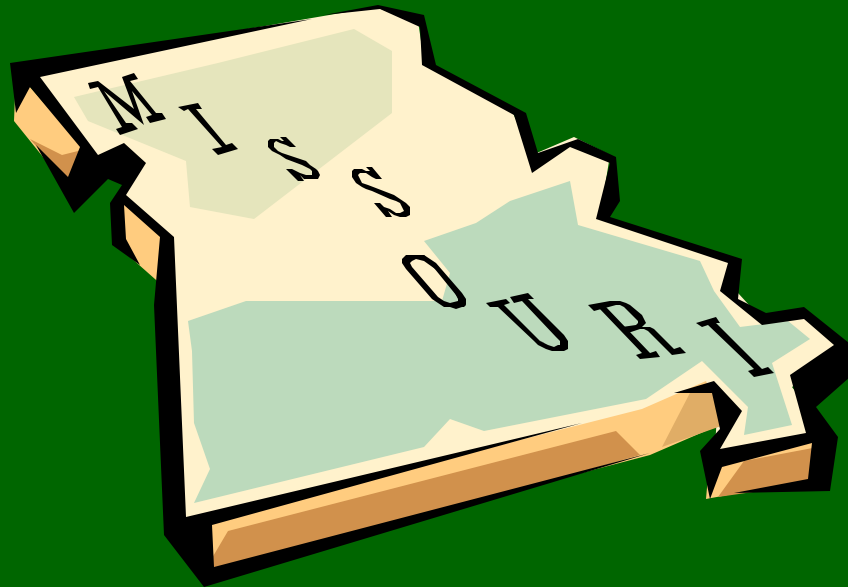


# ERB and NARUC Partnership

Tuesday, February 22<sup>nd</sup>, 3:15 to 4:30

## Discussion of State and Regional Electricity Market Issues Confronting the Missouri PSC



# Where Is Missouri?



# **Electric Utility Structure in Missouri**

**Pennsylvania and Missouri have different  
regulatory and market structures.**

# **Electric Utility Structure in Missouri**

- **Not “Restructured” – Customers Served by Vertically Integrated Utilities That Own & Operate Generation Plants & Wires**
- **A Relatively Low Cost State – Significant Percentage of Electric Energy & Capacity From Coal and Nuclear Power Plants**

# **Electric Utility Structure in Missouri**

- **Our Legislature Has Considered Restructuring Our Regulated Electric Utilities To Provide Consumers With Choice**
- **Decided Not To Restructure**
- **At This Time Some Discussion On Restructuring Continues But No Legislation Has Been Proposed**

# Electric Suppliers in Missouri

**Regulated Investor-Owned Utilities (IOUs) –  
Own & Operate Generation Resources,  
Transmission & Distribution Infrastructure**

- AmerenUE Is Largest (*over 1 million customers*)
- Kansas City Power & Light
- Aquila
- Empire District Electric



# Electric Suppliers in Missouri

## Municipal Providers – Typically Owned & Operated by City & Locally Appointed Boards

- City of Springfield (*over 100,000 customers*)
- City of Independence
- City of Columbia
- Several Small Cities

