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#155

Missouri Public Service Commission

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November 19, 1997

Mr. Dale Hardy Roberts
Secretary/Chief Regulatory Law Judge
Missouri Public Service Commission
P. O. Box 360
Jefferson City, MO 65102

RE: Case No. EW-97-245 - Retail Electric Competition Task Force

Dear Mr. Roberts:

Enclosed for filing in the above-captioned case is an original and fourteen (14) conformed copies of the:

- Agenda for the November 17, 1997, Task Force meeting;
- Draft Market Structure Report as issued by the Market Structure/Market Power Work group;
- Direct Access Model presented by Missouri Industrial Energy Consumers;
- Statewide Poolco Model presented by Union Electric; and
- ISO Model presented by Kansas City Power and Light.

This filing was hand-delivered at the November 17, 1997, Task Force meeting to all members present. These materials were mailed this date to all members of the Task Force not in attendance at the November 17 meeting.

Thank you for your attention to this matter.

Sincerely yours,

Dana K. Joyce
General Counsel
(573) 751-8705
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DKJ:tmw
Enclosures
cc: Task Force Members

Agenda

Missouri Public Service Commission

Retail Electric Competition Task Force

Monday, November 17, 1997

10:00 - 10:15	Welcome and Meeting Overview
10:15 - 10:30	Review of Draft Minutes from October 14 Meeting
10:30 - 11:30	Presentation of Draft Market Structure/ Market Power Report
11:30 - 12:00	Questions/Answers
12:00 - 1:30	Lunch
1:30 - 2:30	Questions/Answers (Continued)
2:30 - 2:45	Process Review for Draft Market Structure Report Final Report Date Extension
2:45 - 3:00	Next Meeting/Meeting Wrap-up and Close

Direct Access Model

Presented by

Missouri Industrial Energy Consumers

A DIRECT ACCESS MARKET STRUCTURE FOR RETAIL COMPETITION

Missouri Public Service Commission
Retail Electric Competition Task Force
ER-97-245

November 17, 1997

Presented by:
Missouri Industrial Energy Consumers

Also Supported by:
ENRON Corp.
QST Enterprises, Inc.

BRUBAKER & ASSOCIATES, INC.
1215 Fern Ridge Parkway
St. Louis, Missouri 63141

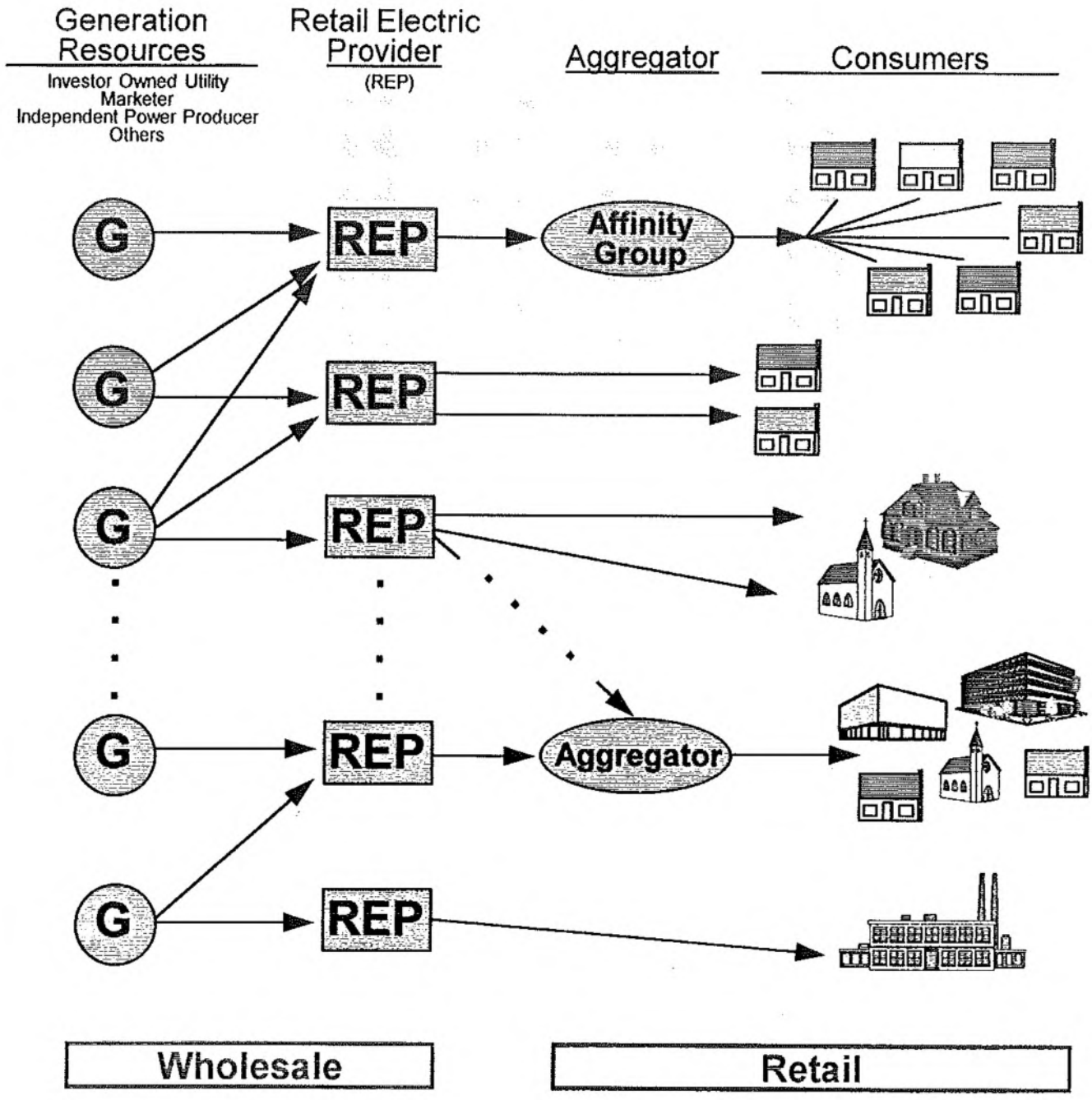
What is Retail Competition?

- There are four basic industry segments
  - Transmission
  - Distribution
  - Generation
  - Metering, Billing, Collection and Customer Service
- Institution of retail competition recognizes that Generation, Metering, Billing, Collections and customer service segments of the industry are no longer natural monopolies

Who are the players in Retail Competition?

- **Consumers, the end-users of electric power**
- **Affinity Groups**
- **Load Aggregators**
- **Retail Electric Providers (REPs)**
- **REPs would be certified by the Missouri Public Service Commission and would be required to meet appropriate standards and to follow approved practices for billing, payment, disconnect, etc.**

A DIRECT ACCESS MARKET STRUCTURE
FOR RETAIL COMPETITION



Characteristics of Retail Competition

- Under Retail Competition consumers of electricity will be allowed direct access to their choice of suppliers for Generation and the other competitive services
- Retail Competition requires each seller to compete for the business of each retail consumer or voluntary group of consumers
- Retail Competition provides incentives for suppliers to offer consumers new products and innovations that would not otherwise be available
- Retail Competition would also allow providers of financial instruments that help manage price risk to offer their products directly to consumers

How would Retail Competition work?

- REPs would compete with each other for consumers in the following two manners
  - Standard Offers of Service
  - Individually Negotiated Contracts
- Consumers would be able to aggregate their needs in Affinity Groups to gain bargaining power with sellers
- Consumers could also subscribe to the services of a Load Aggregator who will negotiate with Sellers on behalf of its subscribing consumers
- Consumer aggregation can and will likely cross traditional service class lines
  - Residential Subdivisions and Shopping Centers
  - Companies and their employees
- Consumer has various billing options

How would consumers who chose not to choose, or who have special needs, be addressed under Retail Competition?

- **There are several options available under Retail Competition to handle consumers who chose not to choose, including**
  - **Allocation of those consumers to all REPs based on the sales by REPs to others in the same customer class**
  - **Placing those consumers out to bid as a group to REPs**
- **There are also several options available under Retail Competition to handle consumers with poor credit history or other characteristics that may need special attention, including**
  - **Allocation of those consumers (along with amounts collected today in the rates of utilities to help offset costs of serving these customers) to all REPs based on their sales to others**
  - **Compensating the incumbent utility to serve these consumers**

How would reliability be maintained under Retail Competition?

- The incumbent utility would continue to operate and plan the distribution system
- An entity called the Independent System Operator (ISO) would operate and plan the transmission system
- They ISO would also be responsible for maintaining overall system reliability
- To provide for overall system reliability, the ISO will offer FERC regulated ancillary services to those REPs who cannot balance their generation to their customer load moment-to-moment
- The REPs who do not perform their own moment-to-moment balancing would still be required to schedule their generation hour-to-hour to match the forecast of their aggregate customer load
- To ensure the sum of REP load forecasts is equal to the ISO's forecast of overall system load plus losses, the ISO will privately post load forecasts for each REP on a high performance electronic network
- The ISO, through its provision of moment-to-moment balancing service, would backstop any REPs that fail to deliver sufficient power to match their forecasted load

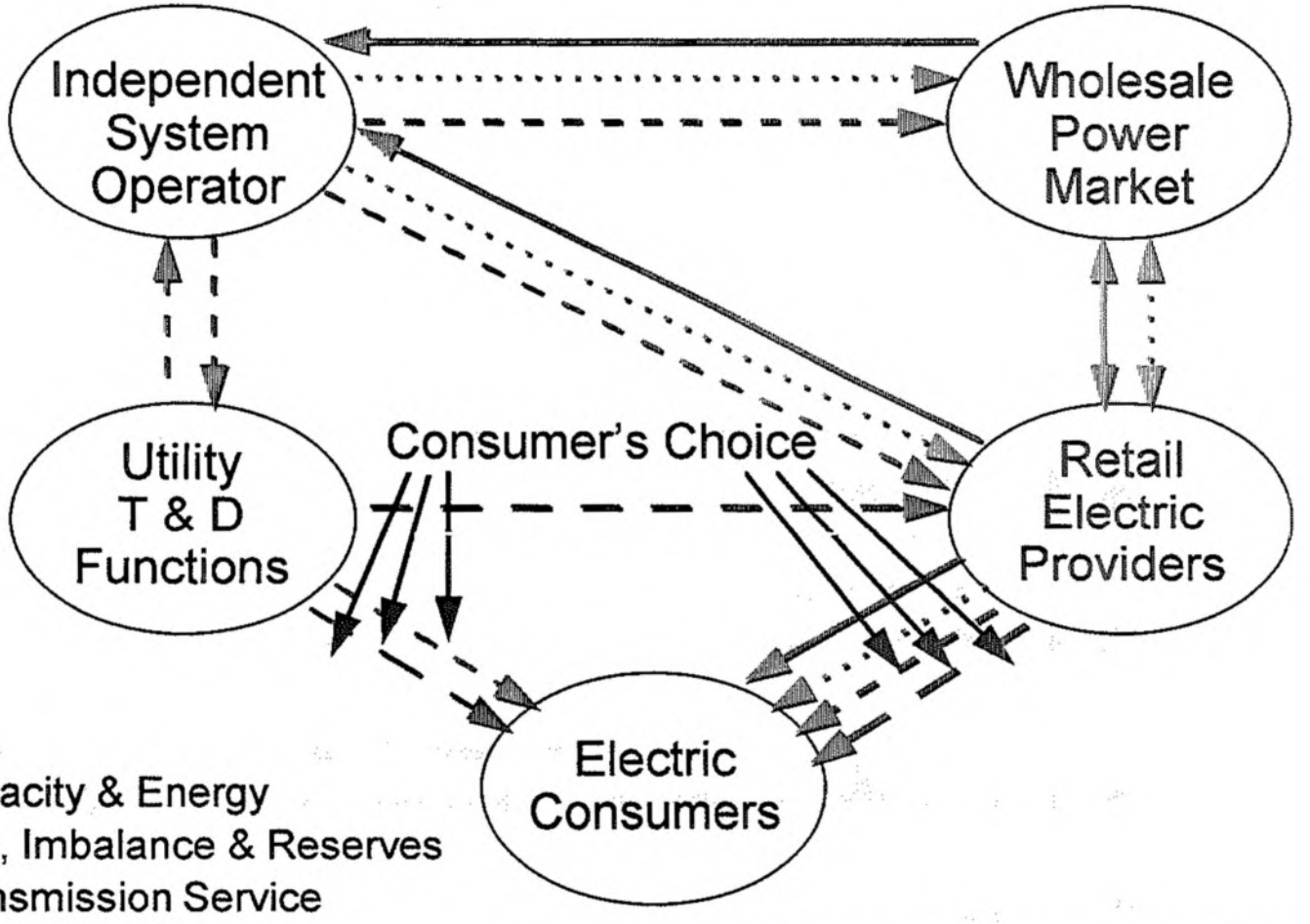
How would reliability be maintained under Retail Competition? (continued)

- Any REP who fails to deliver sufficient power to match its load would be subject to severe penalties imposed by the ISO
- The combination of penalties for REP shortfall and the desire for increased market share would work together to preserve reliability
- It should be noted that the existence of an ISO is not a prerequisite to retail competition as the incumbent utility's functionally separated transmission function can conduct the tasks of the ISO in the interim

How would the difference between actual and forecasted REP load be resolved?

