

Reliability in a Carbon Constrained World

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Core Mission of Independent System Operator

- Operate Viably Competitive Market
- Maintain System Reliability
- System Planning

Two Types of Fundamental Challenges for ISO

- Those Beyond PJM's Control
- Those Subject to Internal Control

Key External Challenges

- Inherent Uncertainties
 - Carbon Policy
 - Ever Changing Transmission Realities

I. Key Uncertainties External to ISO

1. Carbon Emissions

- National controls?
- State controls?
 - With or Without National Controls?
 - Leakage Issues?
- Nature of Carbon Controls
 - Cap & Trade?
 - Taxes?
 - Cap & Dividend?
- Environmental Dispatch?
- Plant Specific Impacts (Availability and Retirement?)

I. Key Uncertainties External to ISO

2. Renewable Policies

- National RPS?
- State by State RPS?
- RPS & Cap & Trade?
- Non-Economic Merit Order?

I. Key Uncertainties External to ISO

3. Transmission Realities

- Dynamic Nature of Grid
 - Changing Congestion Costs
 - Changing Asset Values of Generation and Transmission
 - Changing Security Constraints
 - Impact of Demand Response
 - Changing Beneficiaries

I. Key Uncertainties External to ISO

4. Planning and Licensing Gaps

- ISO Plans Not Binding in Siting Proceedings
- Forum Shopping on Planning
 - ISO
 - FERC
 - State Processes

I. Key Uncertainties External to ISO

5. Cost Allocation

- Lack of Coherent FERC Policy
- Tension Between “Beneficiary Pays” and “Socialization”
- Identify in Beneficiaries Over Life of Asset

I. Key Uncertainties External to ISO

6. Financial Issues

- Ability of Players to Build Transmission Enhancements
- Willingness of Players to Make Transmission Investments
- Financial Regulatory Reform
 - Derivative Regulation
 - Credit Availability

II. Key Uncertainties Internal to ISO

1. Agility in Responding to Changed Circumstances
 - Tension Between Participatory Processes and Efficient, Timely Decision Making

II. Key Uncertainties Internal to ISO

2. Keeping Eye on Core Mission

- Conflicting Demands on ISO's
- Maintaining "Big Picture" Vision in Arena with Multiple "Little Picture" Issues
- Avoiding Mission Creep
- Market Mechanisms vs. Command and Control

II. Key Uncertainties Internal to ISO

3. Defining Transmission?
 - Market Participant or Enabler?
 - When is Transmission Investment Appropriate? Demand Response? Strategic Location of Generation? IRP Reborn?