

Nigeria: Regulation and Power Sector Reform

Policy Module - Nigerian Approach Regulation for Traders and Retail Competition

Abuja, May 20th 2003

Allocation of Responsibilities: Trading Company

- ◆ Law: authorises to purchase for resale
 - Buy energy
 - Sell to DistCo / Trader or Eligible Customer
 - Regional Trading conditions?
- ◆ Bulk Trader is a special case for the Transition Stage (special licence?)
 - Purchase from Generators to resell to other licensees or Eligible Customers
 - Vesting contracts and stranded PPAs
 - Ancillary Services contracts
 - Competitive procurement
 - Prices of Bulk Trader contracts are an automatic pass through to tariffs?
 - Guidelines on novation of contracts
 - When must DistCo buy from Bulk Trader
 - And when and how contract directly with Generator

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***Market Design
Rules and Codes***

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Competitive Electricity Markets: Market Design

OBJECTIVE = COMPETITION AND EFFICIENCY

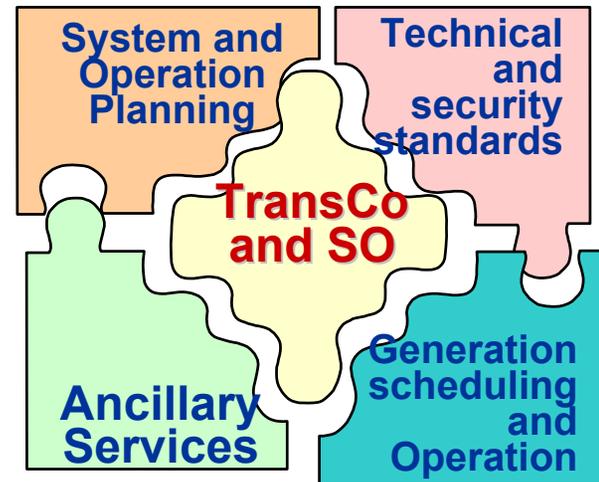
- ◆ Markets can be designed and organized in different ways (from very simple to very sophisticated)
 - Conditioned by experiences, characteristics of the system and initial balance in supply
 - Best practice: use experience in models, and tailor to country / system
- ◆ **Some differences in design:**
 - System Operator and Market Operator
 - Types of Market Participants
 - Single Buyer or Multiple Buyers
 - Retail competition
 - Mandatory dispatch or allow self schedule
 - Energy pricing system
 - Spot / Balancing Mechanism, and short term energy pricing
 - With or without generation capacity payments
 - Ancillary services: Markets, contracts, payments

Principles on Market Efficiency

- ◆ The roles of bilateral contracts and economic dispatch as well as the relationship with centrally administered short term markets (Balancing Market) is the basis to efficient competition in generation.
- ◆ Consistency between design and pricing of centrally administered Markets, contracting obligations, transmission charges and expansion and tariffs is crucial for sustainability of activities in the industry.
- ◆ The energy pricing system should make generators willing to accept economic dispatch and maintenance outage coordinate instructions issued by SO
 - price higher than cost of running generators
 - price lower than cost of idle generators

Why Rules / Codes?

- ◆ Organised power sector with unbundled activities and diversification of ownership
- ◆ Grid Code to co-ordinate multiple Transmission Users
 - Maximise economic use of energy resources and transmission infrastructure of different owners, and guarantee reliability
- ◆ Market rules to co-ordinate multiple Market Participants
 - Admission of Participants
 - Dispatch and contract Nomination
 - Balancing Market
 - Settlement and payments
 - Governance



Implementation of Codes

- ◆ Law establishes during post privatisation stage, Market Rules and Grid Code:
 - Drafted by System Operator
 - Approved by Minister
- ◆ But rules and code needed from start up of restructuring
 - Rule or contractual arrangements between SO and Participants
 - For new investors, predictability of future rules and Codes
- ◆ Reality and international experience shows industry does not have the expertise to draft rules and codes
 - Best practices: drafted by experts, with process (SO, industry Participants) to tailor country / system realities
- ◆ Scope of Grid Code and Market Rules must include matters defined in Law e.g. Market surveillance
- ◆ NERC: monitor, enforce and supervise rules and Codes
 - Approve amendments
 - Rights to request amendments
 - Importance of good and realistic initial rules / Codes
 - If initial rules or Codes not efficient or realistic, NERC would have to request a fast change

Principles on Codes and Rules :

- ◆ Predictable and Transparent.
 - Subjective interpretations may be (or perceived as) discriminatory.
- ◆ Minimize implementation costs.
- ◆ Take in consideration realities
 - Respect legal conditions and pre existing conditionalities
 - Reflect physical infrastructure
- ◆ Open access and facilitate entry
 - New entries
 - Promote regional interconnectors
- ◆ International experiences show that special rules are needed for transition and possible initial lack of competition

