared Volume and MCP

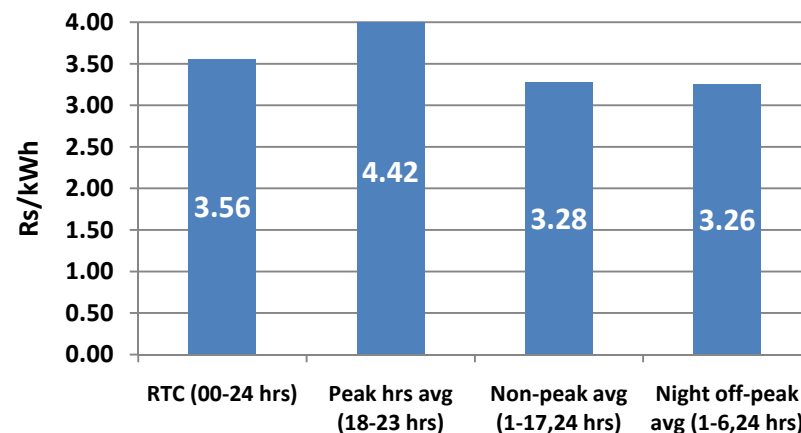


Quarterly Prices for FY 2012-13

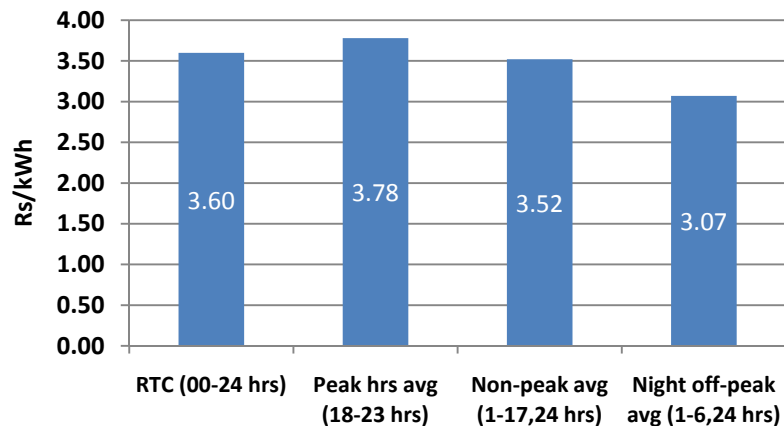
IEX Prices in Quarter 1 (Apr-June'12)



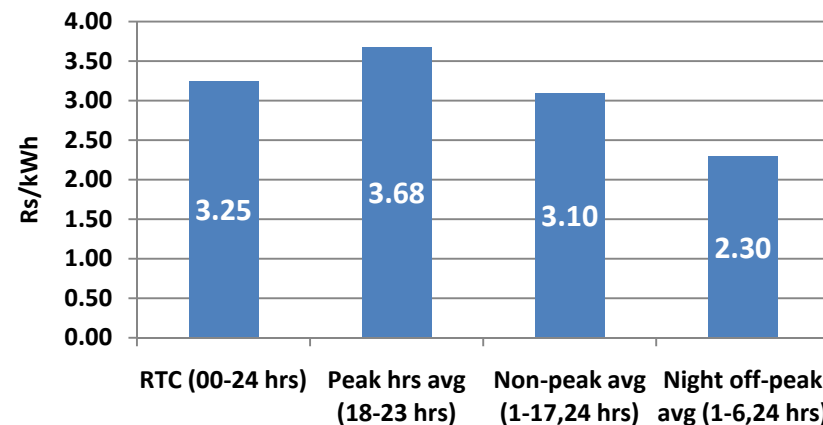
IEX Prices in Quarter 2 (July-Sept'12)



IEX Prices in Quarter 3 (Oct-Dec'12)

