



South Asia Regional Initiative for Energy (SARI/Energy)

ELECTRICITY MARKET DEVELOPMENT PROGRAMME

(EMDP – GEMTP II)

August 5 – 8, 2008

Hyatt Regency, Kathmandu Nepal

AGENDA

KNOWLEDGE PARTNER



ORGANIZED BY



And



Tuesday, August 5, 2008

SETTING THE STAGE

0830 - 0900 : Registration

09:00 - : **Welcome Address & Introduction** - Subodh Adhikari/USAID - Kathmandu
09:05

09:05 - : **Keynote Address** – Dr. Anthony S. Chain/ Deputy Mission Director/USAID -Kathmandu

09:15 : **Inaugural Address** - Ministry Official / Govt. of Nepal

09:15 - : **Introduction to SARI/Energy Program** - Sabyasachi Pattanaik/ PA Consulting
09:25

09:25 -
09:30

MARKET STRUCTURE DESIGN

10:00 - : **Workshop Overview:**

10:30 : I. Participant Introductions
II. Module Overview
III. Instructors

10:30 - : I. Objectives of Electricity Markets
11:15 : a) Economic efficiency
b) Economic development
c) Reliability
d) Environmental objectives

11:15 - : II. Privatization of Assets
11:45 : a) What is privatization
b) Objectives of privatization
c) Issues and complexities
d) Examples of countries that privatized their electric power system

11:45 - : **GROUP PICTURE**

11:50 : Coffee Break
12:00

12:00- : III. Preconditions for Electricity Markets
12:30 : a) Size of power system and sufficient number of generation units
b) Understanding of electricity fundamentals

- 12:30 - :
13:00
- c) Understanding of markets
 - IV. Overview of Electricity Market Design Elements
 - a) Competitive procurement
 - b) Open access/bilateral wholesale market
 - c) Centralized wholesale market
 - i. Centralized unit commitment vs. no centralized unit commitment
 - ii. Nodal vs. zonal prices
 - d) Retail Market
- 13:00 - : LUNCH
14:00
- 14:00 - :
15:30
- V. Key Issues that Electricity Markets Need to Address
 - a) System operation and reliability
 - b) Congestion
 - c) Transmission expansion
 - d) Demand response
 - e) Market power
 - f) Environmental issues
 - VI. Examples of Electricity Markets
 - VII. Lessons Learned to Date from Electricity Markets
- 15:30 - :
15:45
- 15:45 - :
17:00
- Role of the Regulator in a Competitive Electricity Market:**
- Characteristics of autonomous regulatory commissions
 - I. Role of State vs. federal regulators
 - II. Status of Retail and Wholesale Competition in the U.S.
 - III. Key Issues: Unbundling, Third Party Access, Market Monitoring
 - IV. Role of Regional Organizations of Regulators

Wednesday August 6, 2008

ELECTRICITY MARKETS FUTURE TRENDS & CHALLENGES

- 9:00 - 11:00 : **Role of System Operators**
- I. Real Time Market and System Operations
 - a) Real Time Dispatch
 - b) Managing Constraints and Out of Merit Order Dispatch
 - II. System Emergency Procedures
- 11:00 - 11:15 : Coffee Break
- 11:15 - 13:00 : **Role of System Operators (contd...)**
- 13:00 - 14:00 : LUNCH
- 14:00 - 15:30 : **Role of Market Operators**
- I. Day Ahead Market
 - a) Defining Market Bids and Offers
 - b) Day Ahead Clearing Process
 - c) Commitment of Generators
 - d) Reliability Analysis
 - e) Timeline of Day Ahead Market
 - f) LMP and FTR's
- 15:30 - 15:45 : Coffee Break
- 15.45 - 17.00 : **Transmission Planning**
- I. Reliability Assurance Agreement
 - II. Transmission Owners Agreement
 - III. Operating Agreement

