OVERVIEW OF REGIONAL ELECTRICITY MARKET INITIATIVES IN THE U.S.

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Overview of presentation

- Current issues of interests
- Regional transmission organization (RTO)
- Comparisons
- Jurisdiction, regulation, and state interaction
- Multi-state organization structure and details
- Summary

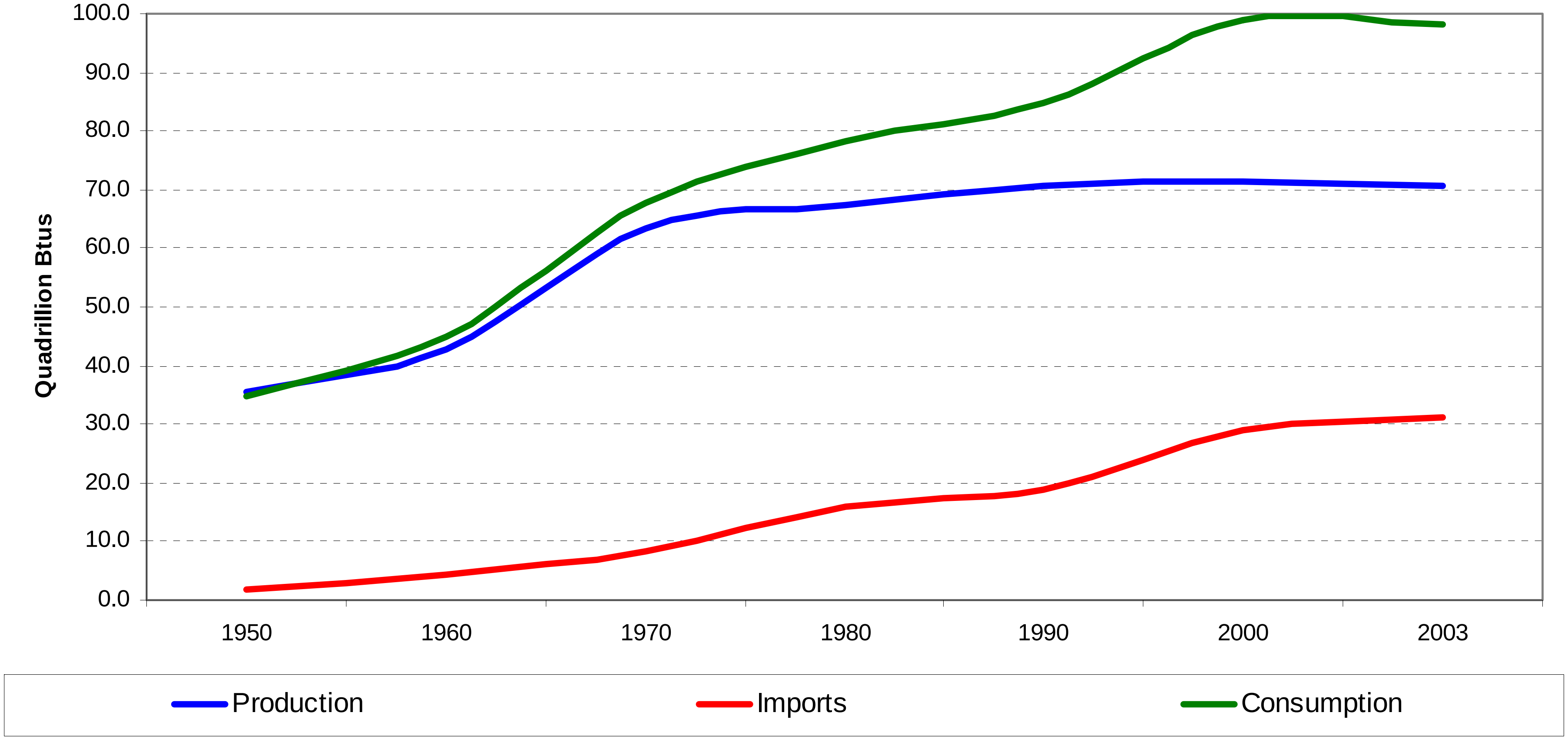
Around the nation

- Regional differences
- Federal – state relationship
- Changes in the composition of FERC
- Mega-mergers
- Convergence of industries
- Long-term effects of federal Energy Policy Act (EPAct)