- **After the fact, the ISO will publicly post its cost of energy for providing moment-to-moment balancing along with each REP's energy imbalance**
- **The REPs will be granted a limited amount of time to resolve these imbalances by trading with each other**
- **REPs who remain surplus in delivery will be paid for that over-delivery by the ISO at the ISO's energy cost, less a discount**
- **REPs who remain deficient in delivery will pay the ISO for that under-delivery at the ISO's energy cost, plus a premium**

Direct Access Market Structure



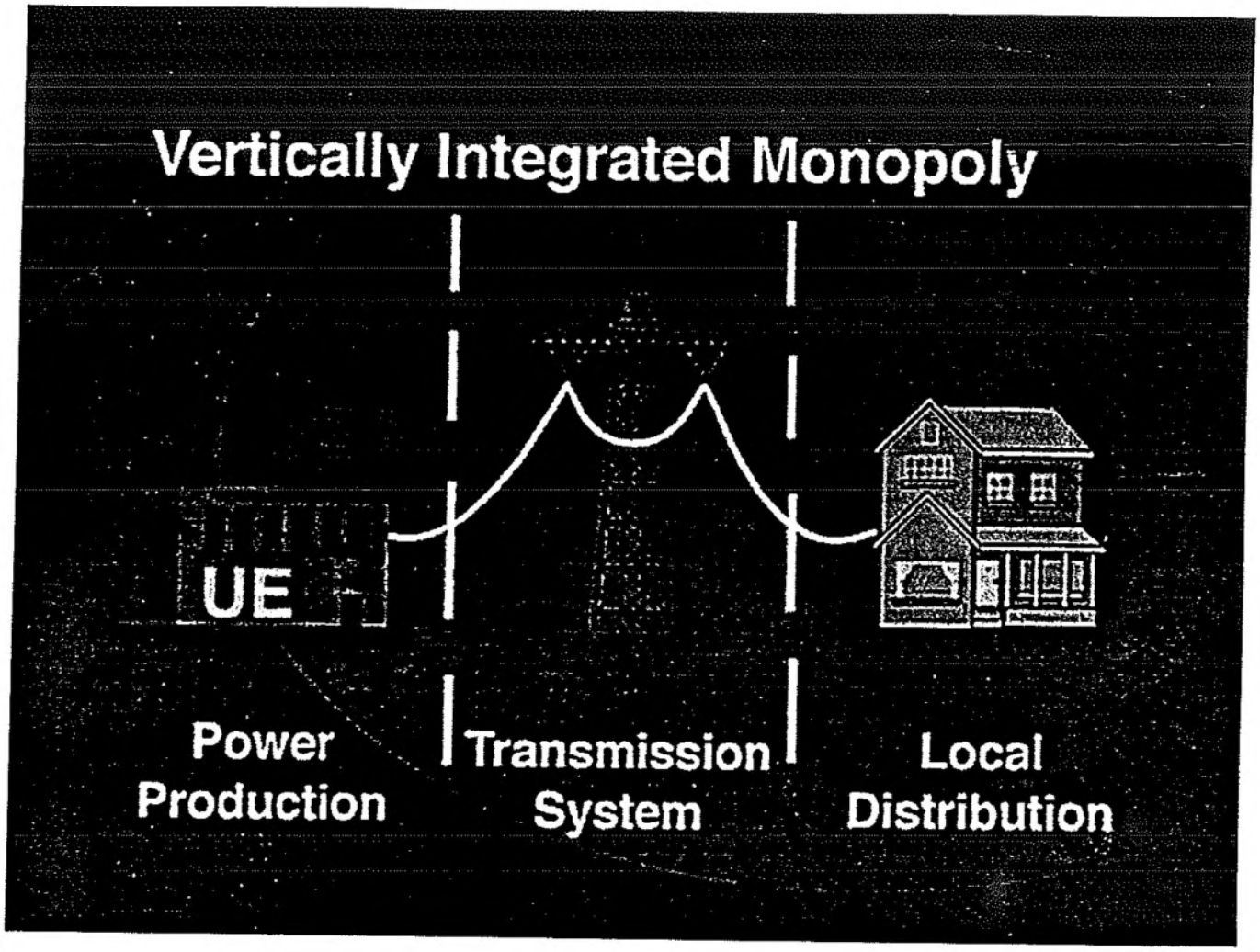
Note: Individual consumers or groups of consumers may also request to be certified as REPs

Missouri Industrial Energy Consumers

Statewide Poolco Model

Presented by

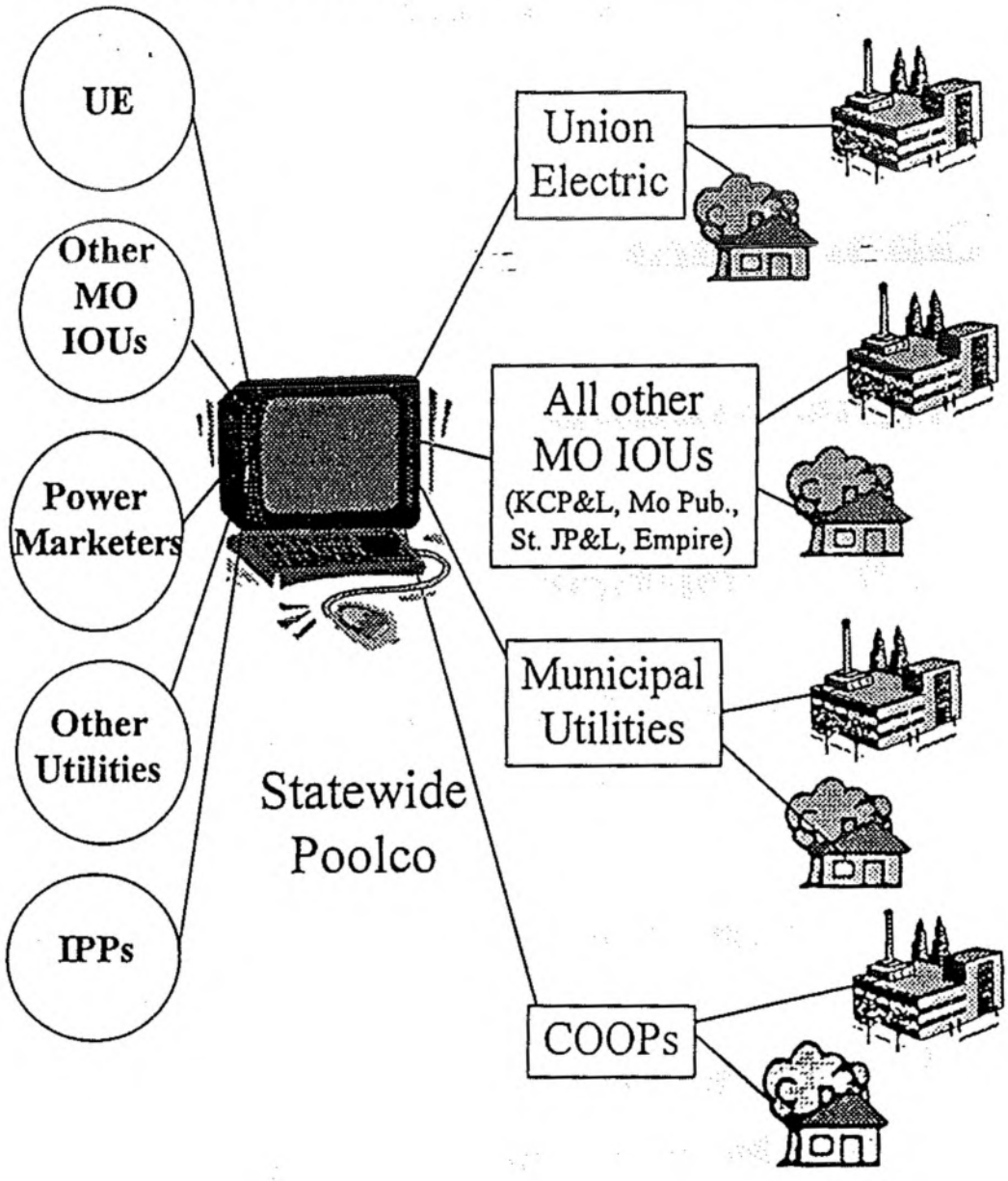
Union Electric


Vertically Integrated Monopoly
UE
Power Production
Transmission System
Local Distribution

Five Components of the Business

1. Generation
2. Transmission:
   - Distribution:
     3. "Wires Business" (Local Distribution Utility)
     4. Retail Electric Provider (REP)
     5. Customer Services (Ownership of Meters, Meter Reading, Customer Billing, etc.)

Statewide Poolco Model

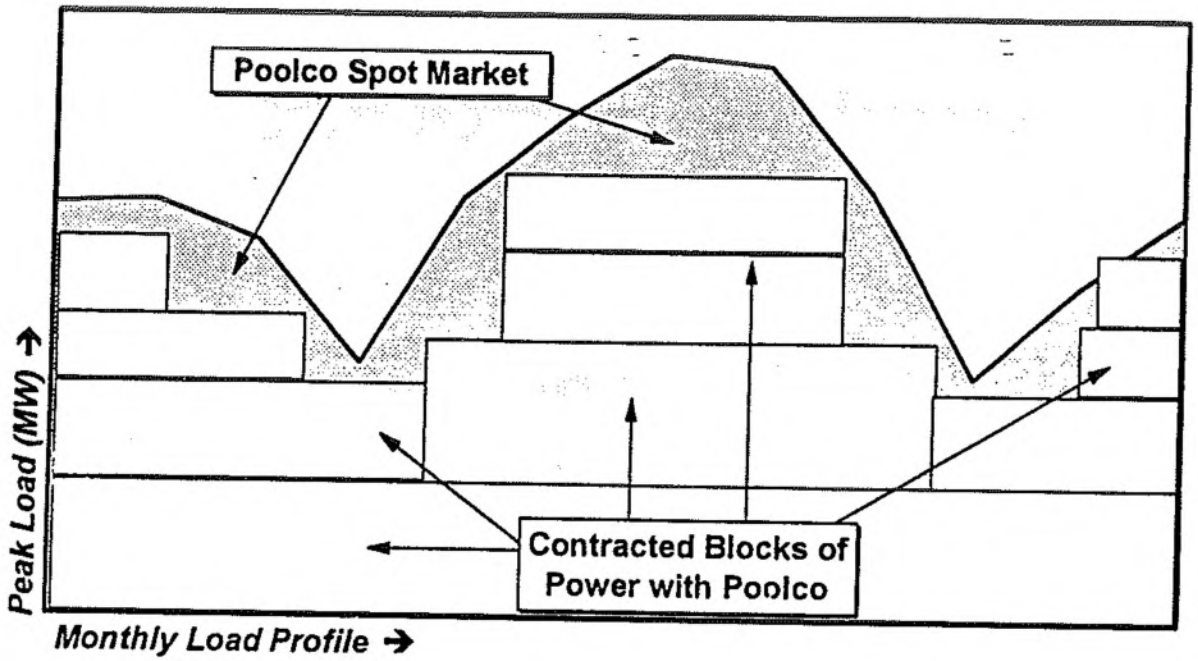


Steps in Getting Power From Supplier to Customer

- Each "distribution utility" submits load forecasts to Poolco.
- Poolco adds up all the forecasts and solicits bids to supply the total projected load of all distribution utilities.
- Generators, marketers, and other suppliers submit bids to supply the load (or part of the load).
- Poolco selects the low bidders and coordinates the scheduling of power.

