

# *Evolution of Markets and the Open Access Transmission Tariff*

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**Peter K. Matt, Esquire**  
**Thomas L. Blackburn, Esquire**  
**Bruder, Gentile & Marcoux, L.L.P.**

1701 Pennsylvania Avenue, N.W.  
Suite 900  
Washington, D.C. 20006  
Telephone: 202/296-1500  
Facsimile: 202/296-0627  
E-Mail: [pkmatt@brudergentile.com](mailto:pkmatt@brudergentile.com)

# Wholesale Power Markets – The Early Stages

- In the mid-1980s nearly all generation was owned by vertically integrated utilities.
- Inter-utility power sales typically were made under complex interchange agreements that had different prices for economy energy (split savings), maintenance energy, emergency energy (\$100/MWh), short-term energy and opportunity sales.
- Utilities with excess generation occasionally made medium-term sales of capacity and energy until they “grew into” their newest generators.
- All sales other than emergency energy sales were cost-based.

# Transmission Service – The Early Stages

- ❏ Virtually all transmission service was bundled with power sales.
- ❏ Utilities tightly controlled access to transmission service and built facilities only for reliability purposes.
- ❏ Exceptions to this practice included Boston Edison Company, Florida Power Corporation and Associated Electric Cooperative.



# Wholesale Power Market – First Steps

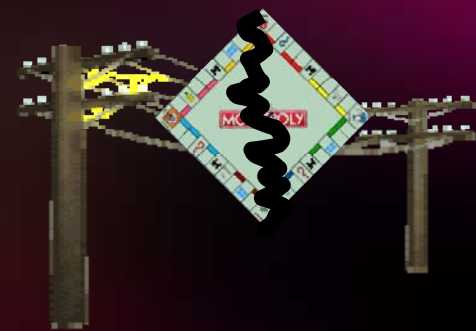
- In 1986, the Federal Energy Regulatory Commission (“Commission” or “FERC”) granted Citizens Energy Corporation, a non-profit charitable organization, authority to sell power at market-based rates. Citizens was the first power marketer in the country.
- In 1989, the Commission gave Citizens Power & Light, a for-profit power marketing affiliate of Citizens Energy, blanket authority to sell power at market-based rates.
- In late 1991, Central Vermont Public Service became the first utility in the country to offer “mix and match” energy sales at rates at or below fully allocated costs.
- Public Service Company of Indiana was the first integrated utility to receive limited market-based rate authority (1990). It was followed by Entergy (1992) and United Illuminating (1993).

## Wholesale Markets and Transmission Service – The Energy Policy Act of 1992

- EAct 1992 was intended to encourage competition in wholesale power markets. However, the actual changes were modest.
- EAct 1992 modified the Public Utility Holding Company Act to provide for wholesale generators to be exempt from SEC regulations under specific conditions.
- EAct 1992 also gave the Commission the authority to order any electric utility (including non-IOUs) or Federal Power Marketing Authority to provide transmission service under limited conditions.
  - The process was slow and complicated.
  - Only 19 orders requiring transmission service were issued in 13 years, and in most instances the scope of the requirements was narrow.

# 1994 – The Change in Undue Discrimination Policy

- The Commission signaled a fundamental change in the way it viewed transmission service in a landmark decision involving American Electric Power.
  - Until 1994, undue discrimination was evaluated based on whether a utility treated similarly situated customers differently.
  - FERC announced that its new policy would be to evaluate undue discrimination in transmission service based on whether a utility treated a customer differently than it treated itself.



## 1994 – The Change in Undue Discrimination Policy (cont'd)

- On the same day, FERC ordered Florida Power & Light Company to provide network transmission service – service that approximates transmission for native load – to Florida Municipal Power Agency.
  - Most of the basic aspects of network service that are in place today were established in the FPL order.
- Commissioner Hoecker characterized the two orders as indicating that the Commission is “seriously reevaluating its administration of the FPA and the marketplace structures the FPA is designed to foster,” and that “the Commission will actively encourage a competitive market for power by facilitating access....”
- Hoecker predicted changes in market power analysis and evaluations of mergers.