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Market Stages

Transition to Competition

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Market Stages

- ◆ Market is dynamic and evolves
- ◆ Market reform can be designed as a step by step approach to increasing competition and sophistication
- ◆ But this requires a careful plan and commitment to ensure that no phase creates barriers to moving forward to increasing competition and efficiency.
- ◆ Grater competition means each operator / Participant has to face greater risks
 - In exchange, should have greater freedom (less regulation)
- ◆ Examples:
 - Gradual implementation of Eligible Customers
 - Gradual phase out DistCo obligation to contract for captive customers or competitive procurement
 - Flexibility in variable cost regulation in Generators bids for dispatch
 - Gradual introduction of Ancillary Reserve Markets

Example of Gradual Implementation: Victoria, Australia

- ◆ Stage 1: 1989 - 1990, reorganization in business units
 - Strategic planning and system operations/single buyer
 - Differentiation into:
 - Transmission, Distribution (municipal, already existed), Generation (transfer prices)
- ◆ Stage 2: 1991 - 1992, start design of centrally administered pool (Vic Pool 1)
 - Separation of distribution: each capacity contracts with competing generating plants (Capacity obligations)
 - Not implemented
- ◆ Stage 3: 1993 - 1995, Government changes
 - Market reform, including privatisation of generation and distribution
 - Vic Pool 2 and Vic Pool 3 based on initial England/Wales market (mandatory gross pool, Balancing market, no capacity obligations)
 - Vesting contracts allocate share of each generation to each distribution
 - Traders bid for PPA projects and to administer Smelter contracts and Interconnection Operating Agreement
 - State government absorbs losses and profits

Example of Gradual Transition: Panama Principal Buyer

- ◆ Transition: first 5 years
 - DistCo obliged to buy at least 85% of load through the Principal Buyer
 - If DistCo can buy cheaper, Regulator may authorize contract directly
- ◆ Transmission Company = Principal Buyer.
 - Acts as aggregator of Distributors' load:
 - Development of larger scale power plants
 - Non profit service (Does not make money or lose money)
 - Acts in name of the Distribution companies
 - Obligated to same rules and regulated procedures for contracting as Distribution Company.
 - Distribution companies participate in design of bidding documents and selection of best bids.
 - Contracts transferred at the end of Initial Period as a separate contract to each Distribution Company involved.
 - Payments are directly from the Distribution Company to the generator
 - Money from the contract never goes through the Transmission Company.

Nigeria: Initial Transitional Stage

- ◆ Structure:
 - Bulk Trader
 - Contracts that allow novation
 - NEPA unbundling
 - Successor GenCo and DistCo
 - TransCo and SO
- ◆ TransCo :
 - System plan expansion/ upgrade
 - NERC approval?
- ◆ IPPs
 - Pre existing PPAs
- ◆ Trading exclusively in Contracts:
 - Vesting Contracts?
 - No Imbalances or contracts for imbalances
- ◆ DistCo and Bulk Trader
 - Contracting obligations
 - Competitive procurement



Nigeria: When does a Competitive Market start?

- ◆ Competitive stage requires fulfilling following conditions:
 - Sufficient generation capacity (cover load plus reserve margin)
 - Transmission and distribution rehabilitated and reinforced
 - Economic level of constraints and congestion
 - Cost reflective tariffs for sustainable industry, including rate of return
- ◆ Retail competition
 - Diversification of traders
 - Distribution network wheeling charges
- ◆ Nigeria Competitive conditions to start Medium Stage
 - Private participation:
 - 100% thermal, 85% distribution
- ◆ NERC prepare an annual report on potential competition
 - The basis for Minister to decide start up of Medium Term Stage
 - Design standard scope and mechanisms (index) to measure competition and privatisation
 - Publication for industry and investors?

Nigeria Power Market: Medium Term Stage

- ◆ Change in structure
 - Bulk Trader novates contracts to DistCos and phases out
 - Eligible customers: initiate retail competition
 - Multiple traders allowed
- ◆ Bilateral contracts
- ◆ Start Balancing Market
 - Related to economic dispatch and system operation
 - SMP: unconstrained economic dispatch
 - Generator must nominate all available capacity for dispatch :
 - Regulation of variable cost offers
- ◆ DistCo sales to captive consumers
 - Obligation to contract
 - Competitive procurement
- ◆ Ancillary Services:
 - SO procures (contract) at minimum cost
 - Recover from Loads
- ◆ **Separate SO from TransCo?**



Nigeria Power Market: Long Term Stage

- ◆ Enough generation capacity and reserve, and adequate transmission capacity
- ◆ Increase retail competition
 - Distribution use of network charge
- ◆ Balancing Market:
 - Price bidding?
- ◆ Separate SO from TransCo?