COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Investigation into the Membership of Louisville Gas and Electric Company and Kentucky Utilities Company in the Midwest Independent Transmission System Operator, Inc.

Case No. 2003-00266

Supplemental Responses of
Midwest Independent Transmission System Operator, Inc.
to LG&E/KU 12/07/04 Supplemental Data Request Number One

Per this Commission's order, dated February 4, 2005, the Midwest Independent Transmission System Operator, Inc. ("Midwest ISO") hereby supplements its response to Data Request Number 1 propounded by Louisville Gas and Electric Company and Kentucky Utilities Company (collectively, "LG&E/KU") on December 7, 2004. The initial response to the LG&E/KU 12/7/04 Data Requests was served on December 20, 2004, and filed with the Commission the next day. The Commission has since ordered the Midwest ISO to file documents, such as a curriculum vitae, that listed the education, background, or work experience of Dr. McNamara. In addition, the Commission ordered the Midwest ISO to prepare and file a list of Dr. McNamara's writings, reports, and speeches that he prepared or presented. In compliance with the Commission's order and without waiving its objection to that request, the Midwest ISO is filing a supplemental response to LG&E/KU 12/7/04 Data Request No. 1. Attached to this response is a copy of a curriculum vitae prepared by Dr. McNamara. Further, in satisfaction of the Commission's request that Dr. McNamara prepare and file a list of writings, reports and speeches that were prepared or presented by Dr. McNamara and are in his possession or under his control, also attached to this response are complete copies of presentations given by Dr. McNamara that are relevant to this investigation.

Finally, the Midwest ISO is providing electronic copies of these presentations (.ppt format) to LG&E/KU via e-mail and will make these files available to other participants in that format upon request.

Respectfully submitted,

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By: _____

ATTORNEYS FOR MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR, INC.

CERTIFICATE OF FILING AND SERVICE

I hereby certify that on this the 11th day of February, 2005, the original and six (6) copies of this Supplemental Response were hand-delivered to the Commission for filing, and a copy was sent, via U.P.S., to:

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ATTORNEY FOR THE MIDWEST ISO

REQUEST:

1. At page 1 of 89, lines 9 through 18, Dr. McNamara summarizes his educational and professional background.

   a. Please provide a curriculum vitae and/or résumé for Dr. McNamara that includes a complete description of Dr. McNamara's professional certifications, educational and professional background, including each and every time he has testified before a court or regulatory agency, with the subject matter of his testimony, the docket number and the title of the case.

   b. Please identify and provide a copy of each and every paper, report, presentation, speech, or publication that Dr. McNamara has prepared, or which he assisted in preparing, in the course of his professional career which relates to the subject matter of this investigation.

OBJECTION:

This request is overly broad and unduly burdensome. Dr. McNamara has provided information regarding his educational and professional background in his direct testimony prefiled in this proceeding in December 2003 and in September 2004, and responded to questions regarding that background in the hearing in this proceeding that began February 25, 2004. In addition, in his prefiled testimony and in responses to data requests (including this set of data requests), Dr. McNamara has specifically cited to affidavits and reports he has given or provided in various Federal Energy Regulatory Commission ("FERC") proceedings or in matters before state regulatory commissions. One of his presentations is attached as Appendix A to his rebuttal testimony prefiled in this proceeding on November 19, 2004; another was to the September 2004 EMLF at the initiation of LG&E/KU's outside counsel in this proceeding. If LG&E/KU can be more specific about information they seek and its potential relevance to this proceeding, the

Midwest ISO will attempt to accommodate the request by providing materials for their inspection and copying.

SUPPLEMENTAL RESPONSE:

Without waiving its objection above, the Midwest ISO responds as follows:

a. Dr. McNamara has prepared a curriculum vitae, which is attached to this response as Attachment No. 1. The Midwest ISO also provides that, although Dr. McNamara has expertise in the field of economics, he is testifying before the Kentucky Public Service Commission as an officer of the Midwest ISO with knowledge of and responsibility for the Midwest ISO's Energy Markets Tariff and related matters such as the FTR allocation, not as a third-party consultant hired to provide testimony in this investigation on behalf of the Midwest ISO.

b. Attached are copies of slides from five PowerPoint® presentations given by Dr. McNamara that relate to the subject matter of this investigation. These copies are attached individually to this response as Attachment Numbers 2 through 6, respectively. These presentations are:

(1) *A Place for RTO's - ? or!*, dated February 14, 2004;

(2) *"Day 2" Overview*, dated April 20, 2004;

(3) *An Overview of MISO Cost Benefit Studies*, dated September 23, 2004;

(4) *Electricity Markets*, dated October 14, 2004; and

(5) *MISO Market Design Issues*, dated November 12, 2004.

