



---

# Where is US Electricity Policy Headed?

A presentation by:  
Dr. John A. Anderson  
Executive Director  
Electricity Consumers Resource Council (ELCON)  
At the Australian Energy User 2004  
Sheraton Hotel, Brisbane, Australia  
16 September 2004

# What Is ELCON?

---

- ❑ The national association for large industrial users of electricity
- ❑ Founded in 1976
- ❑ Members from a wide range of industries from traditional manufacturing to high-tech

# What I Plan To Do Today

---

- Take a few minutes to review the need to move toward competition and choice
- Present a brief status report on restructuring in the U.S.
  - Review the activities of a few states to highlight the things we have done right (a few) and wrong (a lot)
- Conclude:
  - Basically, we are in a transition
  - One that will last a long time
  - And won't be pleasant or easy

# Under Regulation in the US:

---

- Industrial electricity consumers were offered a standard tariff or negotiated contracts subject to state regulatory approval
  - There was very limited choice – Customers were held captive to their local utility
  - With a very wide range of rates charged to customers depending on their location
- This environment produced mixed results
  - Some utilities were relatively efficient
  - But many others were not
  - Few were customer friendly

# Under Regulation in the US:

---

- “Choices” were limited:
  - Consume or not consume at the regulated rate – and then pay the bill
  - Self-generate or reduce consumption in other ways – or threaten to take such actions -- to either avoid purchasing or to try to negotiate a more favorable tariff offering
  - Participate in state rate cases to try to make rates affordable
- Utilities viewed regulators as their “customers”

# Under Regulation in the US:

---

- They made money by lobbying legislatures, working regulators
  - Huge resources focused on process, not efficiency
  - Whatever regulators allowed in “rate base” was given roughly a 10-12 percent guaranteed rate of return
  - There was an incentive to “gold plate” to increase rate base
  - Many reasons to inflate other costs
  - Regulators outnumbered in efforts to hold costs down
  - No utility could be allowed to “fail”
- Rates for electricity varied widely from one utility to another
- Utilities had no incentive to lower rates or seek lower cost power

# ELCON Was The Earliest Advocate For Competition

---

- In the mid-80's ELCON saw the benefits of large, seamless, nondiscriminatory electricity markets with standard rules for all consumers
  - We believed that “real” competition would produce the desired results
  - And began advocating electricity competition
- We viewed the electric industry as simply the last of the “old monopolies” to be subjected to a healthy dose of competition

# Anticipated Benefits of Competition

---

- Lower prices – perhaps significantly lower prices relative to prevailing rates
  - The risk of construction was on suppliers, not consumers
- Technological innovation
- New products and services
- A customer focus by suppliers
- Customers controlling risk:
  - Customers could select the level of risk that meets their needs
  - And manage that risk in manners that they choose
  - Risk management is not done very well for customers by either utilities or regulators

# Restructuring is not “Deregulation”

---

- ❑ Competition *can* be achieved in generation services
- ❑ Transmission systems remain regulated
  - Brings power from generation source to load centers
  - Federal regulation (except in Texas) of financial aspects and state regulation over siting
  - Multi-state transmission systems and sales-for-resale require federal oversight
- ❑ Distribution systems remain regulated
  - Brings power from load centers to homes and businesses
  - Specific rates for distribution set by state regulators
- ❑ Further, there is no connection between reliability and generation competition
  - Serious blackouts have occurred for years under the traditional “regulated” regimes

# At First, We Were Very Optimistic

---

- By 2000:
  - Half of the 50 States formally said that they were going to “restructure”
- But the actual results were very disappointing
  - First, actions by California and Enron led many folks to think that “competition” didn’t work
  - Then, problems were caused by both state regulators and legislators
    - Prodded, of course, by those with very strong interests and tremendous resources – primarily the incumbent utilities