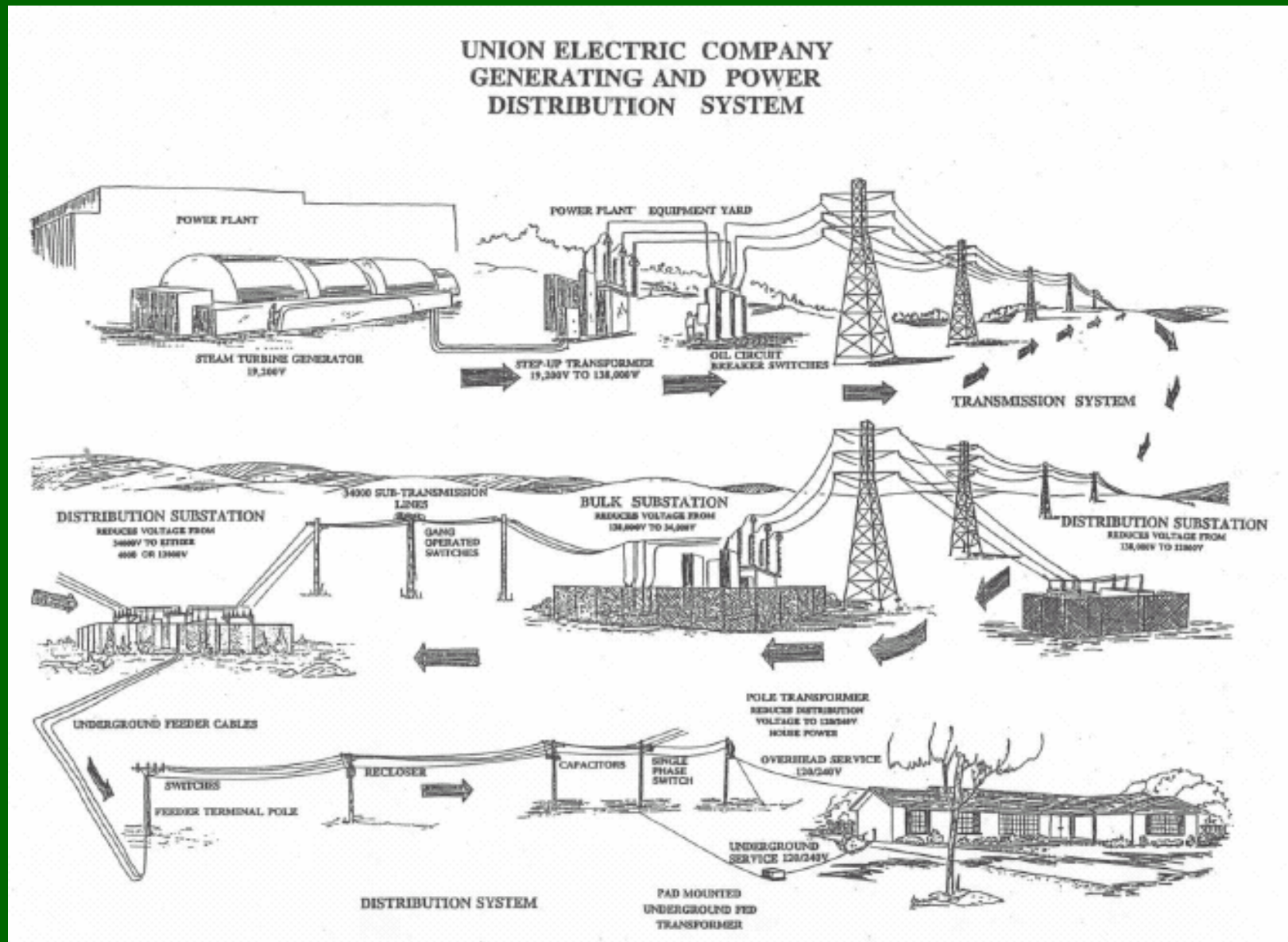
# Electric Suppliers in Missouri

**Cooperatives – Owned & Operated by  
Membership & Appointed/Elected  
Representatives**

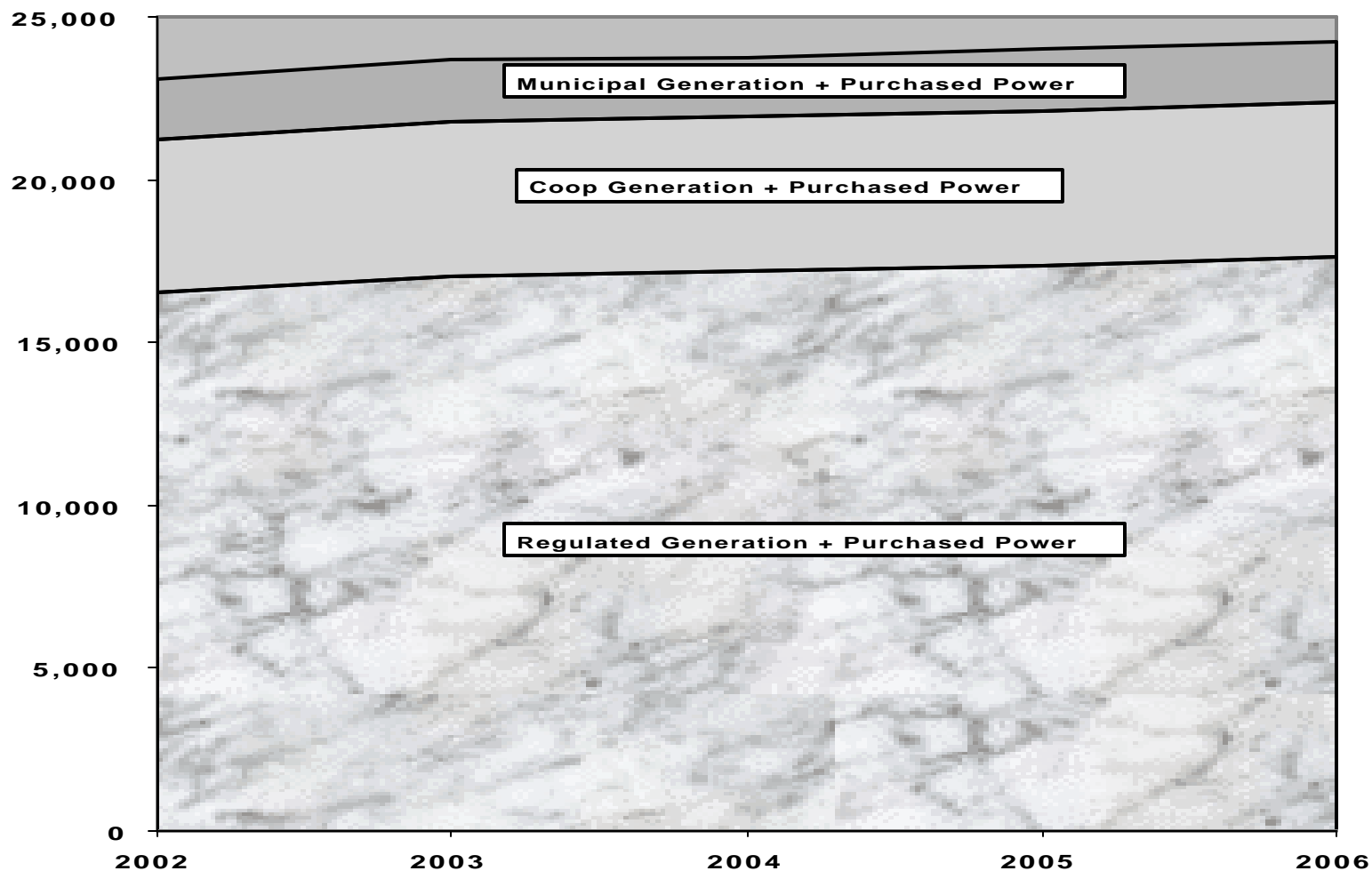
- Associated Electric Cooperatives, Inc.
  - Six Generation & Transmission Cooperatives
  - Forty Distribution Cooperatives
  - Serve Most of the Rural Areas in Missouri