These slides are also being provided to counsel for LG&E and KU in electronic format (.ppt files) via e-mail, and are available to other participants in that format upon request.

Witness: Ronald McNamara

Attachment
No. 1

Ronald R. McNamara

Midwest Independent Transmission System Operator, Inc.
701 City Center Drive
Carmel, Indiana 46032

SUMMARY

A professional economist with experience in the private sector, consulting, the public sector, and academia. Has designed and implemented reforms in electricity and gas markets in both regulated and non-regulated environments in New Zealand, Australia, and the United States.

PROFESSIONAL EXPERIENCE

MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR, INC. Carmel, Indiana. February 2003 to present.

Vice President Market Management
Responsible for the MISO Energy Market Tariff. Manage various business units related to the market. Reports to the Chief Executive Officer and Chief Operating Officer.

Accomplishments:
- Project managed the development of MISO's Energy Market Tariff.
- Responsible for the day-to-day operation of the Day Ahead Market, Market Pricing, Financial Transmission Rights, Settlement, and Market Analysis.

AMERICAN ELECTRIC POWER, Columbus, Ohio. July 2001 to January 2003

Director, Government Affairs / Energy Markets
Focused primarily on internal stakeholders, responsibilities ranged across almost all aspects of the business, e.g., regulatory, marketing, origination, and trading.

Accomplishments:

- Serving as AEP's representative on the Management Committee of the NYISO, the PJM Members Committee, the Participants Committee in NEPOOL, and the SeTrans Stakeholder Advisory Committee.
- Providing risk assessment on regulatory/market design issues for commercial contracts and trading positions.

ENRON CORPORATION, Houston, Texas. May 2000 to June 2001

Director, Government Affairs – The Americas
Primary responsibilities were focused on wholesale and retail market design and implementation in the Texas (ERCOT) and Southwest Power Pool (SPP) electricity markets. The role was tightly integrated with the commercial activities of trading and origination for the two regions.

Accomplishments:
- Member of the SPP Board of Directors.

- Member of the: Technical Advisory committee (ERCOT), Wholesale Market Subcommittee (ERCOT), Protocol Revision Committee (ERCOT), Commercial Practices Committee (SPP), Engineering and Operations Committee, Congestion Management Systems Working Group, Market Settlement Working Group (SPP).
- Provide assessments of the legislative/regulatory risks for various electricity origination projects in Texas and Kansas.

DUKE ENERGY AUSTRALIA, Brisbane, Australia. September 1999 to April 2000

General Manager Regulatory Affairs – Electricity (contract position)
Co-project managed the development of Government/Regulatory Affairs department for Duke Energy Australia. Managed legislative/regulatory/market design issues in electricity at the State and National level for Duke. Reported to the Managing Director of Duke Energy Australia.

Accomplishments:
- Project managed Duke's response to the National Competition Council on an application for regulatory coverage of the $500 million Eastern Gas Pipeline from Longford, Victoria to Sydney, New South Wales under the National Gas Access Code.
- Member of the Electricity Industry Consultation Group (New South Wales), the Network Pricing Principles Working Group (New South Wales), the Embedded Generator Working Group (New South Wales), the Electricity Project Team (Tasmania), the Greenhouse Gas Emission Task Force (Victoria), and the Generation Directorate of the Electricity Supply Association of Australia.

QUEENSLAND COMPETITION AUTHORITY, Brisbane, Australia. May 1998 to August 1999.

Director – Electricity, Gas and Ports
Level 2 management position within the Queensland State Regulatory Agency. Responsibility for overseeing access and pricing issues in the areas of electricity, gas and ports. Managed and directed activities of consultants. Reported directly to the Chief Executive and the Board.