## 1994-1995: The “Hundred Flowers” Period

- FERC encouraged utilities to file open access transmission tariffs.
- It stated that it was open to innovative ideas, so long as utilities offered customers service that was comparable to the service they provided themselves.
- Over time “encouragement” became closer to “requirement” since open access was required as a condition of approvals of mergers and market-based rate authority.
- Utilities began offering open access transmission service in order to obtain market-based rate authority.
- In turn, the increasing use of market-based rates for inter-utility sales placed more pressures on utilities to improve transmission service.

# Order No. 888

- In March 1996 the FERC adopted a pro forma Open Access Transmission Tariff and made it effective for all jurisdictional transmission providers as of July 9, 1996.
- The OATT terms are largely the same as the Commission required for Florida Power & Light: network service, firm and non-firm point-to-point transmission service and ancillary services.



# Network Integration Transmission Service

- Service is comparable to the utility's transmission service to its native load.
- Customers designate Network Resources – firm generation and power purchases. There is no limit on the amount of Network Resources that may be designated.
- Customers pay for service based on their load ratio share of firm service on the system – including load served by behind-the-meter generation.
- Transmission service from Network Resources is firm service, and is curtailed pro rata with native load service.

## Network Integration Transmission Service (cont'd)

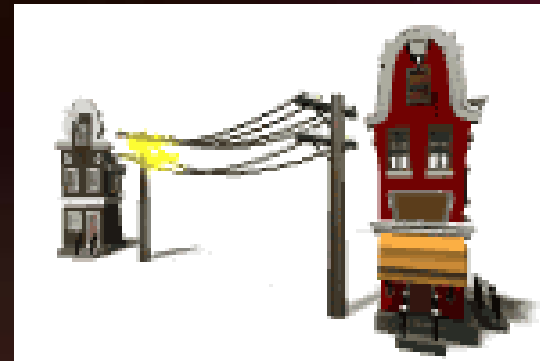
- Transmission service from sources other than network resources is non-firm, but has a higher priority than any other non-firm service.
- Network customers' loads and resources must be integrated into the transmission provider's long-term planning.

# Point-to-Point Transmission Service

- Service is intended to be comparable to the transmission provider's use of the system to make off-system sales.
- Service is from designated Points of Receipt to designated Points of Delivery. A separate charge is assessed for each POR/POD pair.
- Firm service has the same priority as native load service. Non-firm service may be curtailed for economic reasons (including higher-priority transmission service) or reliability reasons.
- Customers may modify their PORs and PODs on a firm basis and lose their original rights; or modify them on a non-firm basis and retain their rights at the original POR/POD.

# Point-to-Point Transmission Service (cont'd)

- Service is available by the day, week, month or year.
- Service of less than one year is conditional – subject to being bumped by longer-term firm service requests until one month before the commencement of monthly service, one week before the commencement of weekly service, etc.



# Ancillary Services

- Services the transmission provider must provide to all customers:
  - Scheduling and dispatch service;
  - Reactive supply from generation sources service.
- Services the customer must obtain but may obtain from other providers:
  - Regulation and Frequency Response Service;
  - Energy Imbalance Service;
  - Operating Reserves (Spinning) Service;
  - Operating Reserves (Supplemental) Service.

## 1993 – The Birth of the RTO

- FERC issued a Policy Statement regarding Regional Transmission Groups.
- The Policy Statement built on proposed “consensus legislation” that didn’t make it into EPAct 1992 that would have required the FERC to certify RTGs that met criteria with respect to membership, wheeling, obligations to build, coordinated planning and dispute resolution.
  - RTG decisions were to be entitled to deference by FERC.
  - Rates charged by non-jurisdictional utilities would have to meet FPA standards and be subject to filing and suspension.
- The Commission endorsed RTGs and established criteria similar to those in the consensus legislation.

## Order No. 888 and ISOs

- Order No. 888 encouraged, but did not require, the development of Independent System Operators.
- Order No. 888 established eleven principles for assessing ISO proposals that addressed governance, independence, open access transmission, reliability, incentives for efficient management, pricing policies, availability of information, regional coordination and dispute resolution.
- Five ISO proposals were approved or conditionally approved between 1996 and 2000: California ISO, PJM, ISO New England, New York ISO and Midwest ISO. SPP also is an RTO.