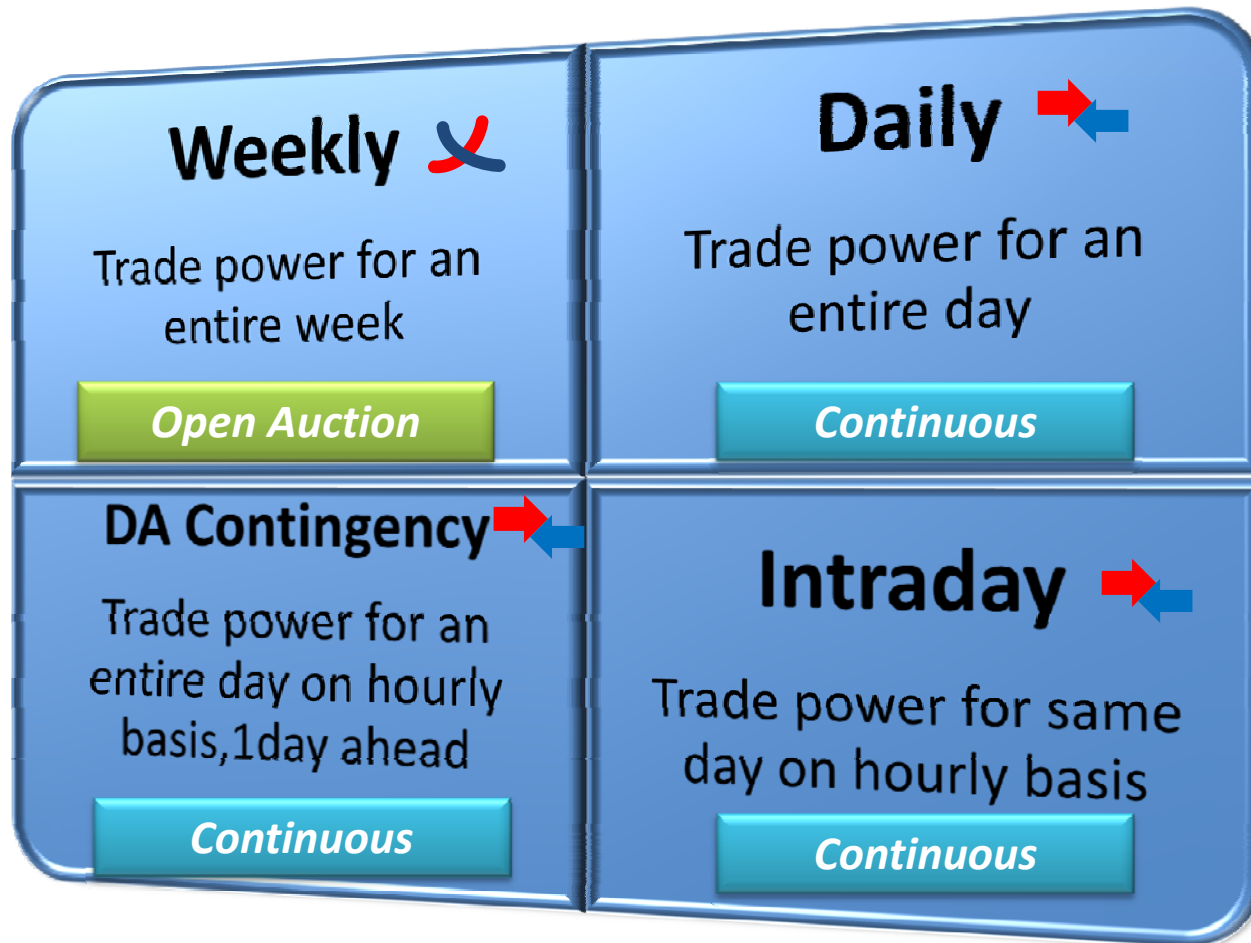


IEX Prices in Quarter 4 (Jan-Mar'13)