Accomplishments:
- Project managed the implementation of the regulatory regime for third party access to gas pipeline distribution systems.
- Chaired a working group comprised of senior management in the electricity and natural gas industries.
- Managed the development of ring fencing guidelines.
- Managed the asset valuation exercise for regulatory review purposes for electricity and gas networks.

ELECTRICITY MARKET COMPANY, Wellington, New Zealand. January 1997 to April 1998

Manager Research and Development
Coordinated all aspects of the rule making process for the wholesale and retail electricity market in New Zealand. Provided technical support to the nodal pricing function. Reviewed transmission system infeasibilities. Verified generator behavior with respect to environmental constraints. Managed strategic relationships with market participants and government officials. Project managed activities of consultants. Reported directly to the Chief Executive and the Board.

Accomplishments:

- Reformed the governance structure for metering and reconciliation decision making.
- Developed the contractual framework for allowing transmission grid users to set grid security standards.
- Redesigned and implemented a new fee structure for the wholesale electricity pool.
- Provided advice on appropriate fees for scheduling/dispatch services for non-pool members.
- Advised the CEO and Board of Directors on strategic issues and direction for the company and the electricity market.

PUTNAM HAYES & BARLETT ASIA-PACIFIC, Auckland, New Zealand. November 1995 to December 1996

Senior Advisor

Provided economic consulting services to a number of clients, including the Electricity Market Company (New Zealand), TransAlta (New Zealand), BHP (Australia), the Electricity Corporation of New Zealand (ECNZ), and Transpower New Zealand Ltd.

Accomplishments:

- Developed a wholesale electricity price path for the Australian Nation Electricity Market over the short to medium term.
- Provided economic advice on the dispatch rules and price setting algorithm for the New Zealand electricity market.
- Developed the contracting structure for the procurement of ancillary services in New Zealand.
- Provided advice on the fees charged by the grid operator for generators bypassing the (voluntary) wholesale electricity pool in New Zealand.
- Evaluated the risk characteristics of a major generator's hedge portfolio.

ELECTRICITY MARKET COMPANY, Wellington, New Zealand. April 1995 to November 1995

Senior Analyst

Managed the transfer of the hardware and software used to produce wholesale electricity prices from ECNZ to the Electricity Market Company. Managed the interface between the pricing model and generation and system control. Produced weekly load forecast. Validated and input the shadow prices for various fuel sources (e.g. hydro, goal, gas, and geothermal) to establish the daily merit order for generation.

UNIVERSITY OF AUCKLAND, Auckland, New Zealand. May 1993 to February 1995

Lecturer, Department of Economics

Lectured in microeconomics, industrial organization and regulatory economics. Supervised graduate student research in electricity pricing, asset valuation and investment decisions in electricity transmission networks, and the economic aspects of embedded generation.

BENTLEY COLLEGE, Waltham, Massachusetts. August 1991 to April 1993.

Assistant Professor, Department of Economics
Lectured in microeconomics, macroeconomics and mathematical economics.

CALIFORNIA STATE UNIVERSITY, SACRAMENTO, Sacramento, California. September 1988 to July 1991

Instructor, Department of Economics
Lectured in microeconomics, macroeconomics, industrial organization, and money and banking.

UNIVERSITY OF CALIFORNIA, DAVIS, Davis, California. September 1985 to June 1991

Teaching/Research Assistant
Assisted with undergraduate economic courses and on research funded by the University of California Energy Institute.

COLORADO STATE UNIVERSTIY, Fort Collins, Colorado. September 1984 to June 1985

Teaching Assistant
Assisted with undergraduate economics courses.

UNIVERSTIY OF RHODE ISLAND, Kingston, Rhode Island. September 1981 to June 1983

Teaching/Research Assistant
Assisted with undergraduate economics courses and on research funded by the State of Rhode Island.

THE PLANNING CENTER, Newport Beach California. July 1979 to August 1981

Analyst
Assisted in the preparation of fiscal and environmental impact statements.

EDUCATION

PhD, Economics, University of California, Davis (1993)
MA, Economics, University of California, Davis, (1990)
MA, Economics, University of Rhode Island (1983)
BA, Economics, University of California, Irvine (1979)
BA, Ecology, University of California, Irvine (1979)

Attachment
No. 2

A Place for RTO's -? or !