- Power flows over utility transmission and distribution lines.
- Customers are billed by the distribution utility.
- Customers pay distribution utility, the distribution utility pays Poolco, and the Poolco pays the supplier for power used.

Solicitation of Bids by Poolco



How Prices to Suppliers Would be Determined:

Bid Price or Market Clearing Price

Prices Paid by Distribution Utilities to Poolco:

Weighted average cost of the price paid by Poolco for every hour.

Prices Paid by Customers of the Distribution Utility

Present Formula

[Generation Costs] plus Transmission Costs plus Distribution and Customer Service Costs.

Poolco Formula

[Cost of Power Purchased From Poolco] plus Transmission Costs plus Distribution and Customer Service Costs.

Note

Cost of power purchased from Poolco could be charged in a manner similar to the "Purchased Gas Adjustment" in the natural gas business.

Potential Impact on Customers (Compared to Direct Access Model)

- Average price of electricity with Poolco equal to or less than under bi-lateral model.
- Any benefits of competition would be shared by all customers, not just large customers or those who are more sophisticated.
- Poolco minimizes marketing costs.
- Poolco eliminates the possibility of lost gross receipts taxes.
- Customers do not choose the supplier of their electricity.

- All customers would be allowed to enter into financial "contracts for differences."
- Poolco eliminates (or minimizes) "hassle factor" of mass marketing.
- Poolco simplifies billing.
- Poolco spreads the risk of non-delivery of power by a generator.
- Poolco eliminates the need to certify and monitor "Retail Electric Providers." Poolco model minimizes customer confusion and the need for consumer education.
- Poolco makes it easier to maintain control of system reliability.
- Poolco minimizes other infrastructure problems.

ISO Model

Presented by

Kansas City Power & Light

Primary Functions of an ISO Under Hybrid Structure

- **Provides non-discriminatory access for generators to the market**
- **Create a spot market to support two types of trading:**
  - Wholesale market purchases
  - Bilateral contracts

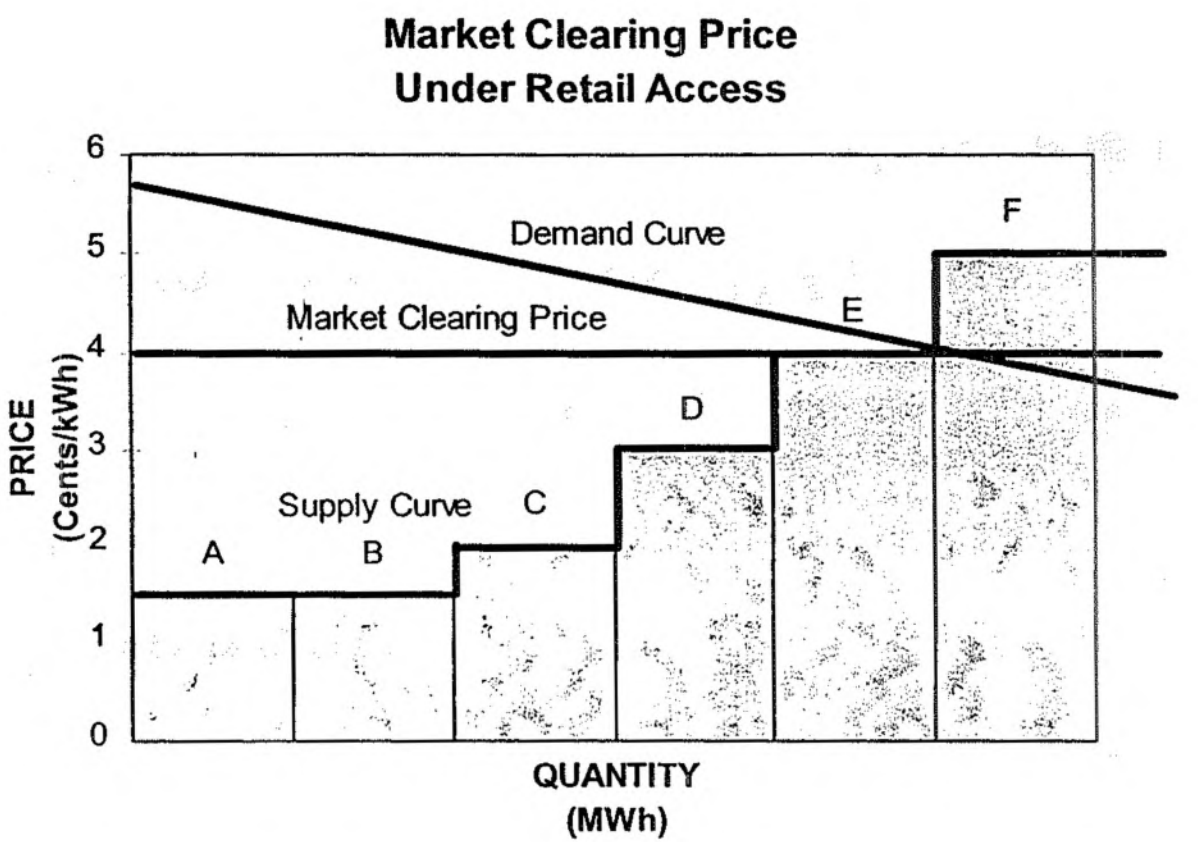
Types of Trading

- **Bilateral Trade - contract between the generator and customer**
  - Physical bilateral - ISO will coordinate generation for contract
  - Financial bilateral - Contract for Differences (CFD)
- **Spot Market Purchases**
  - Purchases by marketers for resale
  - Purchase by local distribution company as provider or as provider of last resort

Creation of a Spot Market

- ISO accepts bids from generators willing to sell power
- Determines the least cost dispatch to meet loads not served by bilateral contracts
- Bids day ahead for each hour (or half hour)
- Prices locationally based (California has 4 price zones)

Market Clearing Price



Customer Choices

- Aggregator
- Marketer
- Local distribution utility (LDU)
- Power exchange (PX)
- Other Retail Electric Providers (REPs)

The Obligation to Serve

- **Obligation to serve is now an obligation to connect**
- **LDU supplies power for:**
  - Customers who opt not to choose
  - Customers who can not get power from an alternative REP
- **LDU purchases this power from the PX**

ALTERNATIVE MARKET STRUCTURES FOR RETAIL COMPETITION

A DRAFT REPORT TO THE MISSOURI PUBLIC SERVICE COMMISSION'S TASK FORCE ON RETAIL COMPETITION

FROM THE TASK FORCE WORKING GROUP ON MARKET STRUCTURE AND MARKET POWER

NOVEMBER 17, 1997

FORWARD

This draft report on alternative market structures for retail competition represents the efforts of Market Structure and Market Power working group of the Missouri Public Service Commission's Task Force on Retail Competition. The format of this report is that each proposed market structure should have the following four major sections.

A. Description of the Structure

This section includes a brief description of the market structure, followed by a detailed description of how the structure will work in regard to the various business units involved. These business units include: generation; transmission; distribution; retail electric provider; and customer services.

B. Potential Issues

This section includes a list of issues that must be resolved in order for the proposed market structure to function effectively.

C. Potential Structural Impacts on Utilities

This section includes a list of changes (impacts) that will likely need to be made to the existing structure of the vertically integrated utility companies were the proposed market structure to be implemented.

D. Potential Impacts on Consumers

This section includes a list of changes which end-use consumers are likely to face if the proposed market structure were to be implemented.

This is a draft report of the working group, not a final report of the Task Force. As such, its purpose it to provide guidance to the Task Force's other working groups in the development and evaluation of their issues. In order to produce a final report for the Task Force, feedback from the other working groups and the Task Force is anticipated. In this respect, it should be noted that this report was intentionally designed not to include an evaluation of the alternative structures, such as a listing of benefits or detriments to utilities or consumers. Moreover, the evaluations of the proposed structures are the tasks of each of the working groups regarding issues related to market power, public interest, stranded costs, reliability and legal considerations.

A BRIEF GLOSSARY OF CONCEPTS AND TERMS

Utility Business Units refers to the separate business unit functions of the vertically integrated utility.

(1) ***Generation*** is the function of producing electricity and delivering that power to the interconnected transmission grid at the required voltage level.

(2) ***Transmission*** is the function of transporting electricity at high voltage from the generators to the local distribution systems.

(3) ***Distribution*** is the function of delivering electricity at low voltage from the transmission system to the end-use consumer.

(4) *Customer Service* is the function of metering and billing the end-use consumer.

- The word ***customer*** is used in the context of a specific business unit providing services to an end-use consumer.
- The word ***consumer*** is used in the more general context of an end-user of electricity that can be served by any number of alternative competitors.

Business Entities refers to firms that will provide the various disaggregated utility functions, as well as new functions within a competitive market.

(1) ***Generator*** is the firm that produce electricity for sale in a competitive market for electricity. These firms might be what is currently a part the vertically integrated utility, or might be completely independent of any other utility functions.

(2) ***Transmission Owning Utility (TOU)*** is the firm that owns transmission facilities. Currently, transmission facilities are owned by utility companies.

(3) ***Independent System Operator (ISO)*** is an entity that operates a regional network of transmission facilities, but does not own those facilities. It is independent of the utilities in the sense that the utilities are not able to control the operations of the ISO.

(4) ***Local Distribution Utility (LDU)*** is the utility business unit that provides the wires services (transmission and distribution) to end-use consumers, may provide customer services and may provide certain limited generation services. The LDU's services will be provided to end-use consumers at regulated rates.

(5) ***Retail Electric Provider (REP)*** is an entity that sells electricity to end-use consumers, buys or procures electricity from generators, and arranges for the transmission of electricity with either the TOUs or the ISOs. In effect, REPs are the retailers of electricity. In certain market structures, the REP may also provide customer services. If a vertically integrated utility chooses to be an REP, that function will be provided by a separate entity from the LDU.

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APPENDIX
FERC ORDER 888 ISO CRITERIA A-1

CHAPTER 1
ELECTRIC TRANSMISSION AND DISTRIBUTION STRUCTURES AND OTHER AREAS OF AGREEMENT FOR RETAIL COMPETITION[1]

A. Description of the Structure

The restructured electric industry will likely have a regional transmission system operated by an Independent System Operator (ISO). Distribution service will continue to be provided by the Local Distribution Utilities (LDUs) that are currently operating those systems. Transmission pricing will be regulated by the Federal Energy Regulatory Commission (FERC), and distribution rates will continue to be set by the regulatory authorities that are currently setting those prices.

(1) The Generation Business Unit

In this chapter of the report, the assumption is simply made that there will be some form of competitive market for generation. Whether this involves a poolco, direct access to alternative Retail Electric Providers (REPs) or a power exchange does not impact the structure and conclusions reached in this chapter regarding the transmission and distribution of electricity. It is therefore assumed in all of the structures that providing the generation of electricity will no longer be the responsibility of the LDU, but will become a competitively supplied commodity.

One characteristic of all of the proposed competitive market structures for generation is that there will be locational differences in electric prices at times when reliability restrictions on the

[1] This chapter represents a part of the industry restructuring on which the Market Structure and Market Power Working Group is in agreement.

transmission system prevents the unconstrained flow of electricity. For example, when less expensive generation upstream of a constrained transmission interface must be replaced by more expensive downstream generation, the downstream price for electricity will be higher than the upstream price.

(2) The Transmission Business Unit

Transmission will remain a monopoly function. It is likely, although not mandated by the FERC, that Transmission Owning Utilities (TOUs) will turn over operational control of their transmission assets to an ISO.[2] While it is also possible that TOUs may continue to operate and control their transmission systems,[3] the remainder of this section will focus on a description of the role of the ISO functioning within a structure of a fully competitive market for generation.

Any ISO would likely be at least as large as the existing North American Electric Reliability Council (NERC) regions, if not larger, and provide open, non-discriminatory access to all competitive generators. ISOs will be regulated by the FERC, with pricing for transmission services set by the FERC.

