
Harvard Electricity Policy Group
Ninth Plenary Session
Dallas, Texas

by
Vikram Budhraja
Senior Vice President
Southern California Edison

January 26, 1996
California Experience – Overview

**Milestones**

- Yellow Book – 1993
- Blue Book – April 1994
- Alternative Decisions – May 1995
- MOU – September 1995
- CPUC Decision – December 20, 1995

**Issues**

- Competition Wholesale or Retail
- Prices – Regulated or Competitive
- Customer Choice – Virtual or Direct
- Stranded Cost Recovery – All or None
- Generation Divestiture – All or None
- Market Structure – POOLCO or Bilateral
- Public Policy Programs – Commitment and Funding
- Who Wins – Big or Small Consumers
- Jurisdiction, Reciprocity, Level Playing Field
California CPUC Decision

- 100% cost recovery
- Implement new market structure by 1/98 with Independent System Operator, Power Exchange, and start of Direct Access
- Phase-in of Direct Access – no more than 5 years
- 50% fossil generation divestiture
- All customers have choice, flexibility, and benefits of competition
- Public Policy Programs funded by non-bypassable charge
- Competitive Transition Charge – un-bypassable
- No cost shifting
CPUC Decision Market Structure

- Energy required to meet the residual loads not served by bilateral contracts
- Supply and demand bidding
- Economic generation dispatch
- Visible market clearing price for bid-in generation

ISO
- Day-Ahead Planning/Integration
- Non-discriminatory Access
- Real-Time Energy Balancing
- Mandatory Protocols
- Iterative Process
- Ancillary Services
- Settlements

Bid-in Generation

Power Exchange
Spot Market

Aggregator #1

Aggregator #2

Bilateral Contracts

Distribution Utility

Distribution Utility

C C C

C C C C
## Function of the ISO and Power Exchange

<table>
<thead>
<tr>
<th>ISO</th>
<th>Power Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Manages reliability of transmission grid</td>
<td>- Runs the day-ahead spot market auction</td>
</tr>
<tr>
<td>- Controls dispatch of transmission grid</td>
<td>- Voluntary participation by producers</td>
</tr>
<tr>
<td>- Provides non-discriminatory, open access to transmission grid</td>
<td>- Power producers compete based on non-discriminatory and transparent bidding rules</td>
</tr>
<tr>
<td>- Procures ancillary services</td>
<td>- Submits proposed power delivery schedule to the ISO</td>
</tr>
<tr>
<td>- Coordinates day-ahead power scheduling and real-time power balancing</td>
<td>- Establishes visible market clearing price</td>
</tr>
<tr>
<td>- Performs settlement function for unscheduled transactions and ancillary services</td>
<td>- Performs settlement function for day-ahead scheduled transactions</td>
</tr>
<tr>
<td>- Administers Congestion Management Protocols for Transmission Grid/Network</td>
<td></td>
</tr>
</tbody>
</table>
ISO and Power Exchange Separation

- Functionally separates operating and commercial auction functions
- Assigns focused responsibility to ISO and Power Exchange
- Provides transparent information about system operations and congestion
- Aids in eliminating any perception of discriminatory decision making
- Sets up ISO to treat bilateral and power exchange schedules on a comparable basis
- Eliminates the potential and perception of conflict between ISO’s operating role and procurement role with incentives for financial gain by preferring exchange supplier over others in dispatching generation and scheduling transmission
Utility Structure In Transition

Integrated Structure – Existing

Generation
Transmission
Distribution

Existing Functions

Generation
Prescheduling
Dispatch
Transmission
Distribution

Functional Unbundling – New

Generation
Power Exchange
Independent System Operator
Transmission/Grid
Distribution
Retailing
## Market Structure Comparison

<table>
<thead>
<tr>
<th>Market Structure Objectives</th>
<th>Separate ISO/PX</th>
<th>Integrated ISO/PX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Separation</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Reliability</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Transparency</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Focus</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Unbundled Prices</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Practicality/Current Practice</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>