KIUC Energy Conference

February 19, 2004

Ron McNamara

Midwest ISO

Introductory Comments

- Objective:
  - Suggest that ***we*** need to look at the issues before us in a different way.
  - ***RTO, ISO, LMP, etc. these aren't the real issues!***
- Starting point:
  - Three foundational elements:
    - "Industry"
    - Legislative/regulatory
    - End use customers

MISO

The "Industry"

- Start with three basic questions:
  - ***What is the value chain in the industry? What are the underlying drivers for this value chain? How do these drivers change over time?***
  - The answer to these questions allows you to begin to think about the next set of questions:
    - ***How do we add value? What niches in the value chain do we or should we occupy?***
    - ***What products/services do we or should we provide?***
    - ***What are our core competencies, etc?***
    - ***What is our business model?***

MISO

Legislative/regulatory

- What are the objectives of Federal and/or State legislation?
- What are we regulating?
  - Prices? Output? Behavior? Reliability?
  - Why? What outcomes do we hope to achieve?
  - How are we regulating? What tools does the regulator have at his/her disposal?
    - Prices? Capacity markets? Bidding behavior?
- The complexity of the task before the regulator is increasing at an increasing rate.

MISO

End use customers

- What do end use customers want? ***At what price? From whom? For how long? Who is best placed to make the decision?***
- Technological advance has, and will, at an increasing pace, allow for customer choice.
  - Microturbines, distributed generation, FACTS, DSM, Price Responsive Demand, Metering, etc.
- Diversity of customer needs creates the demand for diversification - one size no longer fits all (if it ever did)!

MISO

Foreign perspective

- New Zealand
  - Economic reform in the late 80's
  - Share of national debt related to electricity was very high
  - Hydro crisis in '92
- Australia
  - Near bankruptcy of Victoria in early '90s
  - Economic reform program
- In both countries crisis forced a change in thinking…

MISO

Domestic issues

- Inappropriate asset valuations
- Unrecognized or implicit subsidizations
- Regulatory and/or legislative uncertainty
- End use customers are the "bearer of last resort" for risk
- Are these "big" enough to change our thinking?

MISO

Concluding remarks

- Need to recognize the landscape has changed.
  - Technology, consumer preferences, ability to contract, competitiveness of the global and domestic economy, etc
- The underlying issues are real and significant.
- Must change the way we think about solutions.

MISO

Attachment
No. 3

Midwest Market Initiative

"Day 2" Overview

April 20, 2004

MISO

Midwest Market Initiative

Current Operations

- **Current operations are based on:**
  - Defining transmission capacity for purposes of daily operations or commercial transactions (as opposed to transmission planning).
  - Deviations between actual and expected are handled through the "Transmission Loading Relief" (TLR) process – which is a physical rationing mechanism, i.e a transaction is "cut" (i.e. not allowed to take place.
    - Key characteristics of this process:
      - "Transactions" with at least a 5% impact on a constrained flowgate are proportionately reduced.
      - Response is not voluntary.
      - Mechanism operates primarily on a 30 minute basis.
      - Lack of precision/granularity means that assets are not optimized and reliability is achieved at greater cost.
    - The result:
      - **Dispatch is not as efficient as it could be.**
      - Why is this important? Electricity cannot be stored…production and consumption occur simultaneously.

MISO

Future Operations

- **Future operations ("Day 2") will be based on:**
  - Centralized security constrained economic dispatch.
  - Real time power flows will be coordinated through the use of locational marginal prices.
    - Key characteristics of this process:
      - All "transactions" will see their economic effect on power flows.
        - » Economic effects are no longer implicit or hidden rather they are transparent and explicit.
      - Voluntary decision as to whether or not to change behavior.
      - Mechanism operates on a 5 minute basis.
      - Much greater precision/granularity leads to improved optimization of assets and greater reliability at less cost.
    - The result:
      - **Dispatch is much more efficient.**
      - **Reliability is enhanced.**

Cornerstones of Future Operations

- Centralized security constrained economic dispatch based on locational marginal prices.
- Day ahead "market".
  - Not a market as much as it is a scheduling process for real time.
- Post day ahead.
- Real time dispatch.
- Creation of financial instrument (financial transmission rights or "FTRs") to "hedge" exposure to different locational prices.