# The Power Marketing Industry Comes of Age

- Between 1996 and 2000, utilities executed contracts to divest 80,000 MW of generation – 10% of U.S. generation capacity.
- Independent generation totaled 100,000 MW by 2000.
- Power marketing transactions grew from 1.8 million MWh in the first quarter of 1995 to 400 million MWh in the first quarter of 1999.
- The Commission granted market-based rate authority to more than 800 entities, of which nearly 500 were power marketers.
- 23 states enacted retail choice legislation.



# Order No. 2000: The Background

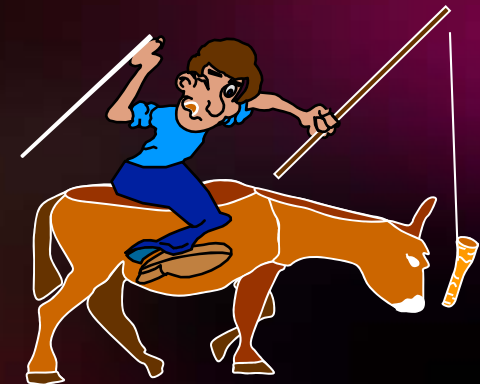
- The Commission determined that numerous transmission problems existed:
  - Transmission constraints were resulting in wholesale power price spikes.
  - Transmission curtailments were increasing.
  - Transmission planning and construction were not keeping pace with increased demand.
  - Maintaining transmission reliability required coordination over large geographic areas.

## Order No. 2000: The Background (cont'd)

- The Commission became concerned that ISO development was “haphazard” and had “inconsistent results.”
- The Commission also identified economic and engineering inefficiencies that resulted from the lack of coordinated regional transmission service, as well as continuing opportunities for unduly discriminatory service.