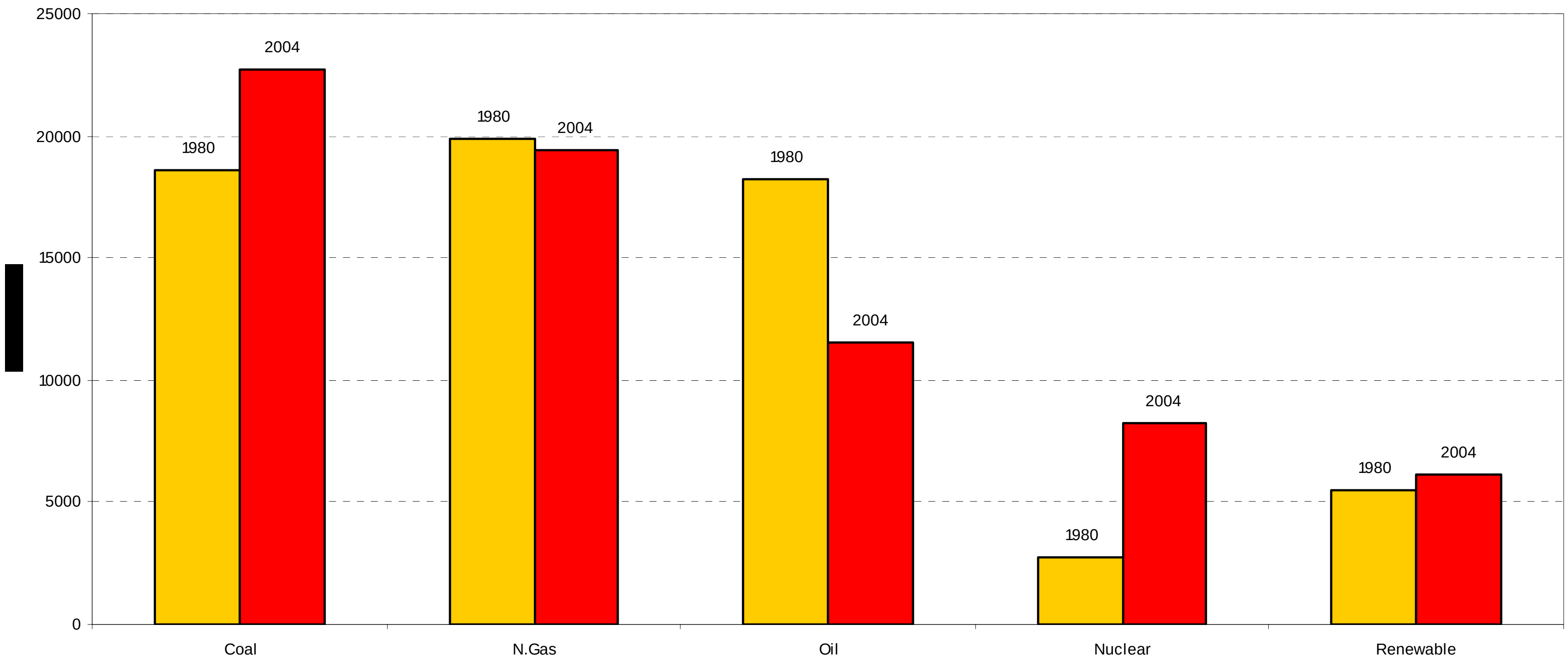
Current Issues of Interest

- End of rate caps
  - Resulting in high electricity prices
  - Legislative and consumer reactions
- Increasing load requirements
  - Requires new generation, transmission, demand response
- Environmental regulations conflicts with economic realities
- Regional differences