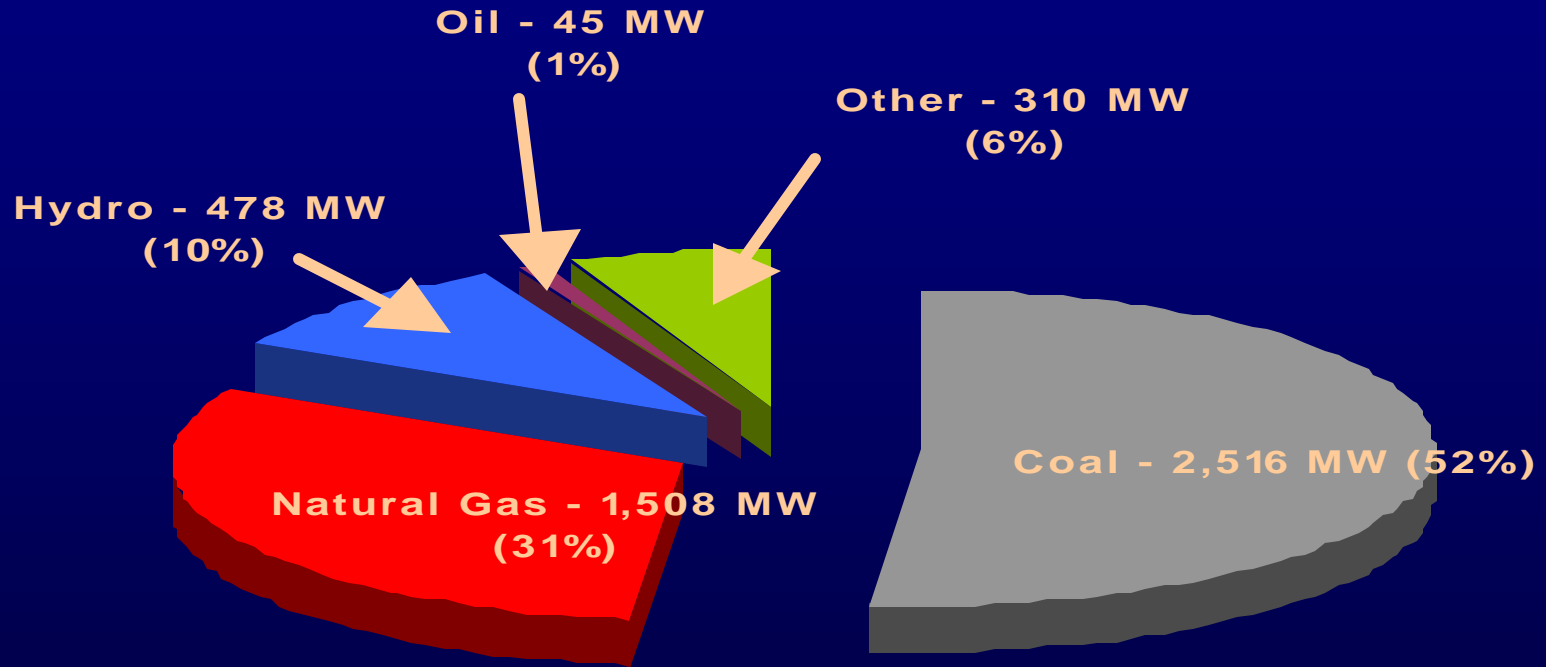
# Typical Electric Generation & Delivery System