The ISO will have a pool-wide transmission tariff that all users of the transmission system will pay.[4] There may be additional charges for use of parts of the transmission system when those parts

---

[2] This is not to say that there is a consensus of the working group that an ISO is required in order to have retail competition. This question will be addressed as the working group considers the question of market power.

[3] Until an ISO is created and operational, the transmission functions of the ISO would be performed by the functionally separated transmission business unit of the transmission-owning utility.

[4] This tariff may be either a "postage-stamp" (one price), a "license plate" (zonal prices) or a "distance sensitive" (megawatt-mile) rate.

of the transmission system are congested.[5] In order to encourage the most efficient scheduling of generation to meet loads, both the pricing and clearing of transmission congestion may be based on the opportunity cost of generation. For example, either firm capacity reservations for transmission (CRTs) or transmission congestion contracts (TCCs) could be used for providing market participants with a firm right to use the transmission grid. When congestion occurs, these firm rights could be traded based on the opportunity costs of various generators and end-use consumers whose actions can clear the congestion. The exact form of the markets for firm transmission rights will be proposed by the ISOs, with final approval by the FERC.

The ISO will follow NERC and regional council reliability standards and emergency procedure standards as they will be responsible for the short-term reliability of the system. Other key ISO responsibilities will likely include:

- Coordination of the scheduling of generation to meet load (supply and demand);
- Authority to redispatch generation for the purpose of maintaining system integrity or relieving transmission constraints;
- Authority to approve or reject proposed transactions solely based on reliability considerations;
- Authority to curtail transactions only in order to maintain reliability;
- Procuring ancillary services for customers who do not provided their own; and
- Providing information on transmission pricing and availability.

Maintenance of the transmission system will likely be performed by the TOUs, but will be scheduled with consent from the ISO. Planning for upgrades and new lines will also be done by the

[5] Congestion occurs on part of the transmission system when the configuration of generation and load is such that not all transactions can take place without threatening the security of that part of the system.

ISO and TOUs. The ISO will likely have the authority to order the construction of needed transmission facilities.

(3) The Distribution Business Unit

Distribution will remain a monopoly function. The LDU will retain ownership, planning, construction, maintenance and storm restoration responsibilities. Distribution rates will continue to be set by the Missouri Public Service Commission or appropriate governing body, but may move from the traditional rate-of-return-based regulation to performance-based regulation.[6] Just as today, each incumbent LDU would have the obligation to physically connect each customer in its service area to the distribution system, assuring continued availability of electric service to all customers. Billing for distribution services could be done either by the REP or the LDU.

(4) The Customer Service Business Unit

There is no general agreement within the working group on the structure for the customer service business unit that deals with metering, meter reading and billing customers. It should be kept in mind that this part of the utility business is being treated as functionally separate from the LDU's provision of distribution services. The point of separation between these functions is at the LDU's side of the customer's meter.

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[6] Performance Based Regulation is a mechanism that attempts to link rewards (generally, profits) to desired results or targets rather than to the LDU's cost of service. PBR allows LDUs with better performance to earn greater profits.

B. Potential Issues

1. Market Power Problems. Market power is the ability of a particular seller or group of sellers to control the price of electricity in a specific geographic market, and to create and maintain effective barriers to entry into that market.

   a) A properly designed and implemented ISO should alleviate vertical market power problems that would stem from existing utilities preventing competitors from having comparable use of the transmission system. Because the FERC is wanting to move to market-based pricing for wholesale power, the vertical market power issue related to open access on the transmission system will likely be addressed at the federal level. Other vertical market power questions will need to be addressed by the state.

   b) Horizontal market power exists when one entity owns a substantial portion of the generating capability in a region, and that region has insufficient import capability to allow a sufficient level of generation alternatives for robust competition.[7] At the retail level, the extent and mitigation (e.g., divestiture - the sale of generation assets by the LDU) of horizontal market power will need to be addressed by the state.

   c) Alternative remedies to requiring divestiture of generation will require that the specific situation be analyzed, including transmission upgrades, bidding restrictions, and the introduction of new entrants.

2. ISO-Related Issues. If there is an ISO, then the following transmission related issues will need to be resolved at the federal level.

   a) Governance (e.g., interested vs. disinterested board of directors for the ISO)[8];

   b) Assignment of responsibilities between the ISO and transmission owners for the planning, operation and maintenance of the transmission system;

   c) Authority to order the construction of transmission facilities;[9]

---

[7] Robust competition exists in a market when any given supplier must price its product based on the prices set by competitors of identical products or products that are close substitutes.

[8] For the interested board there are additional issues related to the balance of representation for the various interested parties.

[9] The FERC has regulatory authority over the ISO, but many states have regulatory authority over the citing of any new transmission facilities.

d) Responsibility to build new transmission facilities;[10]

e) Pricing of transmission; and

f) Funding of the ISO.

The FERC has provided guidance in these areas through its eleven ISO principles,[11] as well as in its orders approving the formation of ISOs.

3. Settlement Process. If there is an ISO, it will have oversight for the settlement process, involving payments for differences between scheduled and actual generation, as well as actual and forecasted usage. If there is not an ISO, then there will need to be some alternative form of clearing house to perform this function.

4. Must-Run Generation Units. The functional need, rates for compensation, and operational control will need to be determined for generation units that must run for system reliability reasons.

5. Reciprocity. Some states are considering allowing out-of-state generators to participate in retail markets only if those generators' home state reciprocate. It will have to be determined whether to restrict the ability of out-of-state generators to participate in Missouri retail markets if the state in which the generator is based does not have retail markets in which Missouri generators can participate. In addition, to the extent that Missouri chooses a market structure that, for reasons other than reciprocity, is not open to all generators, this may limit the ability

[10]This is of particular concern when the TOU in the area needing the additional transmission facilities does not want to build them. Thus, this issue could be restated as: Having the right incentives for building new transmission facilities.

[11]These eleven principles as stated in FERC Order 888 have been reproduced as an appendix to this report.

of Missouri generators to participate in other states' markets. There may also be federal limitations placed on reciprocity provisions.

6. Municipal and Cooperative Participation. The state legislature needs to determine whether municipal and/or cooperative electric systems will be exempted from retail competition and to what extent the exempted entities that have generation would be allowed to participate in the competitive market for retail load.

7. Standards for Firm Service. The question of potential changes in generation reliability from moving to a competitive supply of electricity will need to be addressed at both the state and federal level. This may involve setting standards for providing what is now called firm service.

C. Potential Structural Impacts on Utilities

1. Corporate Restructuring. Generation will be functionally separated from transmission and distribution. To some extent this has already occurred under FERC Orders 888, 888-A, 889 and 889-A. The degree of separation - from simply having a separate division within the existing utility to having a separate subsidiary to selling off the generation assets of the utility - may need to be determined at the state level.[12]

2. Obligation to Serve. With generation open to competition, the incumbent utilities will no longer have the obligation to plan for and build new generation. The obligation of the LDU to serve will be redefined as an obligation to connect customers to the grid and deliver energy at the market price. If the LDU takes on the role as the provider of last resort, then its

[12] The working group will consider this issues of the degree of separation in its future discussion of market power.

obligation to serve will be to purchase sufficient generation in a competitive wholesale market to meet the electricity requirements of those customers who opt not to choose or are unable to obtain service from an alternative REP.

D. Potential Impacts on Consumers

1. Unbundled Rates for Transmission and Distribution. With retail competition, and the corporate unbundling of generation, there will also be a parallel rate unbundling for consumers. The unbundling of transmission rates (including ancillary services) will be done at the federal level, under the jurisdiction of the FERC. However, the FERC has allowed the states a role in initially making a determination of which facilities are transmission versus distribution in function.[13] At the retail consumer level, rates for distribution will need to be set out separately. However, in all of the alternative structures that follow, it is possible for end-use consumers to be offered either a bundled rate on a single bill, or an unbundled rate on a single bill.[14]

2. Obligation to Supply Electricity. With the supply of electricity becoming completely a competitive market function, there will no longer be an obligation to supply customers with all the electricity they want at a fixed price. If, in the short run, the supply of generation cannot increase in response to price increases, the limited supply of generation will be allocated by the rising market price to customers that place the highest value on their use of electricity and are willing and able to pay. It is expected that the times when the prices for electricity will be

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[13] The FERC has given guidance on this issue in what it calls the seven factor test.

[14] In the poolco structure, the customers bill can be segmented into the various components for purposes of information, but not for the purposes of customer choice.

increasing in response to the inability to expand the short-run supply of generation will primarily occur during the peak (highest) hours of demand.

3. Generation Reliability. End-use consumers may see a different level of generation reliability than exists under the current system which uses designed levels of planning reserves for generation. In addition, a variety of level of firmness options for accepting different levels of generation reliability will likely need to be made available to end-use consumers.

CHAPTER 2
A DIRECT ACCESS MARKET STRUCTURE FOR RETAIL COMPETITION[15]

A. Industry Structure

This report discusses a retail competition structure under which electric consumers would have direct access to REPs. Under this structure, the generation, REP and customer service sectors would be competitive. Transmission and distribution services would continue to be provided under regulated utility tariffs. (The diagram attached at the end of this chapter shows the key market entities and their relationships in terms of the flows of information, electricity and compensation.)

The principal difference between this structure and the others proposed is that this structure would not include any form of institutionalized power exchange or pool. Rather, each consumer and each seller can contract individually for a customized arrangement that meets each party's needs. In addition, standard offer packages will be available directly or through aggregators for those consumers who do not wish to negotiate an individual arrangement with an REP.

While the direct access market structure does not include a formal power exchange or pool, it does require that REPs schedule energy to meet their forecasted load. To ensure that REPs maintain hour-to-hour load balancing, penalties would be applied to REPs who fail to deliver power to match their hourly load forecast.

To the extent REPs cannot perform their own moment-to-moment load balancing (e.g., through dynamic scheduling or other means), this balancing will be provided as an ancillary transmission service

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[15] Missouri Industrial Energy Consumers, Enron Corp., and QST Enterprises, Inc. provided presentations and the initial drafts for the direct access structure described in this chapter.

using the Federal Energy Regulatory Commission's (FERC's) pro forma open access transmission tariffs. In addition, to the extent REPs do not provide their share of operating reserves, these services would also be provided using the FERC 's pro forma open access transmission tariff.[16]

(1) Generation Business Unit

Under a direct access structure, REPs would acquire supplies through some combination of outright ownership of generation and bilateral contracts for supplies. Bilateral contracts for supplies would be obtained by REPs from the wholesale market. Suppliers in the wholesale market would sell to REPs either on an unregulated basis, under cost-based rates regulated by FERC, or under market-based rate authority granted by FERC. REPs would obtain wholesale price discovery through futures exchanges, such as those currently operated by the New York Mercantile Exchange (NYMEX), surveys such as those prepared by Power Markets Week, and electronic transaction matching exchanges, such as the one operated by the Continental Power Exchange (CPEX). Existing electric utilities would be required, at a minimum, to functionally separate their generation from their other activities, such as transmission, distribution and retail services.

(a) Forecasting Load, Planning Capacity and Scheduling Generation

REPs would be responsible for scheduling supplies to meet the hourly forecast of their load responsibility. REPs need to have a reasonable forecast of the characteristics of the loads for which they are responsible. In addition, the sum of the individual REP forecasts must equal the ISO's

[16] If an Independent System Operator (ISO) is implemented, then the forecasting, scheduling, balancing, voltage support, losses and operation reserves would be arranged by the REPs with the ISO. If an ISO is not implemented, then these arrangements would be made with the functionally separated transmission business unit of the incumbent utility.

forecast for total system load. Utilities today forecast their own load on an aggregate basis, both for the near-term and the long-term . These forecasts are generally developed by combining load research (sample) data for groups of smaller customers with customer-specific information for large loads. To facilitate retail access, the ISO would develop and post aggregate load forecasts for each REP.[17] These forecasts would be posted privately for each REP on a high-performance electronic network. On a rolling basis, these postings would be as follows:

- Peak load, minimum load and load factor seasonally for the next ten years
- Peak load, minimum load and load factor monthly for the next 12 months
- Peak load, minimum load and load factor weekly for the next 12 weeks
- Peak load, minimum load and load factor daily for the next 30 days
- Hourly load for the next 168 hours

These forecasts would be updated hourly by the ISO.