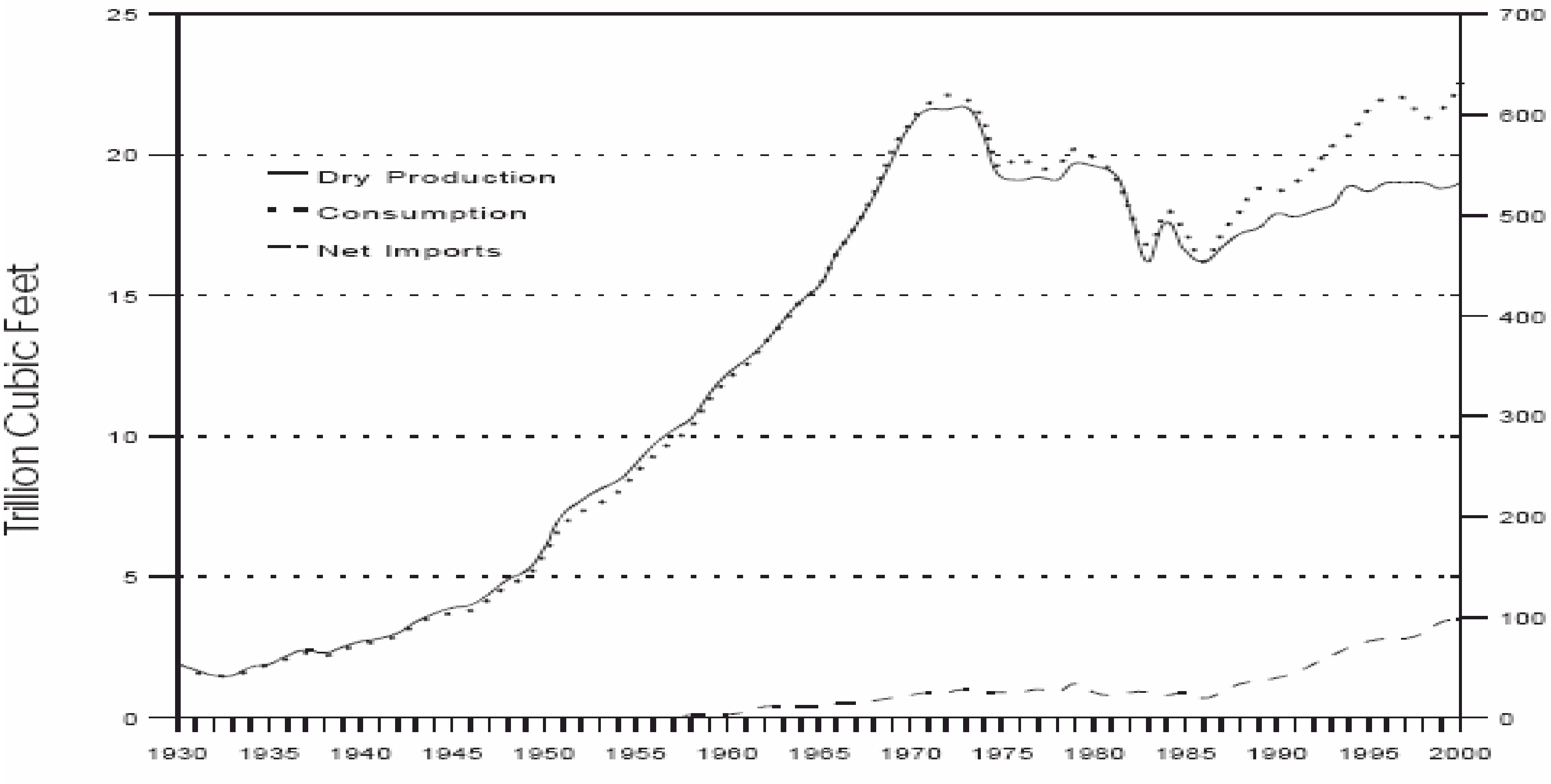
U.S. Energy Trends



U.S. Energy Production

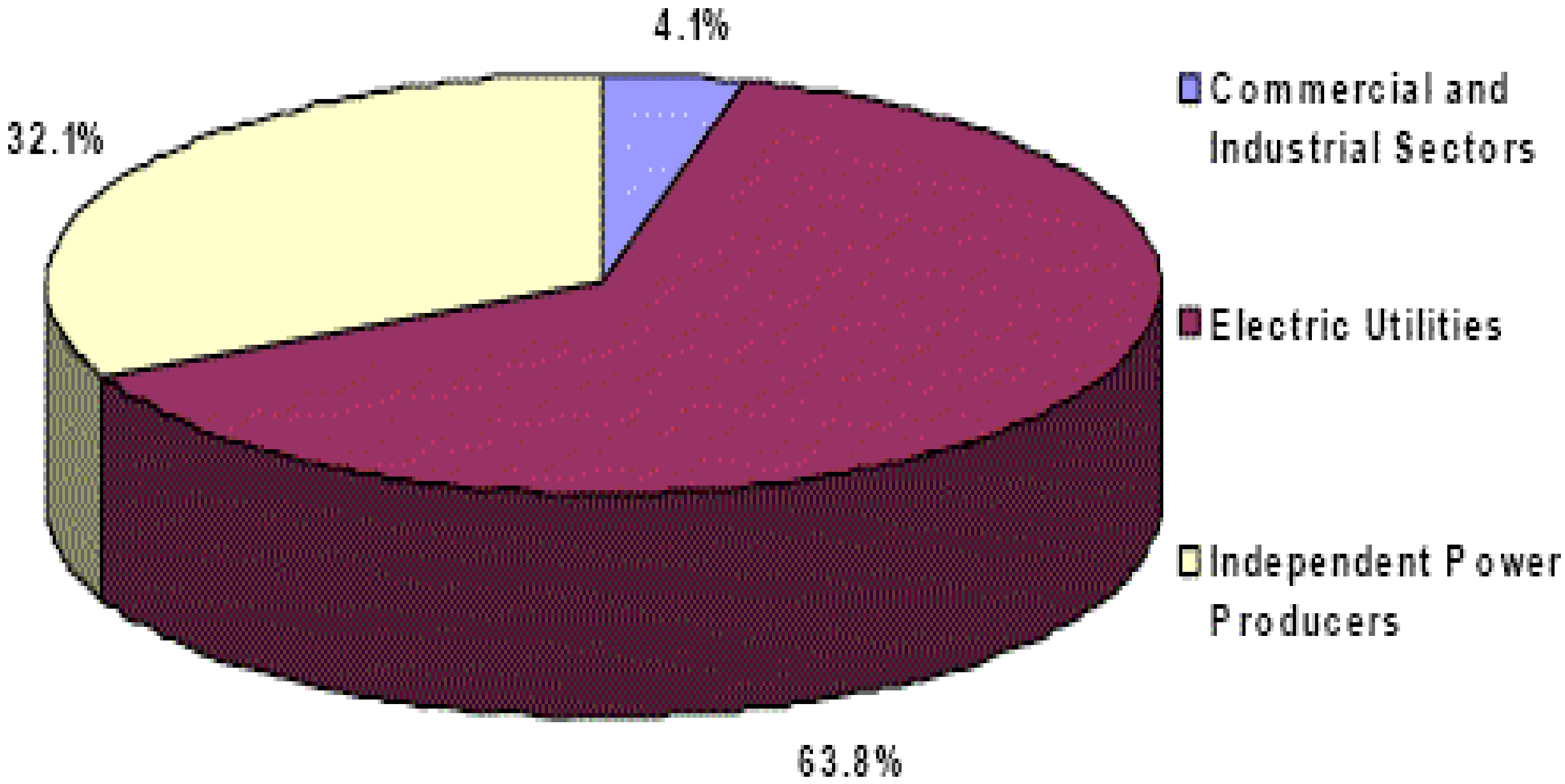


U.S. Natural Gas Trends



Source: EIA

Electric Generation by Sector

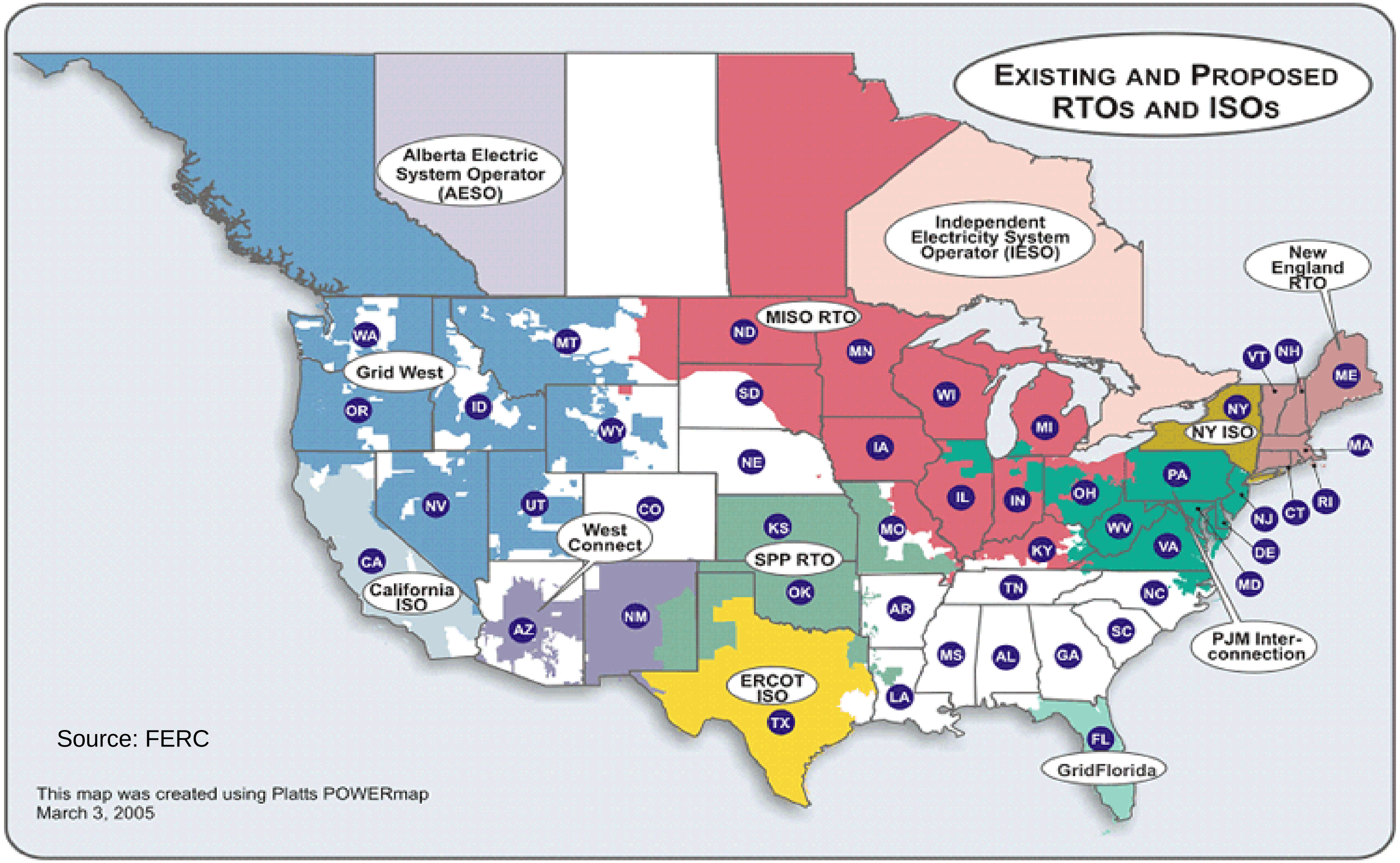


Source: EIA

Around the region

- PJM – from power pool to RTO
- Expanded from Mid-Atlantic to whole or parts of 13 states and DC
- Grid operator and bulk electricity market
- Market monitoring
- Building of generating assets; RPM
- Transmission upgrades and new corridors/lines
- Positions among restructured states and states with vertically integrated companies