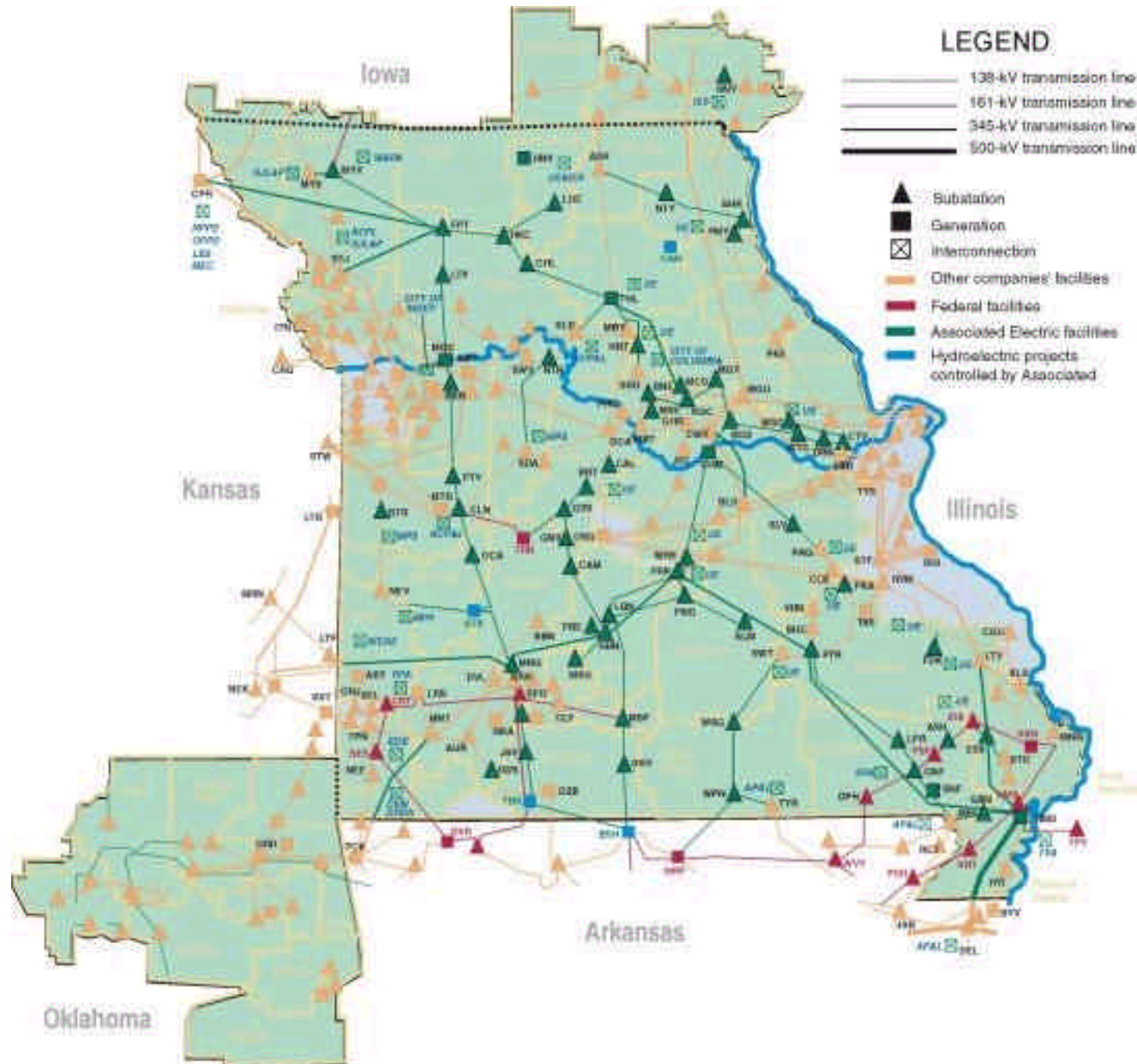
# Electric Suppliers in Missouri (MW)