# I Refer Briefly To Only A Few State Examples

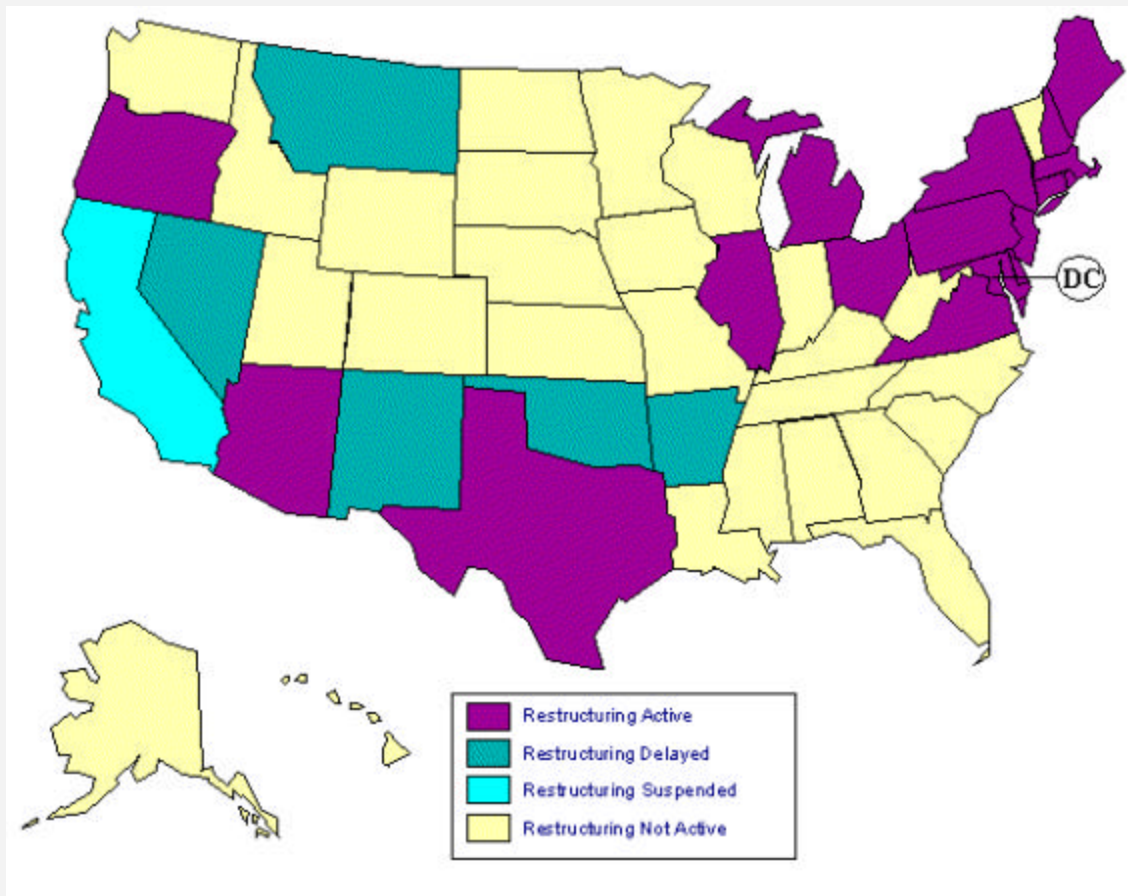
---

- This is NOT a summary of all of the activities of the various states
- But only a few examples
  - To highlight what some states have done
  - And try to identify the good and the bad lessons learned

# Restructuring Activity in the U.S.

(According to the US Energy Information Administration)

---



# California

---

- California has:
  - Population of 35.1 million
  - Retail electric customers of 13.6 million
  - Generating capacity of 56.6 GW
  - Retail sales of 235 GW hours
  - CA is equivalent to the world's 5<sup>th</sup> largest economy after the US, Japan, Germany & UK

California





# California Was The First State To Take Definitive Action

---

## □ California:

- Issued a “Blue Book” in 1994 and enacted AB 1890 in 1996
- Recognized that their electricity costs were at least 50% above the national average
- Stated that these costs were negatively harming their economy
- Believed that electricity restructuring was an economic development tool

# California Implemented “Direct Access” With Serious Inadequacies

---

## □ Problems included:

- Inadequate capacity – both generation and transmission – but then mandated a rate reduction and froze rates at the lower level
- Centralized power exchanges or pools with single-price auctions that proved to be easily “gamed”
- A requirement that ALL power must be sold into and taken out of the power exchange (spot market)
  - ***No long term contracts***
  - This was stated to be a short-term requirement to facilitate stranded cost recovery

# California Implemented “Direct Access” With Serious Inadequacies

---

- Problems included (Continued):
  - A lack of appropriate market monitoring to combat gaming by marketers, traders and other market participants
  - Generation divestiture with a prohibition of long term vesting contracts
  - Poorly designed “provider of last resort” (POLR) services
  - Too much focus on the “right” market designs and not enough on eliminating barriers to competition, mitigating market power, and stranded cost recovery