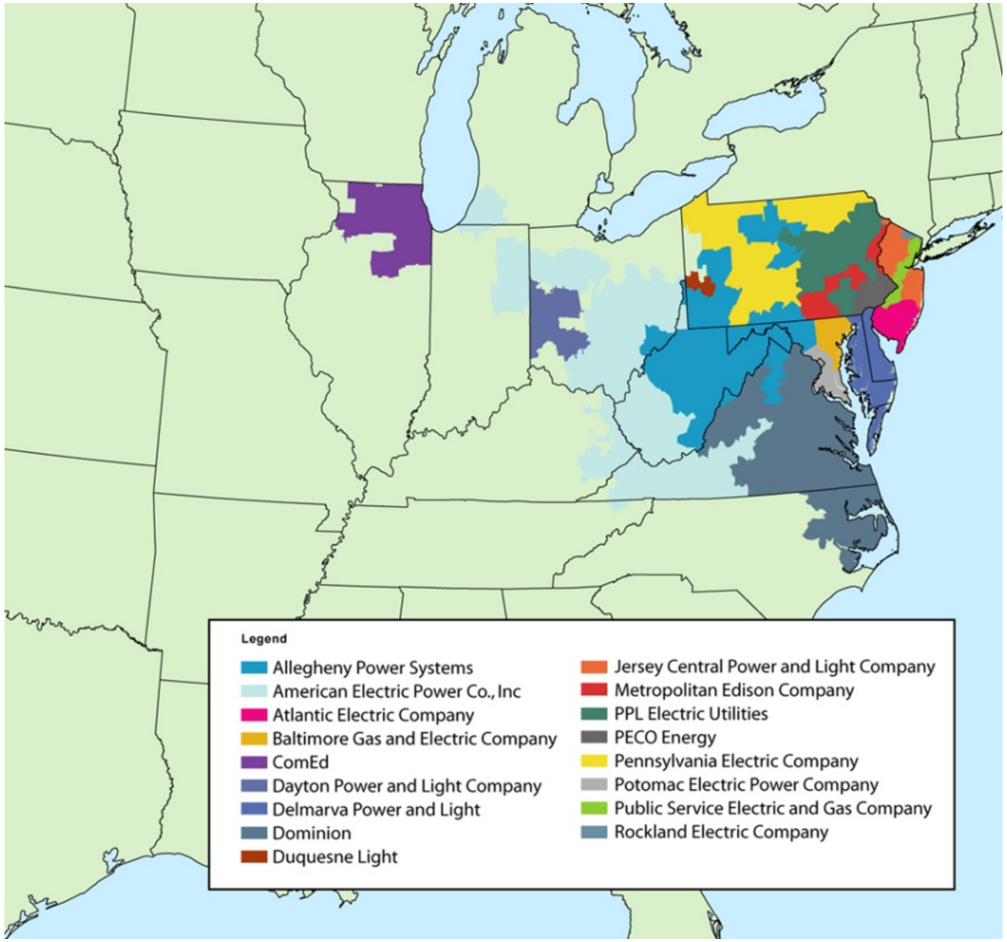
Regional Transmission Organizations



Source: FERC

PJM Service Territory

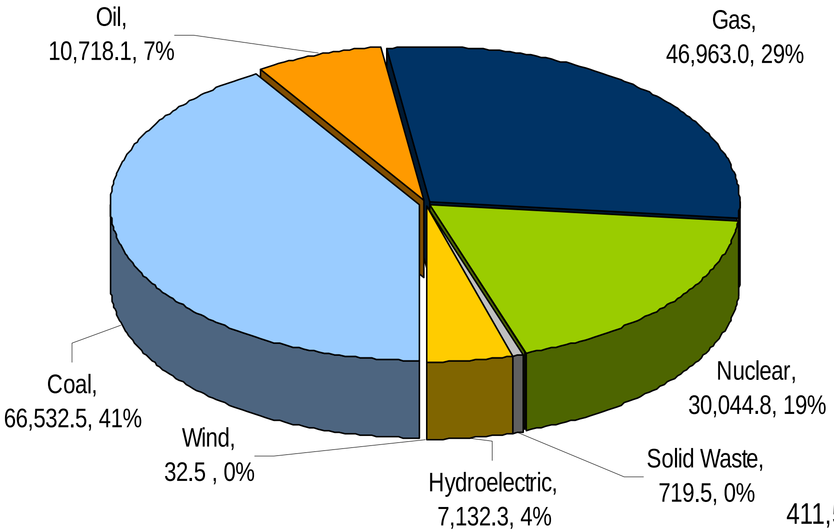
All or parts of:
- Delaware
- District of Columbia
- Illinois
- Indiana
- Kentucky
- Maryland
- Michigan
- New Jersey
- North Carolina
- Ohio
- Pennsylvania
- Tennessee
- Virginia
- West Virginia

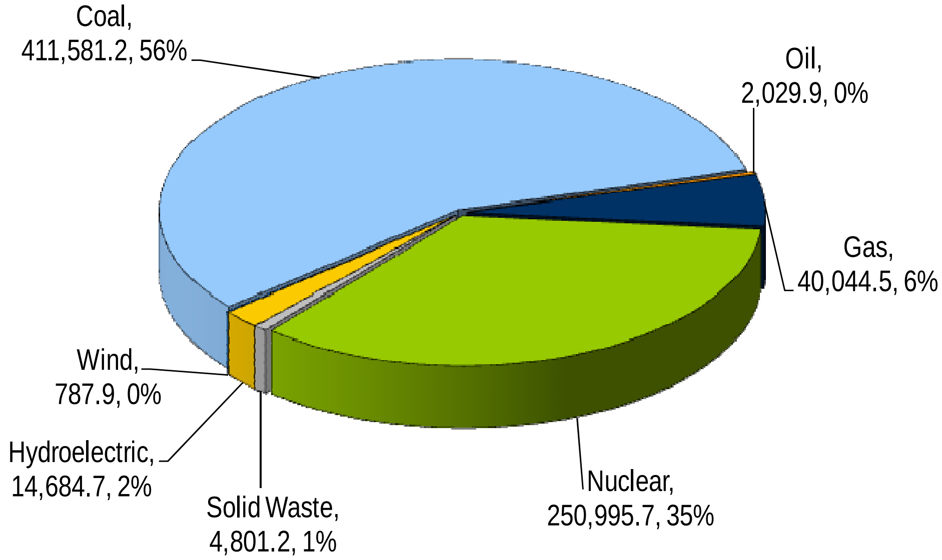


PJM: Regional Electricity Market

- Population - 51 million
- Generating sources - 1,271 with diverse fuel types
- Generating capacity – 165 GW
- Peak load – 145 GW
- Annual energy delivery – 729 TWh
- Transmission lines - 56,250 miles
- Member energy companies - 501
- Cumulative billing – over $28 billion since 1997
- Neutrally and independently operates the largest wholesale electricity market in the world

PJM: Fuel Resources and Output





Comparison of Areas

ERRA Region

- 23 countries
- Population 412 million
- Energy 1624 TWh/year
- Fossil fuel 53%
- Nuclear 14%
- Hydro 25%