# Missouri Cooperative's Generation Capacity by Fuel Source



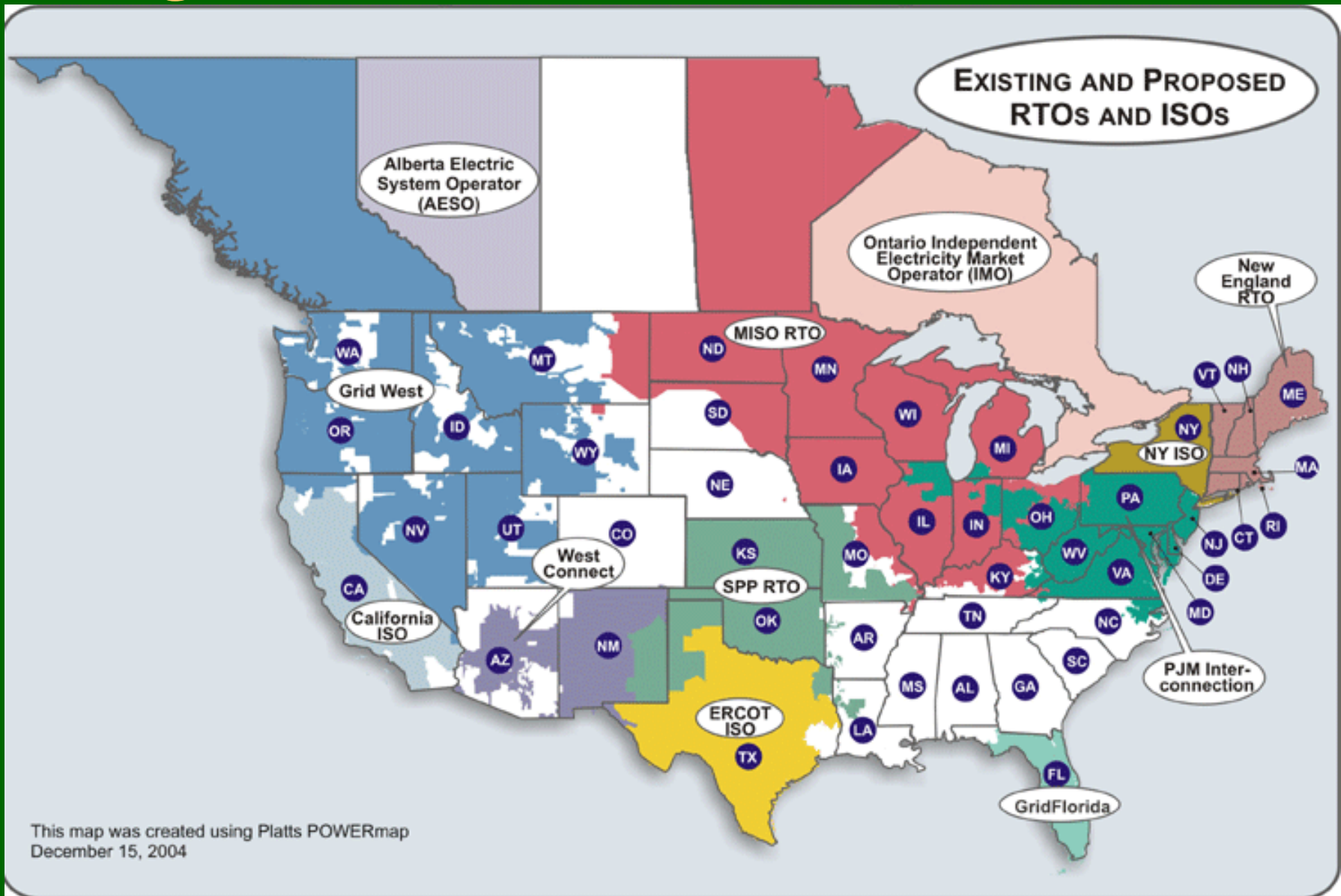
# Missouri's Transmission Network



# **Regional Electric Market Issues - Missouri**

**Missouri Has a Significant “Seam”  
Between Two Regional Transmission  
Organizations (MISO & SPP RTOs).**

# Regional Electric Market Issues - Missouri





# Zambia Grid & Generation Sources

- A Few Years Ago Zesco Ltd. Appeared to be Proposing to Build at Least 10 New Power Stations (Hydroelectric) and Had a Number of Rehabilitation Projects Ongoing and/or Proposed

- A Very Understandable Focus Given Optimal Resources & Desire to Serve Increasing Percentage of Population With Low-Cost Reliable Power