# California's Flawed Restructuring Scheme Was Costly

---

- In 2000 and 2001, California had:
  - A few rolling blackouts
  - Many daily blackout threats and
  - This thrust billions of dollars of costs on California's customers due to the runaway market
- The marketers and traders quickly learned how to game the California "system"
  - Examples include Enron's now infamous schemes of "Death Star," "Fat Boy," and "Ricochet" that increased prices significantly
  - To put the problem in context, the California Attorney General has claimed that Federal regulators should order refunds of \$8.9 billion

# California's Flawed Restructuring Scheme Was Costly

---

- ❑ San Diego Gas & Electric's customers quickly faced the high "market" prices – and nearly rebelled
- ❑ PG&E filed for bankruptcy and SoCalEdison was close
- ❑ The state signed \$26 billion in very high-priced, long-term contracts to try to assure an adequate electricity supply
- ❑ Governor Gray Davis was voted out of office in a special election!

# California Is Still Trying To Deal With The Problems

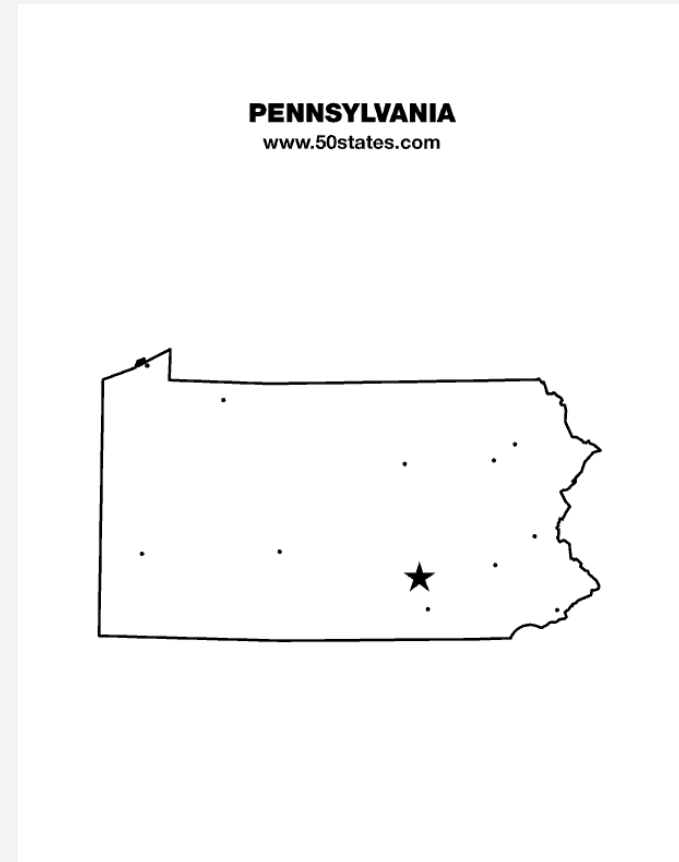
---

- California regulators suspended “direct access”
  - Although they allowed those consumers that had switched to continue to be served by their alternative suppliers
- The California legislature is now considering legislation supported by SoCalEdison that:
  - Allegedly would reinstate “limited” direct access
  - But according to the merchant generators would simply give utilities an incentive to build new plants of their own by guaranteeing cost recovery
  - And would bar shopping customers from returning to the utility for two years
- The CA ISO is redesigning its wholesale market structure to include “locational marginal pricing” – and the costs of the redesign are now over \$127 million