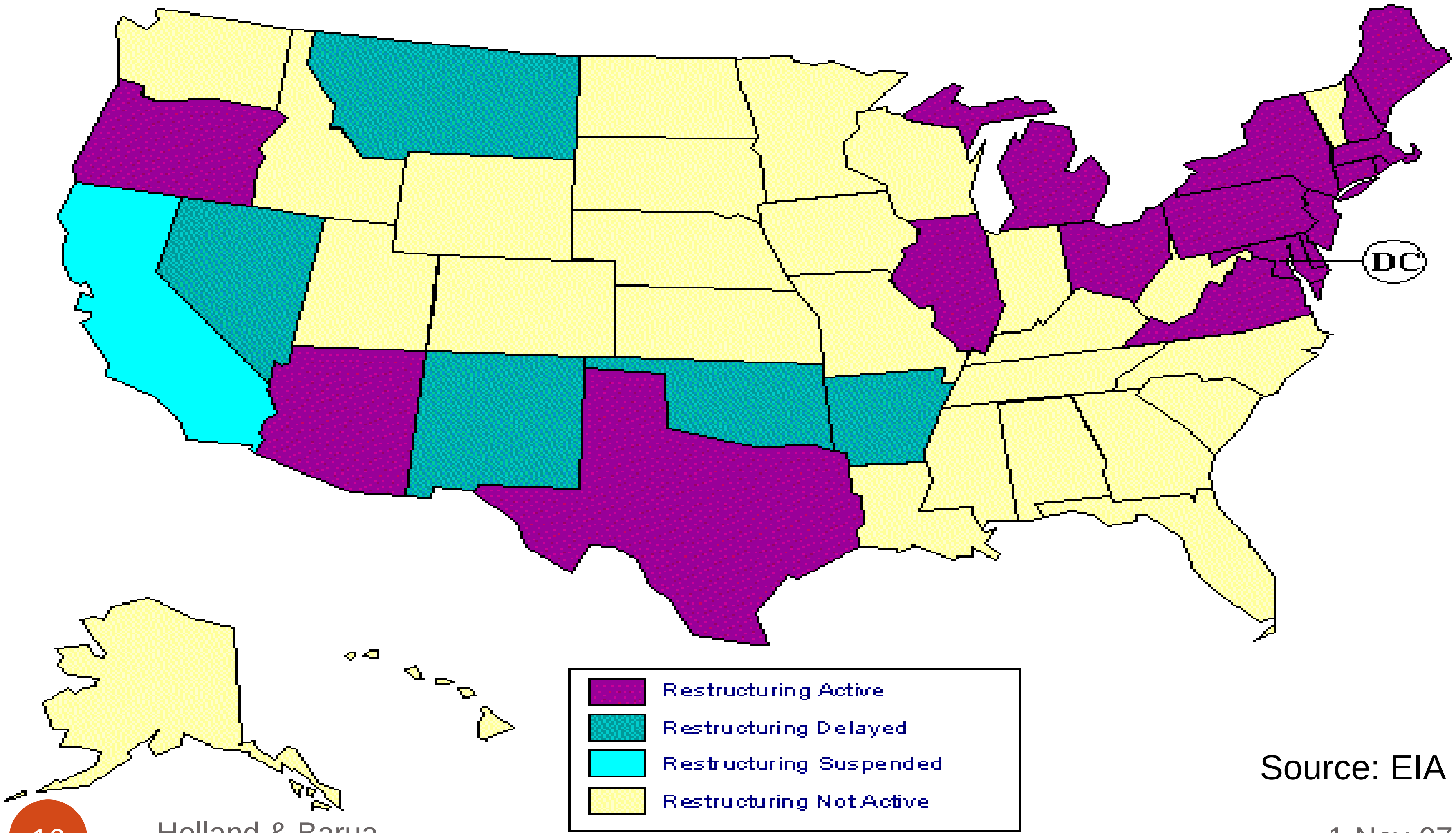
PJM Service Area

- All or parts of 13 states and DC in the U.S.
- Population 51 million
- Energy 729 TWh/year
- Fossil fuel 62%
- Nuclear 35%
- Hydro 2%

Activity in States within PJM

- Almost all of the states in the PJM region have:
  - restructured their electricity utility industry
  - deregulated generation
- Generation can be built anywhere by anybody
- Wholesale/bulk energy output is sold either as a bilateral contract or in PJM's open market
- States still have responsibility of retail/distribution rates
- Retail rates dependent on wholesale market prices

U.S. Electric Choice by State



Source: EIA

Legislation, implementation, regulation

- New challenges for the regulatory community
- Involvement in ISO/RTO matters
- Regulatory practices gradually include monitoring of non-jurisdictional entities
- *How does one ensure safe and reliable electric service with no jurisdiction over generation?*
- Provider of Last Resort (POLR);
  Default Service Provider

Legislation, implementation, regulation

- POLR / Default Supplier designation
- Method of supply acquisition
- Auctions or bids
- Oversee the process
- Affiliate concerns
- Type of portfolio; resource allocation
- Drastic changes in rates/prices
- Rate shocks: a new challenge

Legislation, implementation, regulation

- Clash between economic and environmental regulatory issues
- Stringent environmental controls could lead to shutting down generating plants . . .
  - . . . which could lead to less electricity supply and higher prices . . .
  - . . . which could lead to lower economic development . . .
  - . . . but utility commissions do not regulate generators . . .
  - . . . *so what's important: environment or jobs?*

Major EDCs in Pennsylvania

- PECO (1.54 million)
- Pennsylvania Power & Light Company (1.35 million)
- Allegheny Power/West Penn Power (701 000)
- Duquesne Light Company (588 000)
- First Energy/ Penelec (586 000)
- First Energy/Met Ed (521 000)
- First Energy/Pennsylvania Power Company (157 000)
- UGI (62 000)
- Citizens Electric of Lewisburg (6 500)
- Wellsboro Electric Company (5 800)
- Pike County Light & Power Company (4 200)
- *TOTAL (approx. 5.7 million)*

Open access

- Since the restructuring of the electricity industry, the Commission no longer has jurisdiction over the generation of power.
- Jurisdiction only over electric companies distributing electric supply to customers.
- Transmission is a federal matter – FERC.
- PJM does not own any transmission assets.
- The transmission wires are still owned by the electric companies in each state, or in some cases, multi-state companies.