REPs would use their hourly load forecasts to dispatch their supplies and enter into spot bilateral wholesale transactions as needed to meet these forecasted loads in future hours. Consistent with the FERC pro-forma, open access transmission tariff, REPs would have until 20 minutes prior to the hour of operation to adjust the delivery schedule of their supplies to match their updated hourly load forecasts. To maximize the likelihood that REPs as a group would maintain hour-to-hour system balance, REPs would be subject to severe penalties for under delivery or over delivery versus their forecasted load. To the extent REPs as a group fail to maintain hour-to-hour system balance, the ISO would correct for this mismatch as part of its provision of moment-to-moment

[17] It is anticipated that after the initial startup of retail competition REPs would be permitted to forecast their own loads. However, it would be necessary for the REP to provide to the ISO a forecast of its load in the same form that the ISO would have provided it to the REP. In addition, penalties would most likely need to be established for those REPs who consistently forecast their load less accurately than the ISO.

system balancing.[18] REPs would use their daily load forecasts to commit[19] their supplies and enter into daily bilateral wholesale transactions in order to have sufficient dispatchable supplies available to match their forecasted load on future days. REPs would schedule maintenance on their supplies and acquire resources from the wholesale market on an intermediate-term basis to ensure they will have sufficient supplies on hand to meet their forecasted weekly and monthly loads. REPs would construct new generation facilities, install load management systems (to shave the peak of their loads), manage the interruptibility provisions of their retail commitments, and/or contractually acquire resources on a long-term basis from the wholesale market to ensure they have supplies sufficient to meet their forecasted seasonal loads in future years. The incentive for REPs to perform this generation planning on a day-to-day through year-to-year basis is that if they are caught "short" in the future, they would be subject to penalties for not delivering power to match their hourly forecasted loads. The intent of these incentives is to provide for planned generation reserves without any other requirement beyond the penalties.

(b) Balancing Moment-To-Moment Generation With Load and Other Ancillary Services

For moment-to-moment load balancing, REPs should have the option to install the equipment necessary to dynamically schedule part or all of their generation to their load. To the extent an REP does not use dynamic scheduling, it would be required to purchase Regulation and Frequency

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[18] The ISO also would have the ability to enter into call options with consumers to interrupt load instantaneously in order to cover severe generation deficiencies. The costs to enter into the call options could be included as part of the rate for Regulation and Frequency Response Service.

[19] A major portion of installed generating capacity in Missouri is powered by steam turbines fed by a boiler fired by coal, oil or natural gas. Generally, steam powered generation must be brought on-line several hours before it can be dispatched to meet hourly loads. In addition, when steam powered generation is taken off-line, several hours must pass before that generation can be brought on-line again. The commitment of generation is the process of placing steam powered generation on-line in anticipation of needing power from that generation in future hours.

Response Service, as well as Energy Imbalance Service, from the ISO.[20] A REP can satisfy its requirements for these services either completely, or in part, by placing under the control of the ISO the generating capacity with Automatic Generation Control (AGC) capability that it has acquired.

REPs will need to purchase their share of operating reserves from the ISO. However, REPs may satisfy their requirement to purchase these services either completely, or in part, by turning control of generating capacity capable of providing these reserves over to the control of the ISO. REPs will also need to either provide for transmission losses or purchase them from the wholesale market. In addition, to the extent the REP cannot provide its own dynamic voltage support, they will need to purchase Reactive Supply and Voltage Control for Generation Sources Service from the ISO.

In order to provide the moment-to-moment balancing and other ancillary services, the ISO would only need to acquire a minimal amount of generating resources. The ISO could acquire these generation resources through RFPs issued to the marketplace.[21] For the generation capacity required for moment-to-moment system balancing and other ancillary services, the ISO could contract to reserve capacity in the form of a call option to take electricity only when it is required. Energy would only be taken from this reserve capacity when the ISO needs it to balance the system or provide power for the other ancillary services. The ISO would recover its costs for both capacity and energy through its FERC regulated ancillary service rates.

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[20] One of the responsibilities of the ISO is to maintain system reliability. For convenience, some of these reliability functions are mentioned in this section, rather than in the next section on transmission.

[21] However, if certain generation is uniquely situated to provide dynamic voltage control, the rates under which such reactive power and voltage control is sold to the ISO should be cost-based reflecting the natural monopoly status that generator has in providing the service.

(c) Settlements on Energy Imbalances

In the direct access model, there is a need for REPs to clear their energy imbalances caused by actual loads being different from forecasted loads. Settlements of energy imbalances could take place on a day-to-day basis (first settlements market) for differences between hourly loads and hourly load forecasts, and will need to take place on a monthly basis (second settlements market) for meter reading delays for end-use consumers on hourly meter reading..

The first settlements market would be used to clear any energy imbalances related to forecast errors, moment-to-moment load fluctuations and system disturbances as estimated or measured shortly after the hour of actual operation. This settlement market would commence immediately after the ISO publicly posts on an electronic network the hourly energy imbalances for each REP along with the ISO's hourly incremental energy cost for imbalances. The REPs then would have a number of days (possibly five) to resolve these imbalances bilaterally among themselves. At the end of the settlement period, any remaining over-deliveries would be paid to REPs at a discount of less than 100% of the ISO's incremental energy cost for imbalances. The remaining under-delivery would be charged to REPs at a premium of more than 100% of the incremental energy cost.

The second settlements market would be used to resolve the difference between the forecasted versus the actual load for consumers not on hourly meter reading. This market would commence at the end of each month. The ISO would post all energy imbalances due to this metering correction publicly on an electronic information network. Once again, REPs would have a number of days (possibly five) to resolve all imbalances among themselves. Any imbalances not resolved among the REPs themselves will involve discounts on ISO payments to REPs or premiums on REP payments to the ISO.

The purpose of the discounts collected from and premiums paid by the REPs with energy imbalances remaining at the conclusion of each of the two settlement markets is to serve as an incentive for REPs to resolve such imbalance among themselves without the involvement of the ISO.[22] The net revenues collected by the ISO from energy imbalances as well as from the penalties for REPs not scheduling to meet their load forecasts should be applied as revenue credits to the ISO's FERC transmission tariffs.

(2) Transmission Business Unit

The FERC would regulate the transmission and ancillary service rates of the ISO. This structure does not require a power exchange or pool.[23]

Depending on the choice of the consumer, the ISO will either bill the REP or the LDU for transmission service for that consumer. The REP or LDU, in turn, would then bill individual consumers for their use of the transmission system. Regardless of who performs the billing to the consumer, the REP will be responsible for scheduling all transmission service for its customers.

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[22] These penalties also serve as an incentive for REPs to invest in real-time metering and telemetering of their customers' loads. Through the use of improved metering REPs will be able to reduce the amount of settlement they have to perform after the conclusion of system operation. In addition, it will aid them in developing load forecasts superior to that of the ISO and help open the door toward a greater use of dynamic scheduling.

[23] However, the market would be permitted on its own to create trading hubs, on-line transaction matching systems and other forms of voluntary power exchanges to the extent the market found the need and advantage in doing so. Such exchanges would be financially supported by those market participants who saw benefit in using them.

(3) Retail Electric Provider Business Unit

As stated earlier, under direct access, REPs would own or directly contract on a bilateral basis for generation. Consumers (or groups of consumers, at those individual consumer's option) would have direct access to REPs. This direct access would take the form of individually negotiated contracts and standard offers of service.[24] Those consumers who wish to take advantage of the benefits of individually negotiated contracts, without actually negotiating those contracts themselves, could subscribe to the services of a load aggregator who may or may not be an REP itself. This market structure maximizes the choices that are available to consumers and allows both consumers and sellers to customize transactions for their mutual benefit. Also, as stated earlier, REPs would have the responsibility of maintaining long-term and hour-to-hour system balance for their contracted load. To accomplish these objectives, REPs would perform their own generation planning.

Generators, marketers and utility affiliates could all become REPs. In addition, individual consumers, or groups of electric consumers, could become REPs. All REPs serving residential and small business customers would be certified by the Missouri Public Service Commission in order to protect consumers. However, such certification should not be so burdensome that it creates a barrier to market entry.

Consumers who elect to do so would be allowed to continue to receive service from their local utility, and would pay the applicable standard rate or offer of the LDU's retail marketing affiliate.

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[24] A standard offer of service can be thought of as an unregulated tariff for service with different pricing for identified levels or types of service that is available to any consumer in a given class. REPs would not be obligated to have standard offers, but it would be to their competitive advantage to do so.

Consumers who do not make a choice could be allocated among all REPs (including the LDU's retail market affiliate) based on the level of each REPs sales to other consumers. Alternatively, the right to serve these consumers could be put out for bid.

(4) Distribution Business Unit

As with transmission service, each consumer could choose to be billed for distribution service by its REP or its LDU.

(5) Customer Service Business Unit

Under direct access, REPs could have an ability to serve as a single point of contact for customer services, such as billing, customer questions, new service requests and customer metering. The customer services offered by REPs will be provided on a competitive basis. However, consumers may also choose to continue to have the LDU serve as the point of contact. Regardless of who provides these services, services such as metering and billing should be subject to strict accuracy standards set by the appropriate state or local authority. To the extent that metering is done on a real-time basis and is used for dynamic scheduling, the ISO would propose the metering standards which would be approved by FERC.

An important consumer service issue is service for high risk/high cost consumers and consumers with special needs (e.g., the handicapped). Several approaches to this problem might be acceptable. One approach would be allocate them among all REPs based on each REPs sales to other consumers. To the extent utilities today are required to serve these consumers, REPs would be required to serve these consumers under the standard-offer rates provided to other consumers.

To help offset the costs of serving these consumers, REPs would receive an allocation of the amounts currently included in the rates of the utilities for bad debts and collection costs. These would continue to be collected by means of a non-by passable distribution "wires" charge paid by all consumers in the same class. Any public funds would similarly be made available to all REPs on a non-discriminatory basis. Another approach would be to compensate the LDU to take on this requirement.

B. Potential Issues

1. Infrastructure Needs. The infrastructure needs to be created to support the tracking of customer status, the development of REP load forecasts and the communication of this information to appropriate parties.
2. Provider of Last Resort. Selection needs to be made from among several options available to address high risk/ high cost consumers, consumers who have special needs or consumers who opt not to choose an REP.
3. Cross-Structure Issues. While the market structure and market power working group did not have the time in its development of this draft report to throughly cross check all of the potential issues that had been developed for the various proposed market structures to determined what potential issues they have in common, it appears that most of the potential issues listed for the hybrid structure in chapter 4 also apply to the direct access market structure.

C. Potential Structural Impacts on Utilities

1. Affiliate Transaction Rules and Standards of Conduct. Functional separation by way of a code of conduct will, as a minimum, need to be in place between the competitive (e.g., REP, generation, customer service, etc.) and non-competitive functions of utilities.
2. Non-Discriminatory Access to Load Forecasts. To provide all REPs with non-discriminatory access to load forecasts, utility load forecast and research personnel need to be assigned either to the ISO or the non-competitive function of the utility to which they belong.
3. Cross-Structure Impacts on Utilities. It appears that most of the impacts on utilities listed for the hybrid structure also apply to the direct access structure.

D. Potential Impacts on Consumers

1. Generation Service Options. Consumers will be able to choose their REP.
2. Metering and Billing Options. Consumers could have a choice between the LDU and their REP for providing metering and billing services. Therefore, receiving a single bill may be a consumer option.
3. Consumer Education. With REPs competing for customers, there will be marketing campaigns aimed at attracting consumers. While these campaigns may provide consumers with some information, codes of sales practices may also need to be considered. With new choices for generation, and possibly metering and billing, consumer education will be necessary.
4. Price Fluctuation. Competitive markets for generation will likely result in greater price volatility. REPs will likely offer fixed price alternatives and consumers will need to understand

the implications of variable and fixed price offerings. Consumers will also have the choice of price options including risk management tools.