Thursday August 7, 2008

SPOT MARKETS/BALANCING MARKETS/TRADING

- 09:00 :: I. Real Time Market – How it works
- a) Dispatch priority
- 09:45 II. Balancing Market
a) Real Time vs. Day Ahead Position
b) Financial Impacts
c) Ancillary Services
- III. Market Surveillance
a) Need for Market Monitoring
b) Market Monitoring Plan
c) Data and Activities Analyzed by the Market
Monitoring Unit
- 09:45 :: I. Characteristics of electricity Markets Related to Power Procurement
- a) Volatile electricity prices
10:30 b) Emission allowances
c) Type of electricity market
- II. Types of Power Procurement
a) Power contracts
i. Fixed output
ii. Unit contract (with and without contingencies)
iii. System contract
iv. Fixed vs. variable pricing
v. Forward for future contracts
b) Fuel price risk
c) Congestion risk
d) Spot Market
i. Day-ahead
ii. Real-time
e) Trading and risk management
i. Forecasting/forward curve
ii. Risk management and instruments
iii. Insurance
iv. Trading desks
- 10:30 : Coffee Break
-
- 10:45
10:45 : I. Economic Characteristics of Contracts
- a) Long-lived assets
13:00 b) Sunk

- c) Value is uncertain
- d) Contracts by definition bind parties to act in ways that they would prefer not to
- II. Objects of Well-written Contracts
 - a) Align risk and reward
 - b) Clarity
 - c) Tailored to meet needs of parties
- III. Elements of a Typical Power Contract
- IV. Contracting Do's and Don'ts

13:00 : LUNCH

-

14:00

14:00 : **Ancillary Services & Operational Planning**

-

15:30

I. Ancillary Services

- a. Listing and description of ancillary services
 - i. Operating reserves (ten-minute spinning, ten-minute non-spinning, and thirty-minute reserves)
 - ii. Automatic generation control/frequency control
 - iii. Blackstart service
 - iv. Others
- b. Purpose of ancillary services
- c. Procurement of ancillary services (market-based vs. regulated)

II. Unit Commitment and Real-time Dispatch

- a) Unit Commitment (Security Constrained Unit Commitment)
 - i. Description and examples
 - ii. Reasons
 - iii. How it forms the basis for the day-ahead market
- b) Real-time dispatch
 - i. Descriptions and examples
 - ii. Reasons
 - iii. How it forms the basis for the real-time market
- c) How the day-ahead and real-time markets work together
- d) Issues that arise between economics and reliability

III. Generation maintenance scheduling

15:30 : COFFEE BREAK

-

15:45

15:45 : **Closing Session and Graduation**

-

17:00

Friday August 8, 2008

OVERVIEW OF THE INDIAN ELECTRICITY MARKET

- 09:00 - 09:30 : I. Overview of the Indian Electricity Market - Central Electricity Regulatory Comm
- a) Rules to enter market
 - b) Structure and key players of the electricity market
 - c) Current status and future plans – the Future Indian Electricity Exchange
- 09:30 - 10:15 : II. Role of the Regulator – Central Electricity Regulatory Commission
- a) Open access regulation
 - b) Recent tariff and market orders
- 10:15 - 11:30 : III. Availability Based Tariff (ABT) Overview of Guiding Principles – Central Electricity Regulatory Commission
- a) What is Availability Tariff
 - b) How do the beneficiaries share the payments
 - c) How does the mechanism work
 - d) Why was Availability Tariff necessary
 - e) How does it benefit everyone
 - f) U.I. Rate vs. System Marginal Cost
 - g) Incentives for helping the grid
- 11:30 – 11:35 : **GROUP PICTURE**
- 11:35 - 11:45 : Coffee Break
- 11:45 - 12:45 : IV. Availability Based Tariff (ABT) Procedures Overview – Power Grid Corporation of India
- a) The daily scheduling process
 - b) Deviations from schedule
 - c) Weekly settlement system
 - d) Improvements in frequency
- 12:45 - 13:15 : V. Role of the Transmission Company – Power Grid Corporation of India
- a) Key function of the grid code
 - b) Open access
- 13:15 – 14:15 : Lunch
- 14:15 - 15:30 : VI. Role of the Indian Power Trader – Power Trading Corporation
- a) The trader’s perspective on ABT
 - b) Intraregional energy exchange
 - c) Level of trading in India
- 15:30 - 15:45 : Coffee Break
- 15:45 - 17:00 : VII. PTC: Trading with Other Countries – Power Trading Corporation
- d) Structure of international trades
 - e) Settlement of payments
 - a) Guarantees