# Pennsylvania

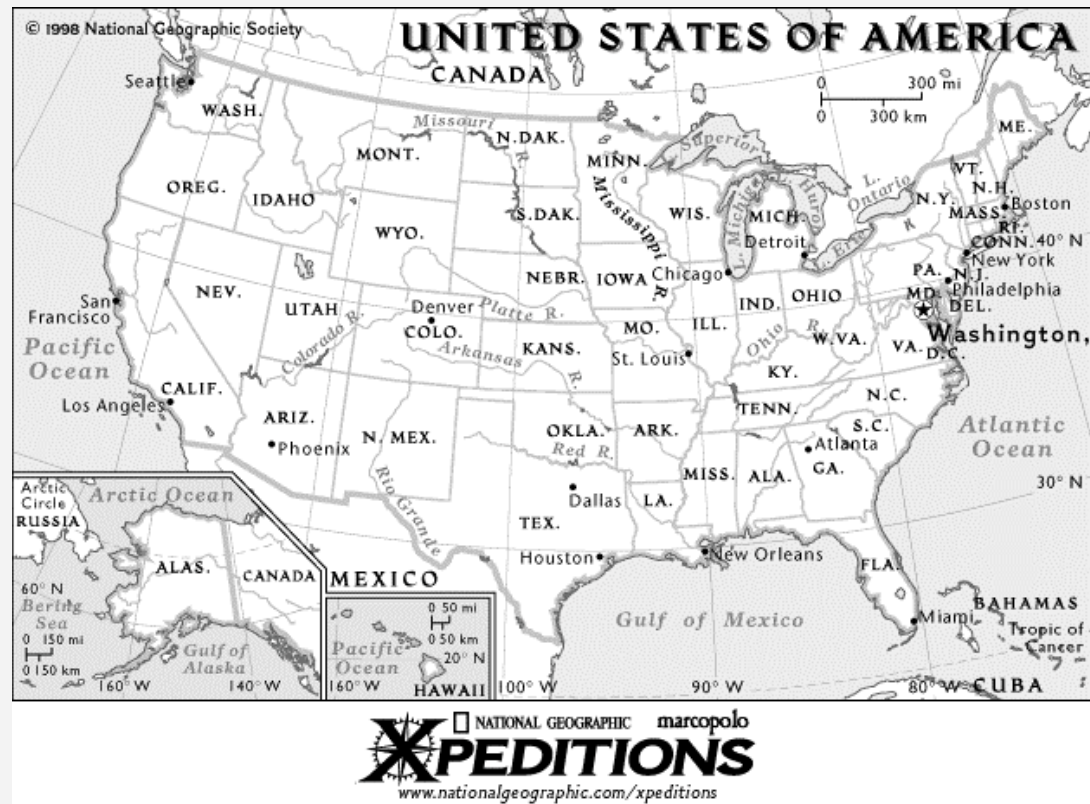
---

- Pennsylvania has:
  - Population of 12.3 million
  - Retail electric customers of 5.7 million
  - Generating capacity of 39.8 GW
  - Retail sales of 140 GW hours



# Pennsylvania

---



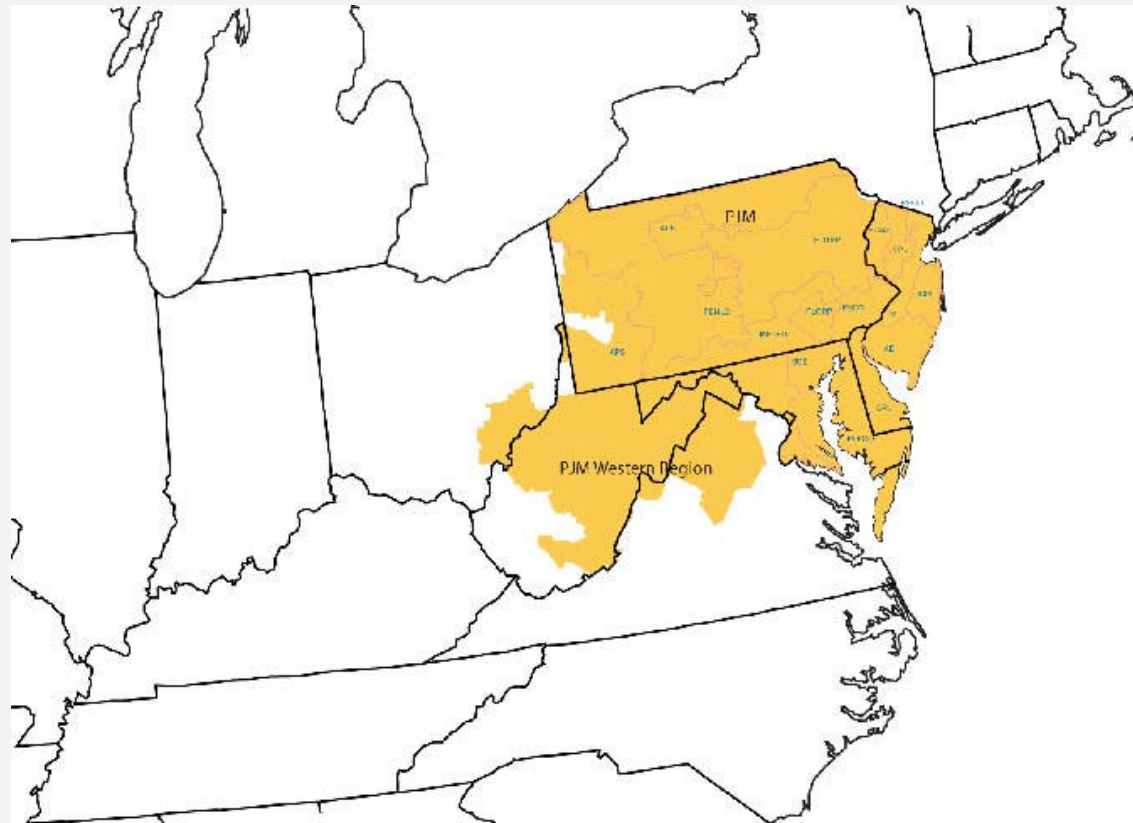
# Pennsylvania Was Also An Early Entrant Into Restructuring