Overview of Future Operations

- Centralized dispatch over wider geographic scope
  - With the tools necessary to accomplish the dispatch
    - Network model
    - State estimator
- 5 minute dispatch as compared to 1 hour ahead.
  - "Redispatch" occurs every 5 minutes
    - Improved reliability
    - Increased efficiency
- "The" market is really just an outcome of the dispatch process
  - Make sure the physics and the economics are aligned.
  - Brings transparency to the process

Attachment
No. 4

An Overview of MISO Cost Benefit Studies

September 23, 2004

Ron McNamara

Introductory Comments

- MISO has performed 3 cost benefit analyses as a result of regulatory proceedings or requests.
  - Wisconsin
  - Kentucky
  - "Footprint"
- Different focus
  - Region/footprint
- Analyses were based on PROMOD IV
  - Time consuming…allow at least 3 months to do a reasonable job. Each run can take in excess of 70 hours.

MISO

Sources of benefits

- Three types of benefits have been considered:
  - Centralized dispatch using LMP.
    - Expanded market access.
  - Benefits related to improved market liquidity and price transparency.
    - Larger source of benefits but difficult to quantify.
      - Primarily addressed qualitatively.
  - Reliability.
    - Level of TLRs.
    - Security constrained economic dispatch occurs on a 5 minute basis.

MISO

Benefits

- Reduction in production cost.
  - Security constrained economic dispatch lowers production costs.
    - For the footprint = $255 million in gross annual reductions in costs.
- Potential reduction in wholesale prices.
  - Translating cost reductions in potential price reductions.
    - For the footprint = $713 million in potential gross annual savings to consumers.

MISO

Key drivers

- LMP "vs" TLR

  Replacing the reservation/TLR process with 5 minute security constrained economic dispatch.

  - TLR process is a blunt instrument designed primarily for reliability not economic efficiency.

- Market transparency that results from LMP.

  Current "market" relies on hourly bilateral transactions to optimize resource portfolio

  - Under LMP a transparent price is created frequently and across the footprint.

MISO

Concluding remarks

1) Cost benefit studies can *help* guide decisions.
2) The context for any study needs to be understood.
3) May or may not be reflective of what will actually happen.
    - Introduction of transparent prices will change both information and incentives.

MISO

Attachment
No. 5

Electricity Markets

Ron McNamara

October 14, 2004

Starting Point

- How we view the world is heavily influenced by our starting point!
- Often we do not recognize how our decisions are affected by our "priors".

Miso

Starting Point for Electricity

- Natural monopoly.
- Regulated.
- Essential service/commodity.

MISO

Different Starting Point

- Natural monopoly?
  - Not generation!
    - Bigger not necessarily bigger…especially if location is considered.
  - Wires!
- Regulated?
  - Only the monopoly elements.
- Essential service/commodity.
  - Absolutely…does that imply a market is not the most efficient mechanism?

MISO

Different Solutions

- How might a new starting point lead us to look at things differently?
  - Rationale for integration:
    - Commercial?
    - Regulatory?
  - Open access!
  - Importance of "dispatch."
    - Dispatch = the coordination of power flows.

MISO

Open Access

- Fundamentally sound proposition.
  - If done properly leads to:
    - More efficient use of resources.
      - Especially important in electricity because of high capital requirements.
    - Allows customers to take better advantage of physical diversity.
- Complex issue and it is easy to get buried in the details.