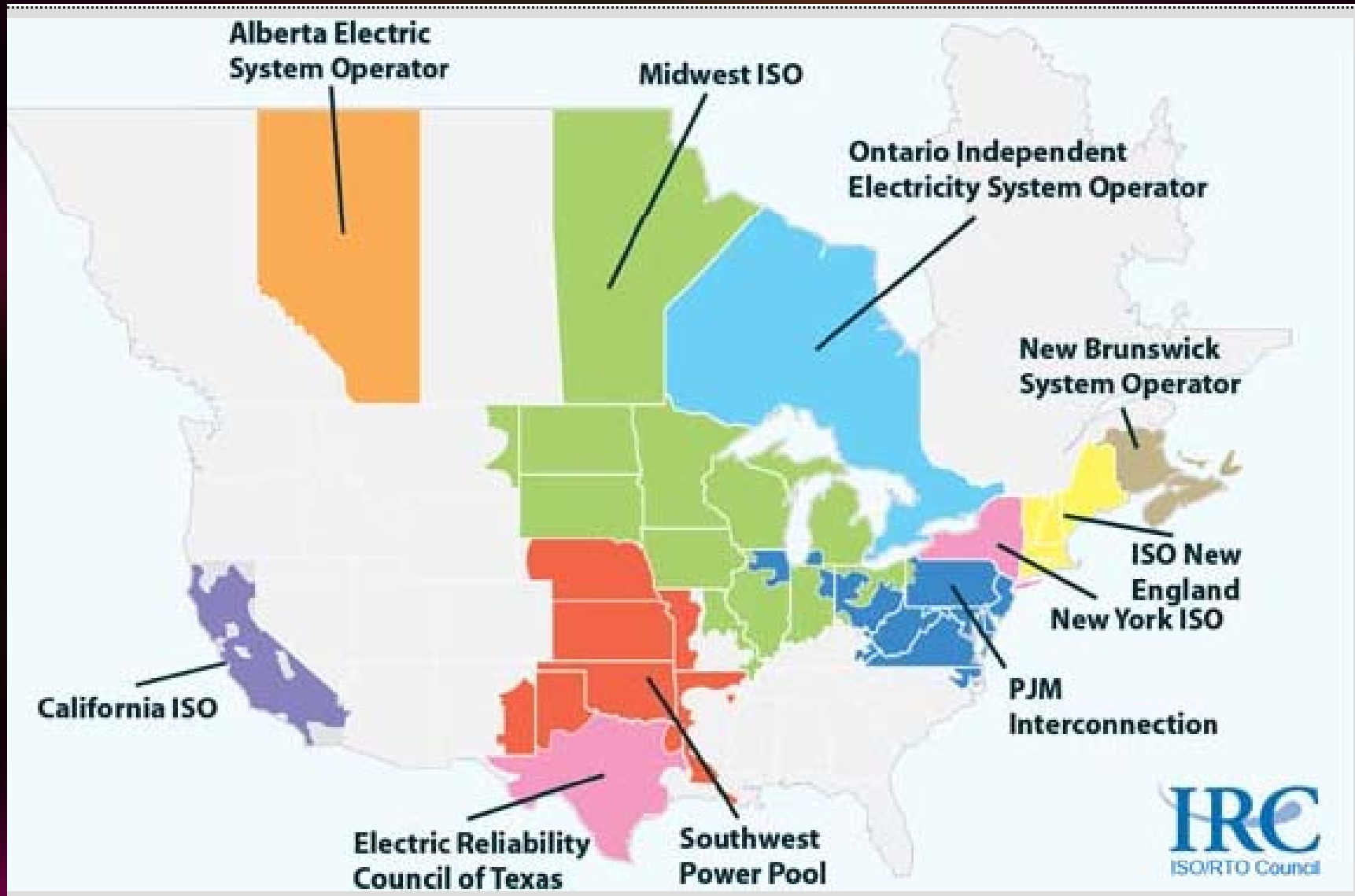
# Order No. 2000: The Requirements

- The Stick: Every utility must file, by October 15, 2000, either a proposal to participate in an RTO; or a description of any efforts it made to join an RTO, an explanation of why it did not join and a description of the efforts it will make to join an RTO.
- The Carrot: FERC also stated that it would consider innovative rate treatment proposals that would help achieve the goals of RTOs, including rate moratoriums, formula rates of return, accelerated depreciation, levelized transmission rates, incremental transmission pricing and performance-based rates.



# RTO Characteristics

- Independence from any market participant and authority over rates (reversed by the Court of Appeals), terms and conditions of service.
- Service in a region of sufficient scope and duration to maintain reliability and support efficient and non-discriminatory power markets.
- Operational authority over all transmission facilities, including acting as the Security Coordinator.
- Authority over short-term reliability, including authority over interchange schedules, reliability-related redispatch and approval of scheduled outages.



# RTO Functions

- 🚧 Tariff administration and design.
- 🚧 Congestion management through market mechanisms.
- 🚧 Parallel path flow management.
- 🚧 Provision of ancillary services.
- 🚧 OASIS, ATC and TTC management.
- 🚧 Market monitoring.
- 🚧 Planning and expansion.
- 🚧 Interregional coordination.
- 🚧 Ability to evolve to improve efficiency.

# Generator Interconnections

- In 2003, the FERC issued Order No. 2003, which standardized procedures and agreements for interconnections of new large generators to the grid. The procedures became part of the pro forma tariff.
- In 2005, FERC issued Order No. 2006, which adopted procedures for interconnecting small generators (20 MW or less) to the grid.
- The interconnection procedures and agreement provide a standardized set of rights and obligations for transmission providers and generators, as well as timelines for compliance.



## Generator Interconnections (cont'd)

- Studying proposed generator interconnections became a major burden for transmission providers, who were overwhelmed with requests for interconnection, many of which will never be built.
- “Chicken and egg” issue
  - Delays in studies caused cost uncertainty for generators; thus, many generators dropped out of queue.
  - When a generator drops out of the interconnection queue, it may affect the interconnection costs of lower-queued generators.
- RTOs and RTO transmission providers have revised interconnection procedures to create greater certainty in process

# The Energy Policy Act of 2005

- Reaffirmed the need to protect native load.
- Directed FERC to implement incentives to construct transmission facilities.
- Gave FERC authority to require larger non-jurisdictional transmission providers to provide service at comparable rates and on terms and conditions that are comparable and not unduly discriminatory.
- Gave FERC backstop siting authority over transmission construction corridors designated by DOE.