---

- Is a part of the Pennsylvania/New Jersey/Maryland “regional transmission organization” (PJM - RTO)
  - PJM has been a tight, centralized power pool for over 75 years
  - PJM serves 35 million people with 106 GW of generation and a peak demand of 87 GW
  - A key component of PJM is “locational marginal pricing” (LMP)
    - LMP sets “nodal” prices at approximately 1,800 nodes throughout the interconnection
    - At least theoretically, LMP sends price signals that describe and price the areas of congestion
  - PJM operates what it calls the largest competitive wholesale market in the world

# Pennsylvania/Jersey/Maryland (PJM) Site Map

---



# Pennsylvania initially was held up as a model for the nation

---

- Pennsylvania has over 5 million electricity customers
- It had more shopping customers than any other state early in the process
  - In July 2001, over 10% of all electricity customers (591,596) had switched suppliers
- The Pennsylvania restructuring process required a separation of generation and transmission
  - The regulated utilities were required to sell their generation
  - These generating units were sold with “vesting contracts” to assure stable electricity prices in the short run
- Additionally, the Pennsylvania regulators spread the “stranded cost” recovery over a very long time
- PA, as a part of PJM, implemented a “Locational Marginal Pricing” (LMP) scheme
  - Theoretically, LMP sends real-time price signals at over 1,800 locations

# But Pennsylvania's early successes changed in mid-2001

---

- As in California, it became clear that the single-price, bid-based "market" was easily gamed
- The exercise of market power produced significant price spikes
- Long term price caps insulated customers from the high prices and marketers had a very difficult time beating the price caps
  - But prices of competitive sellers responded to cost increases (e.g., natural gas)
  - And many switching customers returned to the incumbent utilities
- Many competitive suppliers then reduced their offerings or left the market completely
  - As of May 2003, there was only one competitive offer below the price-to-compare for residential customers

# The Pennsylvania /PJM Experience Highlighted Several Problems

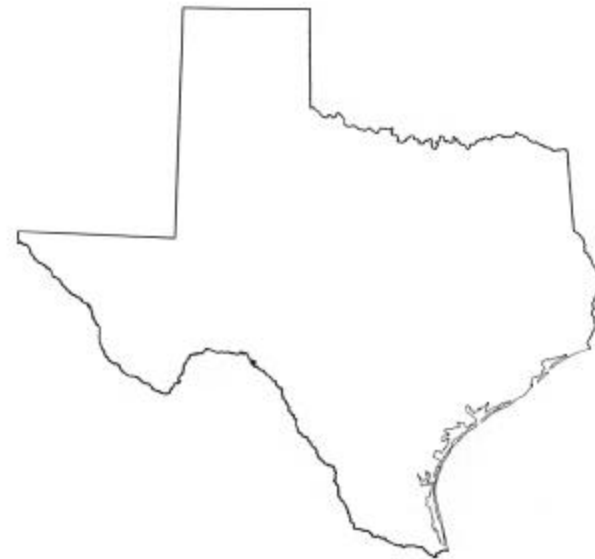
---

- Much of the concern relates to LMP:
  - Advocates claim that LMP sends “correct” price signals and “incentives” both generation and transmission investments
  - However, experience with LMP in PJM indicates that LMP, on its own, does not guarantee adequate supplies of either generation or transmission
    - “Fixes” to LMP to try to assure adequate **generation** supplies cost consumers dearly – and do not produce new generation
    - There are no good “fixes” to assure adequate **transmission**
  - LMP does produce price signals – but only a day after the fact, and
    - And LMP does not send end-use consumers price signals
    - In fact, the “demand-side” is completely excluded from the equation