MISO

Attachment
No. 6

Midwest Market Initiative

PSERC ISO/RTO Research Forum: MISO Market Design Issues

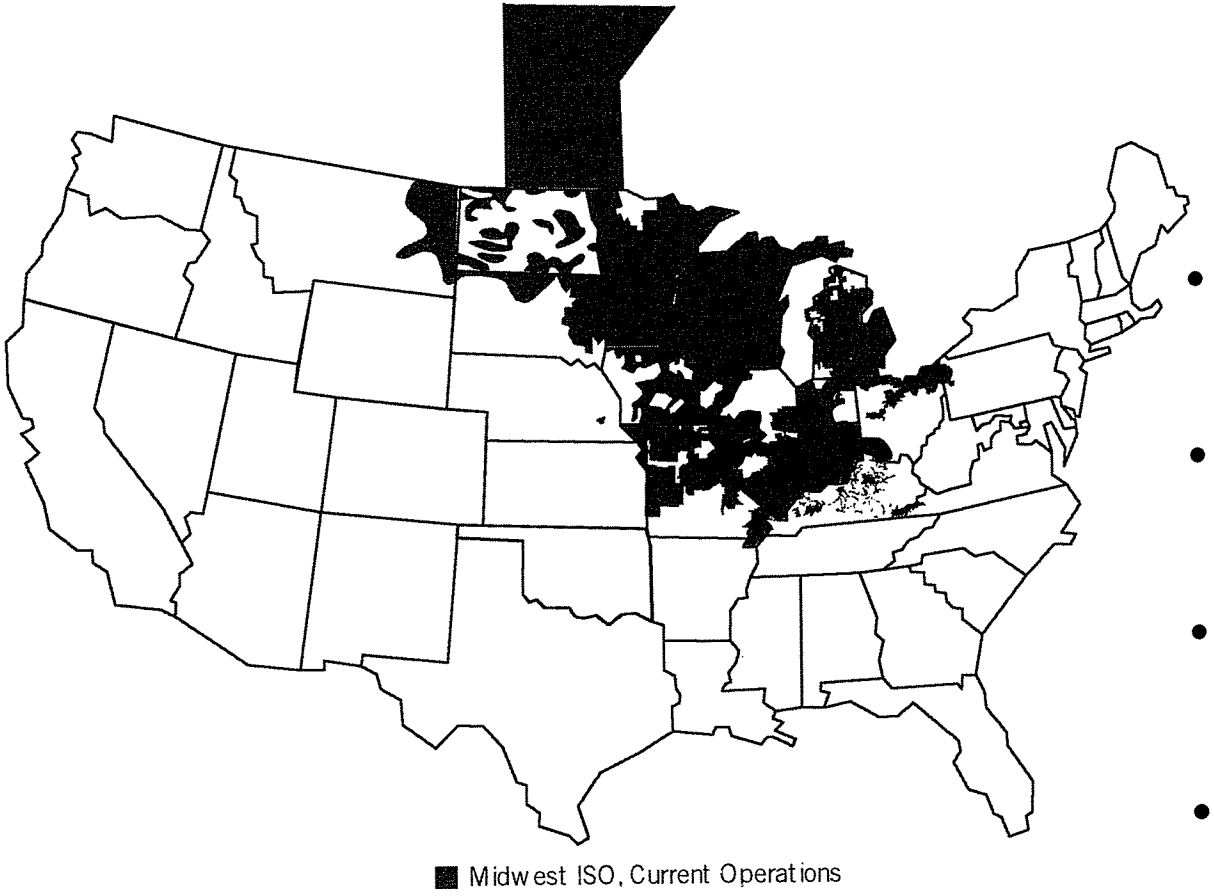
Ron McNamara

November 12, 2004

MISO

Midwest Market Initiative

Midwest ISO Size



- 108,000 MW peak load
- 122,000 MW generating capacity
- 100,000+ miles of transmission lines
- 23 utility members (35 control areas)

MISO

Midwest Market Initiative

Midwest ISO Initial Day 2 Operations

- Energy Markets
  - Day-Ahead and Real-Time
  - Some caveats:
    - Treatment of GFAs
    - NCAs
    - 2 months of cost based offers
- Financial Transmission Rights (FTRs)
- Supply Adequacy
- Ancillary Services
- Seams Agreements

MISO

Midwest Market Initiative

Midwest ISO Energy Markets

- On March 1, 2005, Midwest ISO will start operating bid based energy markets.
  - Day-Ahead Energy Market and Real-Time Energy Market.
- Security Constrained Unit Commitment and Security Constrained Economic Dispatch will be used to clear the energy markets and calculate LMPs.
  - Hourly for Day-Ahead Energy Market
  - Every 5 minutes for Real-Time Energy Market.
    - As a general guideline MISO ≥ 5 minutes, Control Areas < 5 minutes.