# Order No. 890 – Background

- The FERC issued Order No. 890 in February 2007.
- The Commission asserted that incentives and opportunities for undue discrimination in transmission service continue to exist.
- However, the real impetus for the rule was the need to fine-tune the pro forma tariff after ten years of experience and the increasing importance of regional solutions to transmission congestion and reliability concerns.



## Order No. 890 - Themes

- Greater transparency in planning transmission systems and evaluating requests for service.
- Greater flexibility in provision of transmission service over constrained facilities.
- Greater timeliness and accountability in studying system upgrades needed to provide transmission service.
- Greater stability and certainty of transmission requirements, resulting from requiring customers to give advance notice of whether they will renew their service at the end of their contract terms.

## Order No. 890 – The Highlights

- Increases the transparency of calculations of ATC and TTC and requires consistent calculations of transfer capability at the boundaries between transmission providers.
- Requires transmission providers to meet tariff deadlines for studying transmission requests and imposes penalties \$500 per day per study on transmission providers that miss completion deadlines in more than 10% of studies for 2 consecutive quarters.
- Clarifies the terms of network service so that it is more comparable to bundled retail service.
- Requires firm point-to-point transmission service to be sold on an hourly basis in addition to daily, weekly, monthly and yearly service.

## Order No. 890 – The Highlights (cont'd)

- Transmission service can be resold at market-based rates.
- Requires regional planning of transmission construction that is open and transparent to customers.
- Requires redispatch service: Customers who otherwise would be denied service can agree to take service and pay the cost of redispatching generation to unload congested lines and allow the customers' energy to be transmitted.
- Requires conditional firm service: Customers who otherwise would be denied service can agree to take service subject to curtailment if specified conditions occur or for a specified number of hours per year.

# Improving Order No. 890

- New NOPR focusing on Transmission Planning and Cost Allocation issues.
- Goal is to improve effectiveness of Order No. 890 by:
  - Providing for broader regional planning of transmission development.
  - Enabling compliance with state and federal public policy requirements.
  - Eliminating an incumbent utility's right of first refusal to develop transmission facilities.

## Improving Order No. 890 (cont'd)

- Revising Transmission Cost Allocation to provide for:
  - Closer alignment of transmission planning and cost allocation; that is, costs are allocated to those customers expected to benefit from new transmission facilities.
  - Allocation of costs between transmission planning regions.



# Transmission Construction

- Most utilities have accepted the need for transmission construction to accommodate load growth and regional transmission service.
- 40,000 miles of new transmission lines needed for a national renewable portfolio of 15% was to be adopted. *NERC 2009 Scenario Reliability Assessment.*



# Transmission Incentives

- In Order No. 679, FERC adopted incentives for the construction of transmission.
  - ROE adders
  - 100% CWIP in rate base
  - Rate-base treatment of pre-commercial expenses
  - Hypothetical capital structure
  - Accelerated depreciation
  - Recovery of costs of abandoned facilities
  - Deferred cost recovery for utilities operating under rate freezes

## Transmission Incentives (cont'd)

- FERC has approved a number of proposals.
- Construction expense must represent a very substantial proportion of total utility cost.
- Utilities must demonstrate use of innovative technologies.
- Utilities must show that the incentives benefit customers, not shareholders.
- Granting some incentives (such as CWIP in rate base) may result in reducing risk and therefore reduce the allowed return on equity.

# Where Are We Now on the Evolutionary Scale?

- ❏ Power markets appear to have matured.
- ❏ Transmission service also appears to have matured.
- ❏ Pricing of transmission service continues to be controversial. Supporters of license plate pricing and postage stamp pricing are still fighting over the issue.



## Where Are We Now on the Evolutionary Scale? (cont'd)

- Construction of new transmission facilities will continue to receive lots of attention.
- Many transmission providers have switched to formula rates to avoid having to make rate filings every year.
- Increased focus on development of renewable resources.