# Texas

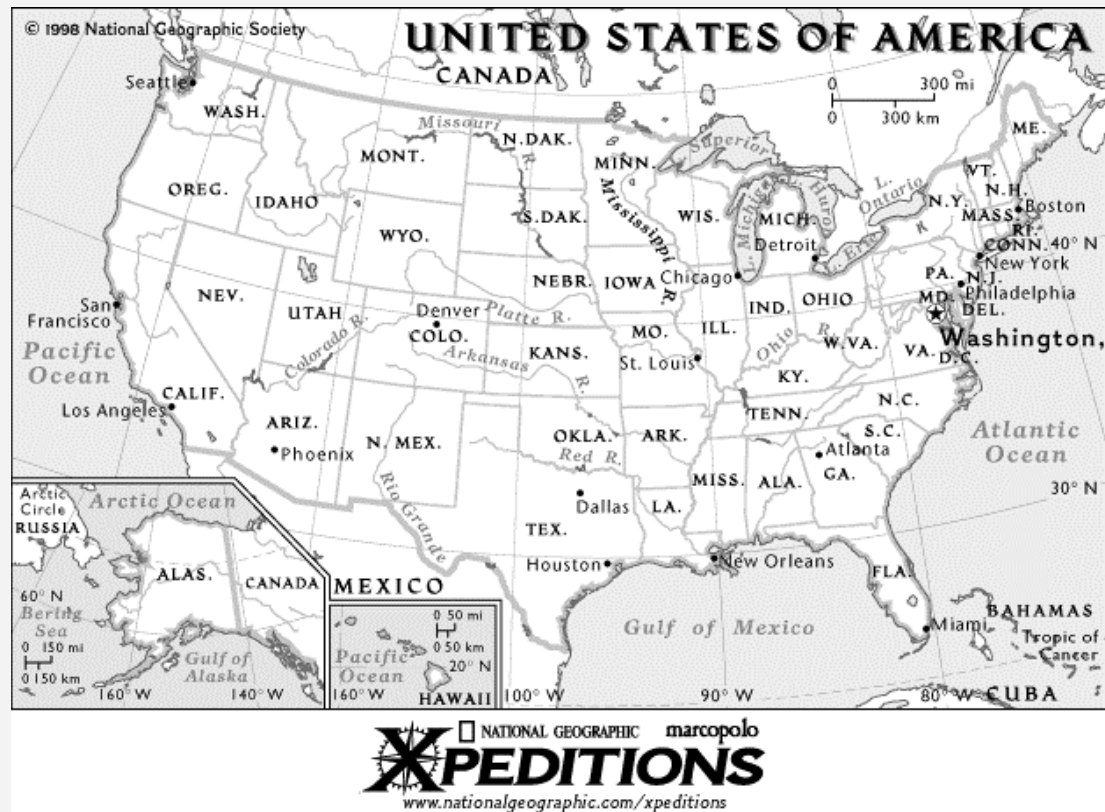
---

- Texas has:
  - Population of 22.8 million
  - Retail electric customers of 10.3 million
  - Generating capacity of 94.5 GW
  - Retail sales of 321 GW hours



Texas - The Lone Star State

# Texas



# Texas Is A More Recent Entrant to Restructuring

---

- Texas law allowed all retail electric customers of investor-owned utilities (IOUs) to select their provider of electricity beginning on January 1, 2002
  - Customers < 1 MW received a regulated “price-to-beat” through 2007 – or until at least 40% of the customers in a class have switched
  - **Customers > 1 MW are not eligible for a “price-to-beat”**
  - All customers have access to “providers of last resort” “POLR” – although on adverse financial terms which effectively preclude this option for mid- or large-size customers
- It is important to note that most of Texas is isolated from the rest of the electric grid and is exempt from Federal regulation

# Texas Is A More Recent Entrant to Restructuring

---

- The infrastructure of Texas was strengthened prior to restructuring:
  - 47 new generation plants were installed between 1999 and 2002 leading to reserve margins > 35%
  - A significant amount of new transmission investment was undertaken to ensure that the transmission grid can accommodate the power flows needed to facilitate retail and wholesale competition
  - Retail providers, transmission and distribution utilities, and ERCOT have invested millions of dollars in the computer systems to allow them to operate in the new competitive environment