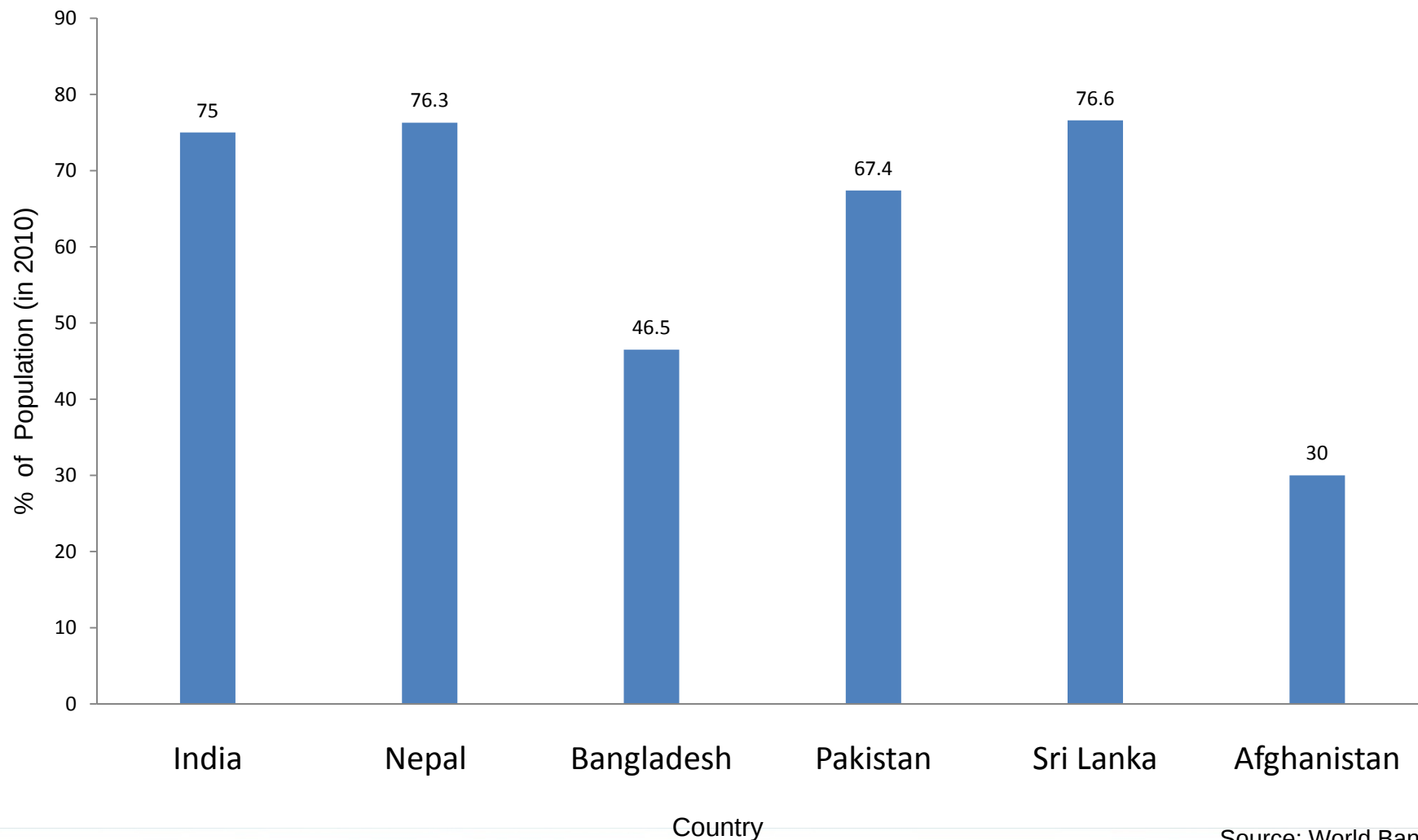


TAM Market Segments



SAARC and cross border trade

SAARC and Electricity Access



Source: World Bank

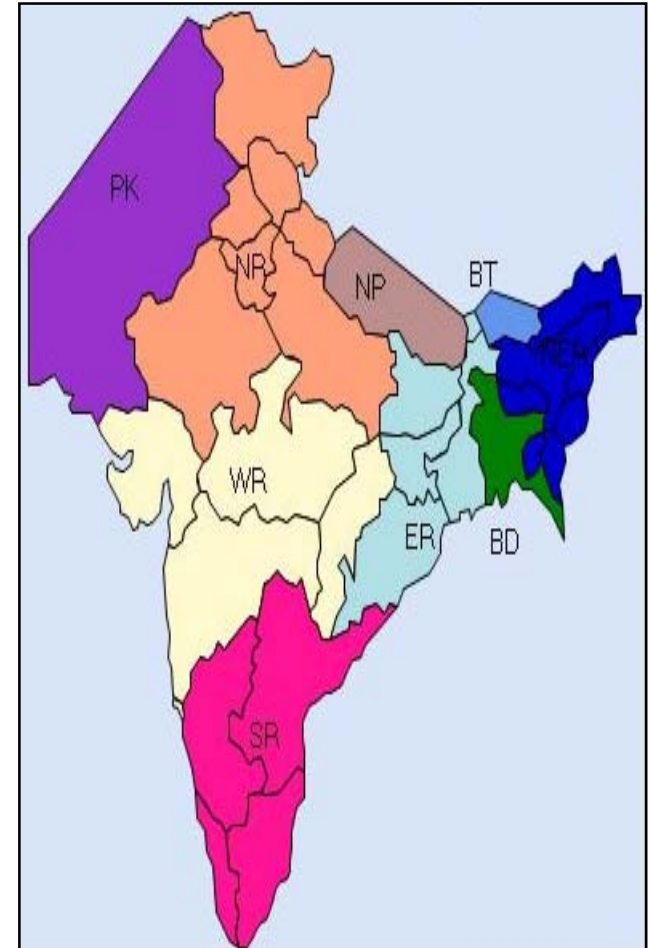
Current Status

	Situation	Potential	Ties	System Size
Nepal	Chronic Shortage	Large Hydro (100 GW)	Very weak(33kV)	1 GW
Bhutan	Surplus	Large Hydro (30 GW)	Strong	0.5 GW
Bangladesh	Chronic Shortage	Gas	None	5 GW
Pakistan	Chronic Shortage	Coal	None	20GW
Sri Lanka	Just sufficient	-	None	2GW
India	Seasonal, diurnal surpluses	Coal, Hydro		120 GW

Source: USAID Report 2009

Status : SAARC Interconnections

- Nepal:
 - 33kV radial connections exist
 - Strong 400kV parallel connections expected by 2014
- Bhutan:
 - Strong 400 kV D/C lines
- No other interconnections
 - India-Bangladesh 500 MWHVDC
As on 31 March 2013, overall progress of HVDC is 63%, while 400/230 kv transmission line is 84.5% complete
 - India-Sri Lanka 500MW Submarine cable expected by 2016
 - India-Pakistan Talks



Single Market for SAARC

Proposed

- Initial transmission capacity built for long term agreements
- Short term transactions will use balance margins
- European Model
 - o Markets and Transmission System operated separately
 - o Implicit Auctioning
 - o ATC of Interconnections post trade
 - o Add country as bid area
 - o Bids/Offer in Common Exchange
 - o Scheduling by TSOs
 - o Financial settlement by local MO/TSO/Utility

- Use of DIVERSITY
 - o Demand, Time, Weather Diversity
 - o Events – Religious, Political, Sports, national festivities
 - o Capacity Mix
- Instant Help to Contingent Systems
- Savings on Operating Costs
- Optimal use of Resources
- Enhance Efficiency and Reliability of Power Supply
- Lower Reserve Margin
- Benefit from Economies of Scale in Power Generation

- Access to all consumers across the region
- Economise use of deficit energy resources
- Competitive Markets
- Transparent and neutral platform
- Price discovery – trusted and reliable
- Double-sided bidding – best price discovery tool
- No market manipulation

Issues

- Trading
 - Different Time Zones (Standard Time)
 - Bidding Currency
 - Results and Reporting
- Delivery
 - Linking transmission lines
 - Co-ordination in scheduling and dispatch
 - Energy Metering and Accounting
- Clearing and settlement
 - Payments Inwards/Outwards
 - Currency risk
- Margins, Collaterals
- Legal Recourse, dispute resolution mechanism
 - Overcoming different legal, regulatory and policy regimes to arrive at a standard set of procedures and policies
 - Need for formation of a common regulator

Thank You for your attention

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Best Performing Power Exchange

– Power Line Awards

Best E-enabled consumer platform

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