Open access

- Basic concept of open access is that the company that owns the transmission wires shall give equal access to any generating company without any bias/favoritism towards its generating affiliate.
- Information for open access has to be available equally all market participants.

What is Electric Choice?

- Electric customers in Pennsylvania were among the very first people in the United States to be able to choose the company that generates their electricity.
- In 1996, the Electricity Generation Customer Choice and Competition Act became the law.

What is being chosen?

- Choose the company that generates electricity.
- Electric generation supplier (EGS).
- Current electric distribution company (EDC) still provides the transmission and distribution parts of your electric service.
- The PUC will continue to oversee electric service and competition in Pennsylvania.
- The quality, reliability, and maintenance of electric service will not change under this law.

Why want electric choice?

- Shop around for the price and type of service that best suits your needs.
- Different things will be important to each customer.
  - Whether the supplier offers different services and prices.
  - Where the energy is produced.
  - Whether the supplier uses renewable energy sources.
  - Whether the supplier offers a budget-billing plan.

Power purchases

- Bilateral contract
- Spot markets: Day-ahead or hourly
- Under default service, could be acquired in a competitive process such as an auction and/or bids
- Obligation to ensure reliable delivery – possible penalties for non-delivery

New electricity suppliers

- Affiliates of generating companies.
- Companies without any generation.
- Brokers and aggregators.
- Licensed as retail electricity suppliers by state based on different criteria such as financial and technical capabilities.
- Have to be or have relation with members of PJM to procure electricity in the wholesale market.

Licensing of Suppliers

- The PUC must license electric generation suppliers offering service in Pennsylvania.
- Currently, over 40 licensed suppliers.
- Licensing requirements include:
  - The supplier is bonded or is “financially fit.”
  - The supplier meets technical and financial guidelines established by the PUC.
  - The supplier agrees to uphold consumer protection laws and reliability standards.
  - The supplier supports the consumer education requirements.

Post-restructuring rate cases

- As electric distribution companies (EDCs) end their transition periods, each EDC files a case to set their non-energy rates.
- The first one completed recently was PP&L; Commission’s decision was well received by majority of stakeholders.
- The last one will be around 2010-11.

Provider of Last Resort

- The default supplier, usually an EDC, who provides electric supply to a customer who does not choose or is not served by an EGS.
- Procurement at the wholesale electricity market to be done via auction or bids.
- EDC procurement based on PUC regulations.
- Staggered years for EDCs in Pennsylvania, as late as 2010.

Information to Customers and Disclosure by Suppliers

- Information shall be in a clear and understandable format that allows consumers to compare prices and services uniformly.
- Customers must receive written confirmation of the terms of their agreements.
- Suppliers must provide written notification of the expiration date of a customer agreement, and whenever it proposes changes to that agreement.
- EDCs are required to release all customer name, address and usage information to suppliers, unless the customer tells the utility to not release the information.

Consumer Protection

- The law requires EDCs to continue providing protections and services to assist low-income customers.
- The PUC handles complaints about EDCs and EGSs related to billing, meter reading, credit and collections.
- Unauthorized transfer of utility services (slamming) without the customer's permission is prohibited.
- All agreements with a EGS on the telephone or over the Internet has to be confirmed by the EGS in writing in an email, regular mail or in-person hand-delivery.
- When a customer does not choose an EGS or if an EGS declines or cancels service for any reason, the local EDC is obligated to provide power.

Alternative Energy

- Alternative Energy Portfolio Standards (Act 213)
- Enacted November 2004; effective February 2005
- Working group formed to draft rules and regulations
- Solar, wind, hydro, geothermal, biomass, methane, fuel cells, waste coal, demand-side management (DSM), distributed generation (DG).
- Alternative energy credits trading platform.

Societal benefit programs

- Federal and/or state programs
- Affordable access
- Who pays
- Targeted subsidies
- Regulatory instruments
- Financial instruments

Societal benefit programs

- Customer Assistance Program (CAP)
- Budget Billing
- Customer Assistance Referral and Evaluation Program (CARES)
- Hardship Funds
- Low-Income Usage Reduction Program (LIURP)
- Low Income Home Energy Assistance Program (LIHEAP)
- Weatherization Assistance Program (WAP)

Societal benefit programs

- Can lower monthly utility bill
- Determine what the customer can pay verses the cost of energy used
- Residential customers may request budget billing at any time
- Each monthly bill will be the same amount
- Helps customers with special needs

- May help find ways to pay your utility bill
- Family emergencies, medical emergencies
- Goal is to provide support and direction to help customers pay their utility bills
- Help customers lower the amount of energy used each month
- Install energy saving features in your home to help reduce bills

States’ Relationship With PJM

- 1998: PJM and state utility commissions in the PJM region (Mid-Atlantic only) sign MOU
  - Creates a State Commission Liaison Committee
- State Commission Liaison Committee
  - Direct channel of communication between PJM’s Board of Managers and all of the state commissioners in the PJM region
- PJM expands west and south
  - To include all 14 jurisdictions, the Organization of PJM States, Inc. (OPSI) is formed