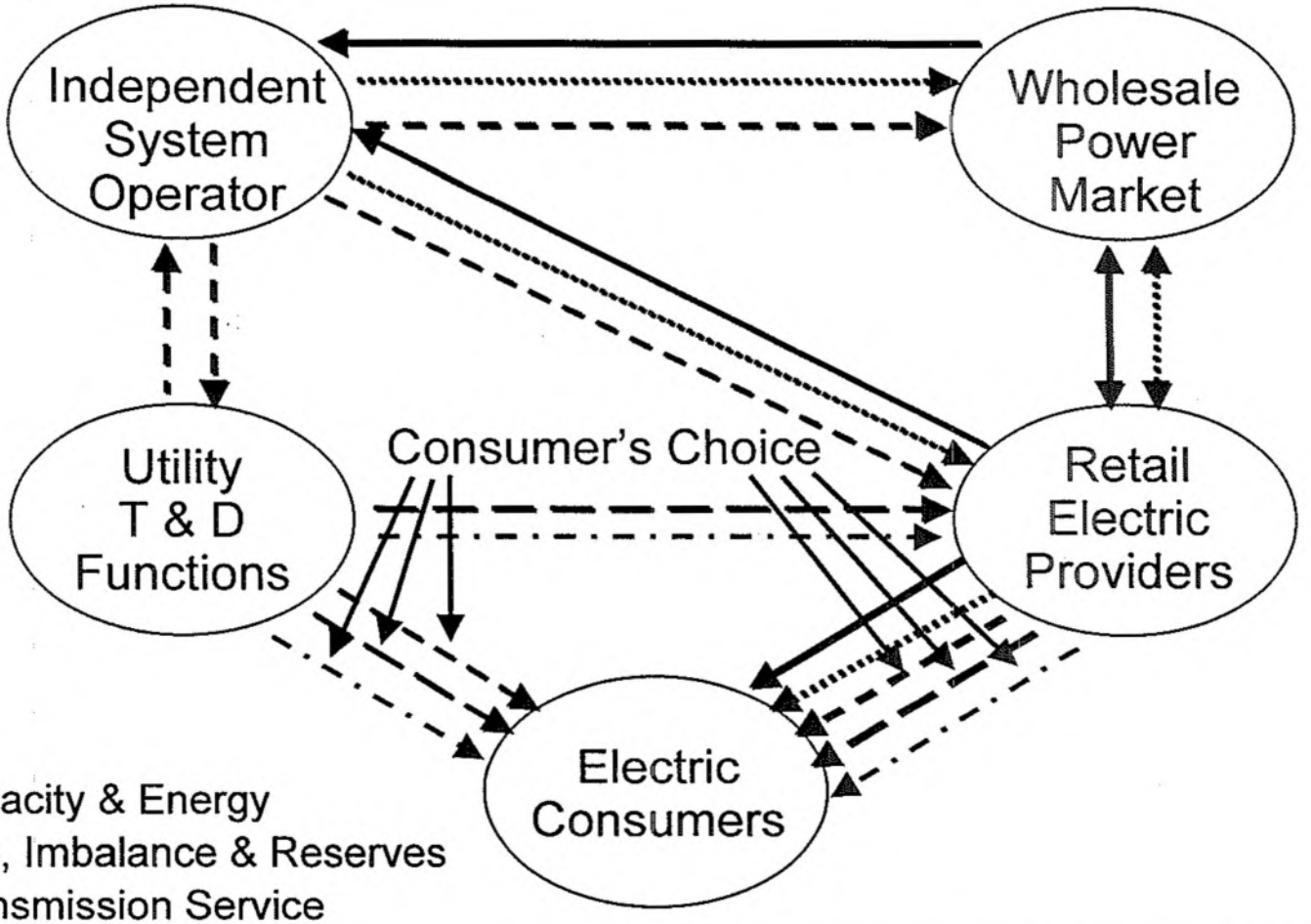
5. Provider of Last Resort. How well the direct access proposal for REPs to provide generation services to consumers that are less desirable to serve will need to be evaluated.

   a) How bad debt might be incorporated into the REPs' own pricing will need to be considered as an alternative to a non-by passable, distribution wires charge.

   b) How information on unpaid bills from REP customers will be provided and audited for purposes of determining the level of the non-by passable, distribution wires charge will need to be determined.

6. Generation Reliability. With the use of penalties to REPs for shortages of generation to meet their hourly load forecasts, end-use consumers may see a different level of generation reliability than exists under the current system which uses designed levels of planning reserves for generation. In addition, a variety of interruptible service options for accepting different levels of generation reliability may be made available to end-use consumers by the REPs.

Direct Access Market Structure



Note: Individual consumers or groups of consumers may also request to be certified as REPs

Missouri Industrial Energy Consumers

CHAPTER 3
A POOLCO MARKET STRUCTURE FOR RETAIL COMPETITION[25]

A. Industry Structure

The poolco would be set up as an independent entity, acting as a clearinghouse for power transactions. The poolco structure described in this chapter consists of two major components:

1. On the "supply" side, the proposal assumes that a single poolco serves the entire state, and that the poolco would take bids to supply the projected power needs of the state from any entity that owns or controls generation. The low bidders would win and would supply the power to the poolco over existing transmission lines.
2. On the "demand" side of the poolco, LDU distribution systems would buy all of their power from the poolco at the competitive market clearing price established by the bidding system and would distribute that power to all of the customers within their respective service areas. Alternatively, the power could be purchased at the bid price rather than the market clearing price. This option would need to be reviewed relative to its potential impact on customers, and on generation market participation and liquidity.

This model can be depicted as follows:

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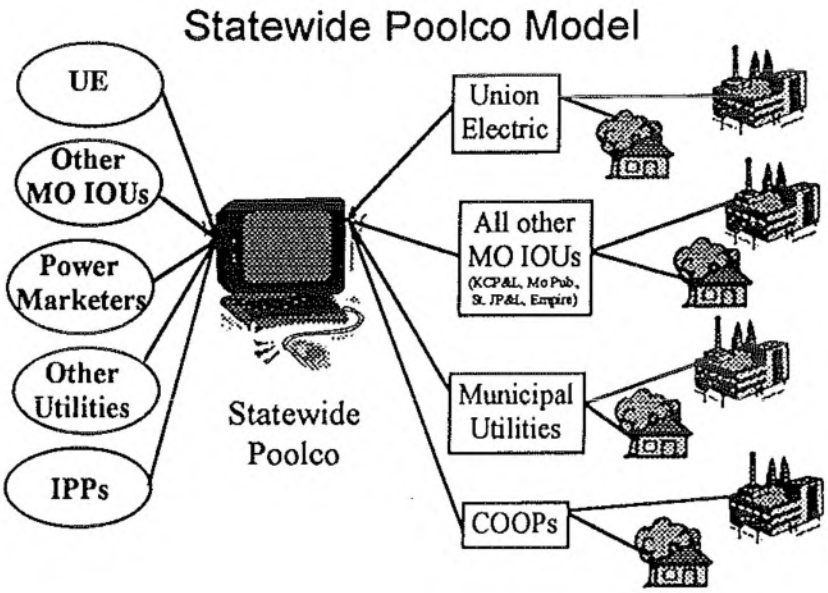
[25] Union Electric Company provided a presentation and the initial drafts of the poolco market structure described in this chapter.



(1) Generation Business Unit

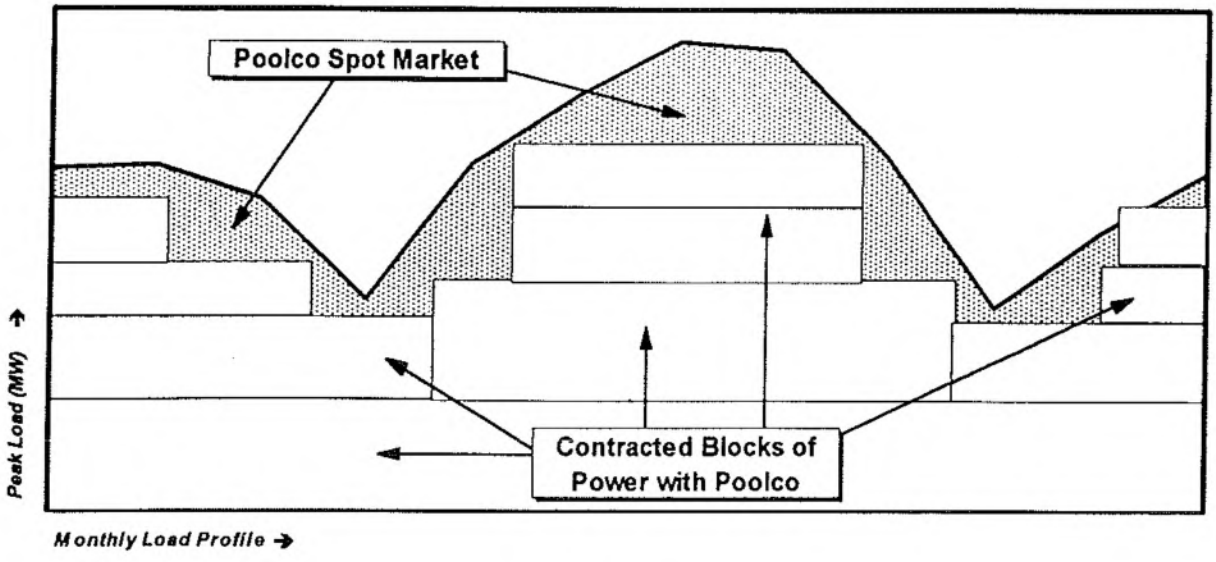
The price of generation would be "unbundled" (or separated) from the rates presently charged and would be determined by the competitive market price as established through the poolco bidding process. Generating plants would no longer have a "captive" customer base, and could sell their output only to the extent that their power was competitively priced.

For sales of electricity to Missouri end-use consumers, all generation would be required to be sold to the poolco except that municipals and cooperatives could be excluded. Any qualified supplier could bid into the poolco, while Missouri utility generators could bid their generation into a qualifying supplier's system outside the state. Independent generators, instate or out-of-state, would also be eligible to bid into the poolco.

While the poolco proposal would allow Missouri-based generators to bid their generation into any other state's system, some established phase-in period may be desirable from the consumers' perspective before this aspect of the plan is implemented. It would also be Missouri-based generator's choice whether to bid all of their generation into the poolco as a single package or as individual power plants.

LDUs would provide projected demands to the poolco on an annual, monthly, and weekly basis. For each period, the poolco would aggregate the projected demands of the LDUs, repackage the aggregated demands as blocks of power with different sizes and shapes and put out the blocks for bid to all qualified suppliers, as illustrated below. Another approach would be to allow the LDUs to solicit and select bidders directly. The spot, or day-ahead, market would be handled by the poolco and used to meet daily demands or to beat the incremental price of any of the poolco bid packages that allow flexible scheduling.

Major Components of the Poolco Model



Planning for future demand would also be handled through the poolco. Demand forecasts through the next calendar year provided by the LDUs would be bid with an additional component for reserve margin to secure reliable resources. Longer term load forecasts (e.g., up to five years) would be provided by the LDUs to the poolco, and would be used as the basis for signaling the competitive generation market as to the need for future capacity additions.

(2) Poolco's Hourly Pricing Mechanism

The following discussion illustrates how multiple market clearing prices for a given hour are condensed down into a single hourly clearing price.

Assume that on a typical on-peak hour, the poolco has an aggregated load requirement of its members of 11,000 MW, and that the poolco has solicited bids from multiple generation suppliers for various block types and sizes at prevailing market prices.

The following are the blocks of power the poolco has contracted for with its generation suppliers to meet it aggregated load, along with the corresponding average price the poolco paid its suppliers for each block.

Block Type	Average Block Size	Total Block Price	Block Price
Base (monthly)	5,000 MW	$20/MWh	$100,000
Intermediate (monthly)	2,500 MW	$24/MWh	$60,000
Intermediate (weekly)	1,500 MW	$28/MWh	$42,000
Intermediate (weekly)	1,000 MW	$30/MWh	$30,000
Peaking (weekly)	500 MW	$50/MWh	$25,000
Spot Market (daily)	500 MW	$45/MWh	$22,500
Total On-Peak	11,000 MW	$25.40/MWh	$279,500

Under this example, the poolco paid an average of $25.40/MWh for the power it contracted for to meets its aggregated load requirements. The price that the poolco would charge to its member utilities would be the $25.40/MWh plus an amount to cover the administrative and operating expenses of the poolco. For this example, assume the poolco's overhead expenses amount to an average of $0.10/MWh.