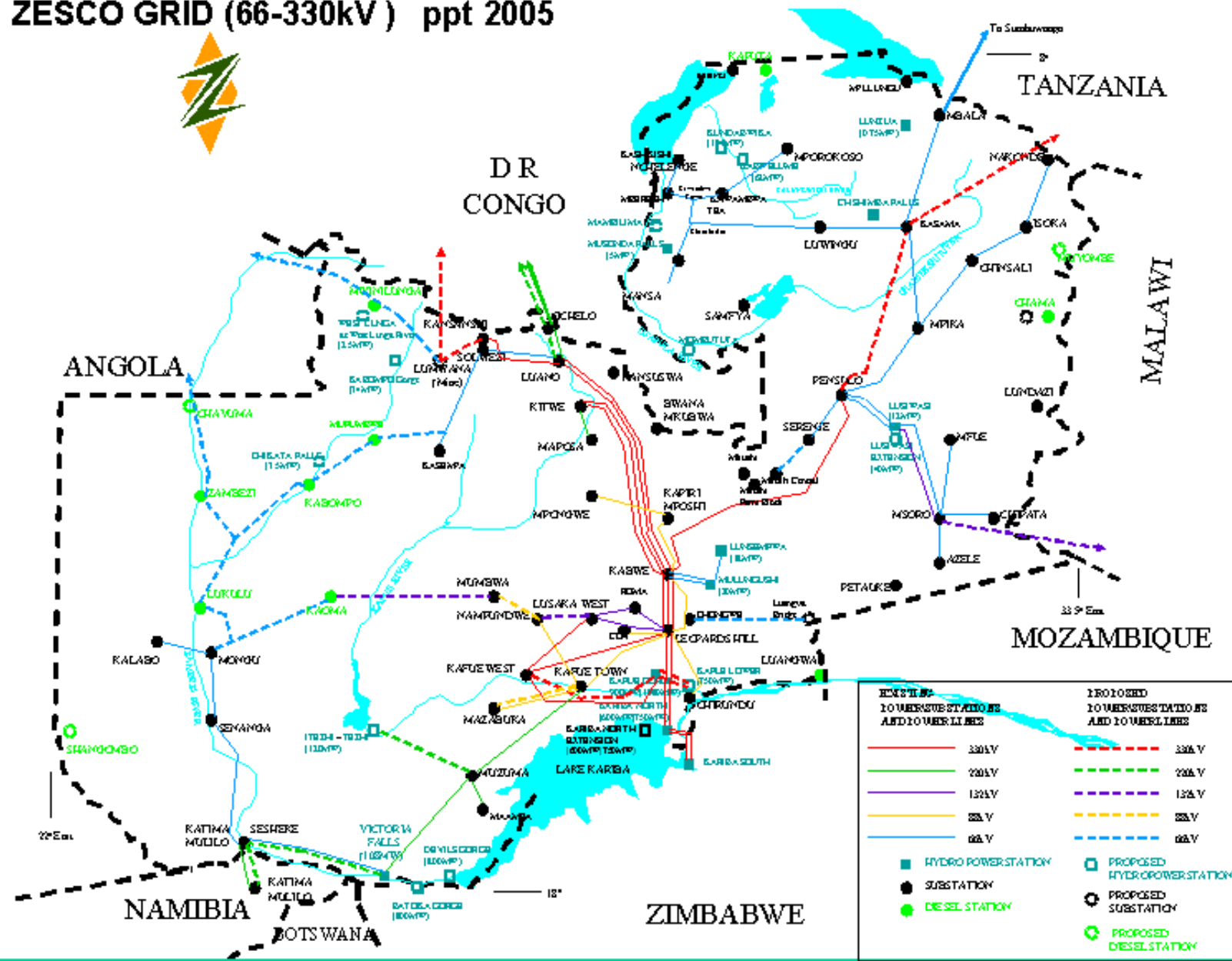
## **Zambia Grid & Generation Sources**

- An Electric Supply System That Provides Least Cost Power Efficiently and Reliably is Critical to Any Country's Economic Stability & Growth.





# ZESCO GRID (66-330kV ) ppt 2005



# **Regional Electric Market Issues - Missouri**

**Restructuring Regional Electricity Markets Is A  
“Hot” Topic In Missouri.**

**We Are Trying To Answer Some Hard Questions.**

# **Regional Electric Market Issues - Missouri**

**Does The Formation of Regional Transmission Organizations (RTOs) Remove Too Much Of The Oversight And Control Provided By The State Commissions?**

# **Regional Electric Market Issues - Missouri**

**Will The Electric System Be As Reliable?**

# **Regional Electric Market Issues - Missouri**

**Will There Be A Net Benefit To Native-Load  
Customers If Wholesale Power Markets Are  
More Competitive/Efficient?**

**Will Low-Cost States Also Benefit?**

# **Regional Electric Market Issues - Missouri**

**Will The Cost Of Transmission Upgrades Be  
Paid For By Those Who Actually Benefit From  
The Upgrades?**

# Regional Electric Market Issues - Missouri

**Pennsylvania and Missouri have some very similar issues to address.**

- **System Reliability With Different Scenarios**
- **Equal Access To Market Participants**
- **Appropriate Price Signals**
- **Environmental Regulations Compliance**
- **Oversight of Markets & Penalty Enforcement**
- **System Security & Protection of Critical Infrastructure**
  - **Physical Attack**
  - **Cyber Attack**