Background of OPSI

- The Organization Of PJM States, Inc. (OPSI) was established in May 2005 as a non-profit corporation
- Its primary purpose is to act as a liaison group to PJM Interconnection, LLC (PJM), its Board of Managers, and its Market Monitor
- OPSI is an NGO recognized by the FERC as a "regional state committee" and is not a member of PJM
- Funded by a FERC-approved PJM tariff as a small charge on per MWh basis
  - *Less than one cent per capita annually*

Member State Agencies of OPSI

- **Delaware**
  Public Service Commission
- **District of Columbia**
  Public Service Commission
- **Illinois**
  Commerce Commission
- **Indiana**
  Utility Regulatory Commission
- **Kentucky**
  Public Service Commission
- **Maryland**
  Public Service Commission
- **Michigan**
  Public Service Commission
- **New Jersey**
  Board of Public Utilities
- **North Carolina**
  Utilities Commission
- Public Utility Commission of
  Ohio
- **Pennsylvania**
  Public Utility Commission
- **Tennessee**
  Regulatory Authority
- **Virginia**
  State Corporation Commission
- Public Service Commission of
  West Virginia

Board and Voting Structure

- OPSI has 14 members as its Board of Directors with one from each jurisdiction
- Each have an equal vote on all issues
- Other commissioners and staff members of 14 jurisdictions are members of OPSI
- Budget funds for all its members to travel to OPSI-related meetings and conferences, annual meeting in September, and 2-person staff
- Most of OPSI’s other meetings are held via teleconferences.
- Elections are held every year for a president, vice-president, secretary, treasurer, and three regional representatives
- Presidency rotates among three regions (Mid-Atlantic, South, West)

Regular Activities

- Monthly meetings via teleconference except during the Annual Meeting
- Board of Directors vote
- Other commissioners and staff members participate
- Non-voting participation in various PJM meetings
- Monthly teleconferences with PJM's technical staff
- OPSI members identifies relevant issues and PJM makes technical staff available to respond
- Organize workgroups (WG) based on current issues

Resolving Issues

- When an important issue needs background information and deliberation, a WG is formed
- Chaired by one or more commissioners
- Other commissioners and staff from all member state commissions <u>who are interested in that issue</u> join that WG
- OPSI Board directs the WG to deliberate on the issue and recommend a position to the OPSI Board for further deliberation and/or vote for an official OPSI position

Resolving Issues

- Member jurisdictions are diverse in geography and type of regulation leading to diverse positions on any given issue
- Three geographical regions: the Mid-Atlantic, the South, and the West
- Some members have retail choice and some have traditional regulation of the electricity distribution industry
- Wholesale generation is not under the purview of the state regulators
- Some states are net exporters of electricity and some states are net importers of electricity
- Dominant resources for electricity generation vary by state, such as, nuclear, coal, natural gas, oil, etc.

Recent Examples

- Recent examples of how OPSI decides on issues of importance
  (without divulging any confidential OPSI discussions):
  a) Market monitoring in PJM
  b) Transmission cost allocation in PJM
  c) Response to PJM's proposed Strategic Plan

Market Monitoring in PJM

- When OPSI believed that PJM's market monitoring process was not effective, OPSI assigned it to a working group
- This WG deliberated on the issue and came with a consensus recommendation for the OPSI Board
- OPSI Board unanimously approved the recommendation and sent its position to the PJM Board of Managers and PJM's senior executives
- OPSI also presented the same position before FERC at a FERC technical conference on the same issue
- OPSI filed a complaint before FERC on the same issue and the case is progressing with the FERC ordering settlement discussions

Transmission Cost Allocation in PJM

- Allocation of costs for transmission construction and improvement
- OPSI assigned it to a working group
- PJM suggested that OPSI file a position before the FERC because the FERC would pay attention to position put forth by 14 jurisdictions
- Two possible positions possible:
  - to socialize all transmission costs
  - to assign such costs to beneficiaries
- Certain action by the FERC kept the issue on hold
- Important to note that the deliberation process in OPSI ensured that all OPSI members understood the issue from each member's perspective
- Result is members becoming well informed for any future actions

Response to PJM's Strategic Plan

- PJM issued its new Strategic Plan
- OPSI members discussed it in broad terms
- Certain positions were articulated for further deliberation
- Some OPSI members have to deliberate within their states to decide on a vote
- Sometimes this creates time constraints
- With time for responding being of essence, the OPSI Board decided that it would not have an official OPSI response
- Encouraged each state to file their individual response

Working Relationships

- Different results for the same organization:
  - consensus position
  - diverse positions
  - individual positions
- Differences of positions are acceptable in a multi-jurisdictional organization
- Important that each member respect the position of the others
- Members become well-informed about the issues
- Each member jurisdiction has its own laws and regulations on arriving at its individual position
- Time constraints sometimes for filing consensus positions
- *Most valuable result:*
  - *All members become well informed by learning about each other's positions on any given issue*
  - *Helps in the final action of each member being effective regulators whose main focus is to serve the public*

Are we on the right track?

- Alternative/renewable energy in different states
- Juxtaposed with competitive activity
- Success and failures
- Enhancement or barrier to competitive activity
- Successful implementation steps
- Barriers to competitive activity
- Corrective steps for a better competitive state
- Regulatory and legislative action/steps

In closing . . .

- Changes in utility regulation:
  energy, telecom, water
- New entities and issues involved
- Less rate cases in post-restructuring era
- Leading to gap in expertise which will be needed again
- <u>Consumer education and protection is a major challenge</u>