Therefore, the price the poolco would charge to each member LDU for this typical on-peak hour would be $25.40 + $0.10 = $25.50/MWh. For this example, suppose Member LDU A had an on-peak load for this hour of 6,000 MW. LDU A's bill for this on-peak hour would be:

6,000 MW x $25.50/MWh x 1 hour = $153,000.

This price could also be adjusted for varying load factors by calculating a LDU's proportionate use of each block and summing these blocks.

The above describes the pricing of energy. However, for the contract blocks of power, it is possible that capacity reservation charges would be included as a part of the bids of the generators. If so, these capacity reservation charges must be recovered from the LDUs. Since each LDU has provided the poolco with projected demands which have been repackaged as aggregated blocks of power with different sizes and shapes, the poolco will need to determine how much each LDU has contributed to each of the various blocks of power. Based on this determination, the capacity reservation charges would be allocated to each LDU. In addition, there may be a spot market for capacity[26] whose cost would also need to be allocated to each of the LDUs.

[26] Spot-market capacity is the capacity required to provide firm energy, and shouldn't be confused with the capacity required to provide operating reserves. The allocation method for the spot-market capacity charges would then be based on each LDU's use of spot-market, firm energy.

(3) Transmission Business Unit

LDUs would continue to own their transmission lines, but jurisdictional control of transmission could be turned over to an ISO. The poolco would provide market-related functions only, and would not be set up to govern reliability-related issues. Instead, these issues would be left to the LDU control areas or the utilities' respective ISO, if applicable. The potential role of the ISO is described in the first chapter of this report.

(4) Distribution Business Unit

The LDU would be responsible for submitting its load projections to the poolco to acquire generation from the poolco, allowing for a portfolio of resources to serve its load. The market clearing price charged to all LDUs would be based on the average hourly cost of power acquired by the poolco in order to satisfy the poolco's aggregated load requirements. Prices paid could include both demand and energy cost components.

The LDU would continue to be solely responsible for the tasks of the REP and for Customer Services (metering, meter reading, billing, etc.). In the future, however, some or all of these services could also be opened to full competition.

(5) Setting Prices

The ultimate price to the consumer would be set for investor-owned utilities by a state agency—presumably the Public Service Commission. The prices for the distribution and

transmission businesses could be set much as they are today. For generation, however, the utilities' traditional costs of owning, operating and maintaining their power plants would be replaced entirely by the market cost of the power purchased from the poolco, plus an adder for poolco operating expenses.

Cooperatives and municipals could continue to set rates as they do today, without any regulatory oversight. However, if they were required to purchase power from the poolco, then their rates presumably would reflect the cost of this power, as opposed to the cost of their existing generation or contracts.

B. Potential Issues

1. Price Volatility. With the cost of generation being established by competition—as opposed to the utilities' own costs—prices are likely to be more volatile. Therefore, it may be desirable to develop new methods to reflect the changing market price—such as a system comparable to the Purchased Gas Adjustment (PGA) clause used in the gas business. Like the PGA clause, this system would allow prices paid by consumers to better track the changes in market prices, and ensure that the LDU recovers the cost of the power it buys from the pool.
2. Rate Design Flexibility. Another issue related to the price volatility of generation is the level of flexibility that should be given to LDUs in designing rates. For example, the LDU may be required to pay the poolco based on hourly prices, but can it average those prices for some customers, while offering real-time pricing for others? Allowing LDUs to offer flexible pricing mechanisms to customers would provide customers with options not now available. Any flexibility in designing rates would require regulatory oversight and approval.

3. Poolco Applicability. As with other models, the state legislature would need to determine whether generation owned by cooperatives and/or municipal systems should be exempt from competition.

4. Approval and Oversight of Poolco. Establishment of the poolco and its management structure would likely require legislative approval, while governance and operating issues would require regulatory oversight and approval.

5. Gross Receipts and Property Taxes. Under the poolco structure, LDUs will continue to sell power to their existing customers and, as such, there should be no change in the level of taxes collected on gross receipts attributable to non-local sellers. Utility revenues and the assessed values of utility plant may decrease under the poolco (or any other) market structure, causing a negative impact on tax revenues from several sources, including gross receipts and property taxes. This decrease in tax revenues would likely require corrective actions on the part of the state legislature and/or local governments.

6. Certification of CFD Dealers. Whether or not entities selling financial Contracts for Differences (CFD) should be certified would be a matter for the state legislature to consider. This is strictly a matter of financial protection, not reliability of supply.

7. Setting Generation Supply Reliability Requirements. The poolco will establish the reliability requirements of its power supply packages in its bid request. By reliability requirements for power supply is meant the availability of generators to provide the electricity when it is needed.

8. Infrastructure Problems. The LDUs will be responsible for providing and revising their load forecasts to the poolco. The poolco will schedule the generation to meet the aggregated

forecasts from all the LDUs. Arrangements for generation needed to meet the difference between forecasted hourly loads and actual hourly loads will need to be coordinated between the poolco and the various affected ISOs or individual transmission control area. A process will need to be set in place by the poolco for settlements between the poolco and the LDUs for differences between forecasted and actual hourly usage of electricity. Arrangements will also need to be made between the poolco and the various affected ISOs or individual transmission control areas for the provision of ancillary services.

C. Potential Structural Impacts on Utilities

1. Corporate Restructuring. With the poolco model, utilities with generation and/or transmission will need to separate those businesses from their business as a REP (for purposes of cost allocations and assignments), but can bundle their REP function with their Distribution and Customer Service functions.

2. Non-Generating Utilities. The poolco model produces little impact on utilities which do not own generation (e.g., most municipal systems), except that their generation sources would be acquired through the poolco, rather than through individual bid solicitation.

D. Potential Impacts on Consumers

1. Customer Choice. With the poolco proposal, consumers do not choose the supplier of their electricity. Suppliers are determined on the basis of their bids to the poolco, and the utility serves the function of local REP. However, consumers who believe they could do better than

the poolco price would be allowed to enter into financial "contracts for differences" with any other supplier.[27]

2. Marketing. Under the poolco model, there is no competition to "sign up the customer," and thus any marketing costs incurred will be only for those consumers wanting contracts for differences.

3. Supplier of Last Resort. In the poolco model the LDU is the local REP for all consumers, including low-income and high-risk consumers.

4. Single Customer Bill. Under the poolco model, consumers would receive a single bill for generation, transmission, distribution and customer services from their local utility.

5. Consumer Education. Under the poolco model, consumers would still be purchasing from the local utility at a tariffed price, but with the addition of a purchased power adjustment. Thus, consumer education would focus on changes in rates associated with the changing prices that are occurring in the wholesale market and not on how to choose among competing REPs.

6. Price Fluctuation. Competitive markets for generation will likely result in greater price volatility. REPs will likely offer fixed price alternatives and consumers will need to understand the implications of variable and fixed price offerings. Consumers will also have the choice of price options including risk management tools.

7. Generation Reliability. Because the LDU will no longer build and operate generation, end-use consumers may see a different level of generation reliability than exists under the current system

[27] Contracts for differences involve a supplier and customer agreeing on a price for electricity. If the poolco price is different from the contract price, then that difference is made up as a payment from the supplier to the customer when the poolco price is higher than the contract price or as a payment from the customer to the supplier when the contract price is lower than the poolco price. This allows a customer to secure a fixed or indexed price with the supplier managing the risk of uncertainty in the poolco price.

which uses designed levels of planning reserves for generation. In addition, a variety of interruptible service options for accepting different levels of generation reliability may be made available to end-use customers by the REPs.

CHAPTER 4
A HYBRID MARKET STRUCTURE FOR RETAIL COMPETITION[28]

A. Description of the Structure

The hybrid structure combines aspects of both the direct access (bilateral contracts) market structure and the poolco (regional power exchange) structure. Under this hybrid structure, an Independent System Operator (ISO) facilitates the dispatch of generation and operation of the transmission system to meet the load requirements of bilateral contracts and spot market purchases through a regional Power Exchange (PX). The distribution of electricity will remain as it is under the current regulated structure. Unbundling of the customer service function (opening metering, meter reading and billing to competition) is optional.

(1) Generation Business Unit

Generation is open to full competition. The market will decide what, where and when to build new generation and will set the prices received for electricity by owners of generation assets. Rates for generating electricity will no longer be established by the regulatory authorities. Prices will be established through either contract negotiations (bilateral market) or through the competitively bid PX.

For those buying power from the PX, prices will be established by the PX taking bids from sellers and matching this with the demand from buyers. While price could be set as the average prices paid by the PX for bilateral contracts as described in the poolco structure chapter, in this chapter, the

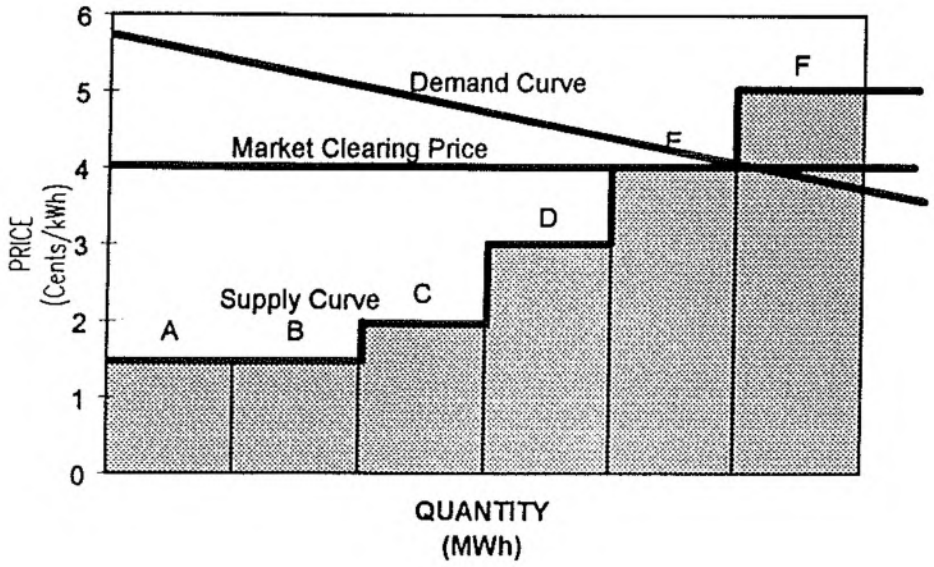
[28] Kansas City Power and Light Company provided a presentation and the initial drafts of the hybrid market structure that is presented in this chapter.

concept of having a market clearing price paid to all generators supplying power to the PX is explained.

In the case where a market clearing price is determined for suppliers, the ISO will then order the dispatch of generation based on the lowest to highest bids that meet the demand from those buyers using the PX. The market clearing price (MCP) for power will be set based on the bid from the last unit actually dispatched to meet the load requirement. All bidders who are dispatched receive this price for their generation. If a generator bids too high, it will not be dispatched and therefore receive no revenue. Bids and offers to buy will be taken on a day-ahead basis for each hour or half hour.

The following chart illustrates how the market clearing price is established by the PX. Each bar (A through F) represents a generator's bid to supply power to the PX. In this example, generators A through E are required to meet demand. The market clearing price would then be set at 4¢/kWh for all purchases and sales through the PX.

Market Clearing Price
Under Retail Access



While most of the generation will be dispatched based on economics (lowest cost first), the ISO may dispatch higher priced renewable generation, also known as "green power," to meet the requirements of bilateral contracts for such power.

Market clearing prices will be location specific. If there are no transmission constraints within a region, the market clearing price from the PX will be the same for all purchases in the region. It is the inability to move power from one location to another that will create these locational differences in price. Prices will be higher in constrained areas as higher priced generation will be dispatched to meet load requirements that cannot be met with lower priced generation from outside the constrained areas.

Generators will have the choice of selling to the wholesale markets, selling to REPs, selling to the PX, becoming a REP and selling to individual customers, or all of the above.