MISO

FTR Allocations

- Midwest ISO will provide participants the opportunity to acquire FTRs based on existing service.
  - Annual allocations
    - Participants nominate candidate FTRs for peak and off-peak periods in each season based on existing transmission service.
    - Nominations in four tiers (35%, 50%, 75% 100%) of entitlement.
    - Candidate FTRs pro-rated if necessary to satisfy Simultaneous Feasibility Test (SFT).
- Participants can also request FTRs when submitting new Transmission Service Requests.
    - Midwest ISO will allocate FTRs up to the MW of the service request subject to an SFT.
- FTRs will be allocated for a period of at most one year.

FTR Markets

- Midwest ISO will run auctions in which participants can bid to purchase of offer to sell FTRs.
  - Annual auctions consisting of independent auctions for peak and off peak periods in each season.
  - Monthly auctions consisting of independent auctions for peak and off peak periods for the upcoming month.
- Midwest ISO will facilitate a secondary FTR market.
  - Participants can post bids to purchase or offers to sell FTRs on an electronic bulletin board.
  - Participants negotiate bilaterally and settle between themselves.
  - Midwest ISO will register transfer of FTRs if both parties agree subject to credit requirements.

Supply Adequacy

- Initially, Load Serving Entities will be required to meet the reserve requirements of the appropriate NERC regions and states.
- Midwest ISO will not run a capacity market at the start of the markets.

Ancillary Services

- Load serving entities will self-supply ancillary services or acquire them through the Control Areas.
  - At market start, the Control Areas will provide necessary ancillary services (e.g. reserves, regulation) at cost based rates.
- Midwest ISO will not run Ancillary Service Markets at market start.

Seams Agreements

- Midwest ISO is negotiating seams agreements with neighboring RTOs and Control Areas.
- Overview:
  - Identify flowgates that are affected by operations in MISO and neighbors.
  - Allocate capacity on the flowgate to MISO and other entities based on historic use.
  - In scheduling and dispatch of energy markets, Midwest ISO will enforce limits on such flowgates based on its share.
  - A party to a seams agreement can request that the other party reduce its use of a flowgate and pay that party's shadow price for capacity if request is granted.

Upcoming Challenges

- Implement Capacity Market
- Implement Ancillary Services Markets
- Develop longer term FTRs
- Conclude seams agreements with:
  - SPP, TVA, IMO, and non-MISO members of MAPP
- Continue work on Joint and Common Market with PJM

Capacity Market

- Develop Capacity Market to acquire capacity to meet NERC/state requirements for reserves:
  - Generators can offer capacity
  - Load Serving Entities can self-supply capacity
- Determine constraints that are to be met in acquiring capacity.
  - Local constraints?
  - Transmission constraints?
  - Operating characteristics?
- FERC requires that MISO capacity market be compatible with that in PJM.

Ancillary Service Markets

- Develop markets in which generators can offer to supply ancillary services.
- Which ancillary services should be included?
  - Reserves (spinning, non-spinning, supplemental)
  - Regulation
  - Load-following
- How should substitution effects be included?
  - Generation capacity may be used to supply reserves or energy in the energy markets.
  - Coordination of AS and Energy markets is needed.

Long Term FTRs

- FTRs with terms longer than one year are desired.
  - FTRs for transmission upgrades for the life of the upgrade.
  - To facilitate long term bilateral contracts.
- How should such long term FTRs be treated.
  - There will be a mix of short and long term FTRs.
    - In the allocation problem
    - In the auctions

Midwest Market Initiative

Moving toward Joint and Common Market with PJM

- The seams agreement between MISO and PJM is a step toward a joint and common market with PJM.
- How can rules be developed that will:
  - Coordinate trading of energy across the markets.
  - Result in convergence of prices at interface points between the markets.
  - Enable participants to receive FTRs in both PJM and MISO to allow them to hedge congestion costs for transactions that span both markets.

MISO

Loss Hedging Instruments

- If a party sends power from between two points, the party will pay:
  - Marginal cost of congestion between the two points
  - Marginal cost of losses between the two points.
- FTRs allow participants to hedge the congestion costs for their transactions.
- Develop mechanisms for hedging losses.