(2) Retail Electric Provider Business Unit

REPs may consist of marketers, generators, aggregators or the LDU. There is no requirement that a REP own any generation, transmission or distribution assets. REPs that purchase power for resale may buy it through bilateral contracts or through the market created by the PX. These bilateral contracts may either be physical or financial bilaterals. Physical bilaterals involve specific generation, whereas a financial bilateral will utilize the PX and Contract For Differences (CFD). In a CFD, a generator and buyer agree to a price for electricity. The generator sells into the PX and the buyer purchases through the PX. If the market clearing price exceeds the contract price, the generator will compensate the buyer for the difference. If the market clearing price is less than the contract price,

the buyer compensates the generator for the difference. If the generator fails to deliver, the PX provides a source of power for the generator to purchase, fulfilling its obligation under the contract.

Each REP is responsible for providing projections of its customers' load to the ISO for scheduling. Differences between the actual and projected usage are then balanced through the PX. To the extent that a REP provides inaccurate forecasts, it will be subject to the risk of purchasing power on the open spot market through a settlement process. There are no administrative penalties for using the PX for balancing services, only the risks associated with buying from the open spot market.

(3) Distribution Business Unit

Each consumer could choose to have distribution service billed directly to the consumer or to its REP. REPs may provide a single bill to their customers, including energy and delivery charges, provide a bill for the energy component only, or contract with the LDU to provide a single bill including energy and delivery charges to customers of the REP. If the REP sends the customer a bill for energy and delivery, the LDU will bill the REP for the delivery services. Coordination between the REP and LDU will be required for billing, meter reading and service connections.

The LDU may function as the supplier of last resort by purchasing power from the PX at the established market clearing price. The LDU may also provide power for those customers that opt not to choose an alternative REP.

(4) Customer Service Business Unit

All customers will have a choice of energy provider. Transmission and distribution are provided under regulated rates. The point of contact for billing-related questions will be handled by the provider of the bill. Lights-out calls will be handled by the LDU. Consumers wanting new service can either call the REP or LDU. If metering is not unbundled (open to competition), the LDU will continue to connect and disconnect service under rules established by its regulatory authority. If metering is unbundled, the provider (REP or LDU) would have responsibility for disconnection of service. These rules will also be set by the LDU's regulatory authority.

B. Potential Issues

1. Customer Service Unbundling. A significant distribution issue to address is the level to which the customer service functions will be unbundled. Some states are requiring that metering, meter reading and billing be open to competition. Unbundling of the customer service functions adds many new complications to retail competition. If metering is open to competition some of the issues to address include meter testing, installation procedures, quality and the assignment of responsibility. Competitive billing will require new dispute resolution procedures and disclosure requirements. Other service-related issues include connect, disconnect and storm restoration rules. The decision to unbundle the customer service functions should be left up to the state legislature, while many of the issues related to implementing unbundling are best left up to the LDU's regulatory authority.

2. Consumer Protection. Consumer protection-related issues that must be addressed with this structure include:

- Marketing practices (misrepresentation, discrimination, etc.);
- Enrollment (anti-slamming, disclosure, deposits, etc.);
- Consumer education; and
- Privacy of information (usage and payment history).

3. Affiliate Transaction Rules and Standards of Conduct. Affiliate transaction rules and standards of conduct for transactions between any REP function of an existing utility and their regulated operations will be needed. The Missouri Public Service Commission and/or state legislature should address this issue.

4. Settlement process. A settlement process is required for reconciling actual vs. forecasted usage. This may best be left up to the ISO to determine.

5. Hourly Metering. The size of customer requiring hourly metering needs to be established. This should be addressed by the ISO as it is related to the needs of the settlement process.

6. Data Management Process. Many entities will need access to consumer data for purposes including forecasting and billing. This issue should be addressed by the relevant regulatory authority.

7. Tax Reform. Taxes related to utilities must be addressed by the legislature as restructuring will impact gross receipts taxes, property taxes and sales/use taxes. Tax reform must be in place prior to allowing retail competition.

8. Cross-Structure Issues. It appears that the hybrid structure may also need to include the potential issues listed for the direct access structure in chapter 2.

C. Potential Structural Impacts on Utilities

1. Obligation to Supply. With generation open to competition, the existing utilities will no longer have the obligation to plan for and build new generation. Their existing obligation to serve will be redefined as an obligation to connect consumers to the grid and deliver energy at the market price.

2. Company Structure. Generation will be functionally separated from transmission and distribution. Some existing vertically integrated utilities may decide to exit the generation business. The generation business unit must decide whether to sell electricity to REPs, the PX, end-use consumers or a combination of these. Transmission operations must be turned over to the ISO.

3. Bill Unbundling. End-use consumer bills must be unbundled. At a minimum, charges for generation, transmission and distribution need to be separated so that consumers can compare the cost of generation between providers.

4. Affiliate Transaction Rules and Standards of Conduct. Functional separation by way of a code of conduct will, as a minimum, need to be in place between the competitive (e.g., REP, generation, customer service, etc.) and non-competitive functions of utilities.

5. CIS Systems. Utility computer information systems (CIS) will most likely require extensive upgrades to track:

   - Who the REP is for each customer
   - Who bills for each service
   - Who owns the metering equipment (if metering is competitively provided)
   - Who reads the meter (if metering is competitively provided)
   - What data must be transferred to the ISO, REPs, etc.
   - Rates for alternative REPs (if billing is contracted to the LDU)
   - Hourly usage data for larger customers

D. Impacts on Consumers

1. Service Options. Consumers will be given the opportunity to choose a provider. They will also be given the opportunity to choose not to choose. Consumer alternatives may include:

   - Aggregators
   - Marketers
   - LDU
   - PX
   - Other alternative REPs

2. Billing. Consumers will also be given a choice in billing. They can choose to have one bill from the REP for all services, one bill from the LDU for all services or two bills - one from the REP for energy and one from the LDU for delivery services.

3. Consumer Education. With all these new alternatives, a consumer education process is necessary. Much of this will be done by the alternative REPs, but education will need to be provided by the LDU. The PSC should address this issue.

4. Default Supplier. For those consumers that choose not to choose, or cannot get service from an alternative REP, the LDU will become their supplier. The LDU will purchase power from the competitively bid PX to supply these customers. The cost of this power will then be passed on to these consumers through a single bill. The LDU can be compensated for costs associated with any bad debt (associated with serving these default customers) through the regulated distribution charges to all customers. This structure will insure that all consumers have access to electricity at least to the same level available today. Prices for this power will be determined by the competitive market.

5. Price Risks. With the freedom to choose will come the ability to accept additional price risk. Consumers will be able to choose fixed price energy charges from REPs who will offer such plans or charges tied to the swings in the wholesale market created by the PX. Consumers will need to understand the implications of their choices.

6. Generation Reliability. With the competitive supply of generation, end-use consumers may see a different level of generation reliability than exists under the current system which uses designed levels of planning reserves for generation. In addition, a variety of interruptible service options for accepting different levels of generation reliability may be made available to end-use consumers by the REPs.

APPENDIX
FERC ORDER 888 ISO CRITERIA

1. **The ISO's governance should be structured in a fair and non-discriminatory manner.**
The primary purpose of an ISO is to ensure fair and non-discriminatory access to transmission services and ancillary services for all users of the system. As such, an ISO should be independent of any individual market participant or any one class of participants (e.g., transmission owners or end-users). A governance structure that includes fair representation of all types of users of the system would help ensure that the ISO formulates policies, operates the system, and resolves disputes in a fair and non-discriminatory manner. The ISO's rules of governance, however, should prevent control, and appearance of control, of decision-making by any class of participants.

2. **An ISO and its employees should have no financial interest in the economic performance of any power market participant. An ISO should adopt and enforce strict conflict of interest standards.**
To be independent, an ISO cannot be owned by any market participant. We recognize that transmission owners need to be able to hold the ISO accountable in its fiduciary role, but should not be able to dictate day-to-day operational matters. Employees of the ISO should also be financially independent of market participants. We recognize, however, that a short transition period (we believe 6 months would be adequate) will be needed for employees of a newly formed ISO to sever all ties with former transmission owners and to make appropriate arrangements for pension plans, health programs and so on. In addition, an ISO should not undertake any contractual arrangement with generation or transmission owners or transmission users that is not at arm's length. In order to ensure independence, a strict conflict of interest standard should be adopted and enforced.

3. **An ISO should provide open access to the transmission system and all services under its control at non-pancaked rates pursuant to a single, unbundled, grid-wide tariff that applies to all eligible users in a non-discriminatory manner.**
An ISO should be responsible for ensuring that all users have non-discriminatory access to the transmission system and all services under ISO control. The portion of the transmission grid operated by a single ISO should be as large as possible, consistent with the agreement of market participants, and the ISO should schedule all transmission on the portion of the grid it controls. An ISO should have clear tariffs for services that neither favor nor disfavor any users or class of users.

4. **An ISO should have the primary responsibility in ensuring short-term reliability of grid operations. Its role in this responsibility should be well-defined and comply with applicable standards set by NERC and the regional reliability council.**
Reliability and security of the transmission system are critical functions for a system operator. As part of this responsibility an ISO should oversee all maintenance of the transmission facilities under its control, including any day-to-day maintenance contracted to be performed by others. An ISO may also have a role with respect to reliability planning. In any case, the ISO should be responsible for ensuring that services (for all users, including new users) can be provided reliably, and for developing

and implementing policies related to curtailment to ensure the on-going reliability and security of the system.

5. **An ISO should have control over the operation of interconnected transmission facilities within its region.**
An ISO is an operator of a designated set of transmission facilities.

6. **An ISO should identify constraints on the system and be able to take operational actions to relieve those constraints within the trading rules established by the governing body. These rules should promote efficient trading.**
A key function of an ISO will be to accommodate transactions made in a free and competitive market while remaining at arm's length from those transactions. The ISO may need to exercise some level of operational control over generation facilities in order to regulate and balance the power system, especially when transmission constraints limit trading over interfaces in some circumstances. It is important that the ISO's operational control be exercised in accordance with the trading rules established by the governing body. The trading rules should promote efficiency in the marketplace. In addition, we would expect that an ISO would provide, or cause to be provided, the ancillary services described in this Rule.

7. **The ISO should have appropriate incentives for efficient management and administration and should procure the services for such management and administration in an open competitive market.**
Management and administration of the ISO should be carried out in an efficient manner. In addition to personnel and administrative functions, an ISO could perform certain operational functions, such as: determination of appropriate system expansion, transmission maintenance, administering transmission contracts, operation of a settlement system, and operation of an energy auction. The ISO should use competitive procurement, to the extent possible, for all services provided by the ISO that are needed to operate the system. All procedures and protocols should be publicly available.

8. **An ISO's transmission and ancillary services pricing policies should promote the efficient use of and investment in generation, transmission, and consumption. An ISO or an RTG of which the ISO is a member should conduct such studies as may be necessary to identify operational problems or appropriate expansions.**
Appropriate price signals are essential to achieve efficient investment in generation and transmission and consumption of energy. The pricing policies pursued by the ISO should reflect a number of attributes, including affording non-discriminatory access to services, ensuring cost recovery for transmission owners and those providing ancillary services, ensuring reliability and stability of the system and providing efficient price signals of the costs of using the transmission grid. In particular, the Commission would consider transmission pricing proposals for addressing network congestion that are consistent with our Transmission Pricing Policy Statement. In addition, an ISO should conduct such studies and coordinate with market participants including RTGs, as may be necessary to identify transmission constraints on its system, loop flow impacts between its system and neighboring systems, and other factors that might affect system operation or expansion.

9. **An ISO should make transmission system information publicly available on a timely basis via an electronic information network consistent with the Commission's requirements.**
A free-flow of information between the ISO and market participants is required for an ISO to perform its functions and for market participants to efficiently participate in the market. At a minimum, information on system operation, conditions, available capacity and constraints, and all contracts or other service arrangements of the ISO should be made publicly available. This information should be made available on an OASIS operated by the ISO.

10. **An ISO should develop mechanisms to coordinate with neighboring control areas.**
An ISO will be required to coordinate power scheduling with other entities operating transmission systems. Such coordination is necessary to ensure provision of transmission services that cross system boundaries and to ensure reliability and stability of the systems. The mechanisms by which ISOs and other transmission operators coordinate can be left to those parties to determine.

11. **An ISO should establish and ADR process to resolve disputes in the first instance.**
An ISO should provide for a voluntary dispute resolution process that allows parties to resolve technical, financial, and other issues without resort to filing complaints at the Commission. We would encourage the ISO to establish rules and procedures to implement alternative dispute resolution processes.