# Texas Appeared To Have A Lot Right

---

- Texas' restructuring scheme seemed to work well at first:
  - In June 2003, residential customers had between 4 and 9 competitive providers offering between 4 and 11 competitive offers
  - All areas had at least three offers below the price-to-beat rate
  - In September 2002, 19 competitive providers were serving commercial
  - Almost 8% of all residential customers and about 50% of the primary or transmission voltage customer load were shopping by December 2002

# Texas Appeared To Have A Lot Right

---

- The excess generation, lower natural gas prices and implementation of the price-to-beat rate reduction mandated by Texas law led to retail customers in Texas paying significantly less for electricity in 2002 – compared to the regulated rates in 2001
  - The Texas regulators estimated that RESIDENTIAL customers paid \$902 million less in 2002 under the price-to-beat than under regulated rates in 2001 and COMMERCIAL and INDUSTRIAL customers paid approximately \$645 million less in 2002 compared to 2001
- Retail Electric Providers (REPs):
  - Offered up to 14% additional savings off the price-to-beat to residential customers

# Texas Appeared To Have A Lot Right

---

- Many customers initially switched:
  - Texas regulators stated that, as of September 2002, over 400,000 retail customers were taking service from REP's not affiliated with their local transmission and distribution utility
  - A majority of these customers were residential customers
  - By 2004, nearly 40% of small commercial loads had switched to non-affiliated suppliers in the CenterPoint (CPE) and AEP Texas Central (TCC) service areas
  - Over 90% of all customers without a price-to-beat switched

# However, There Are Some Problems Even In Texas

---

- Texas regulators identified several broad issues that require resolution:
  - Difficult financial conditions for various critical entities
  - The impact of stranded cost recovery
  - Municipal registration of competitive suppliers
  - Transmission constraints – especially related to wind farms
  - Wholesale market transparency

# However, There Are Some Problems Even In Texas

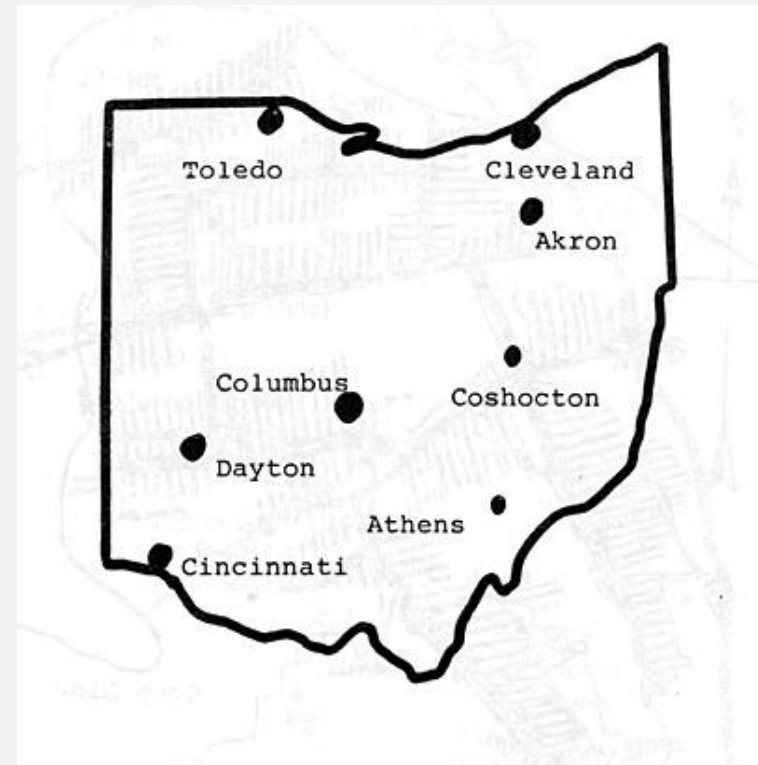
---

- In 2003, the Texas regulators adopted a rule to implement “Texas Nodal”
  - Texas Nodal would implement a “LMP” type pricing structure
    - Modeled after PJM
  - The rule also requires:
    - A hedging mechanism
    - Market mitigation measures
    - A day-ahead market to increase liquidity
- Implementation is underway

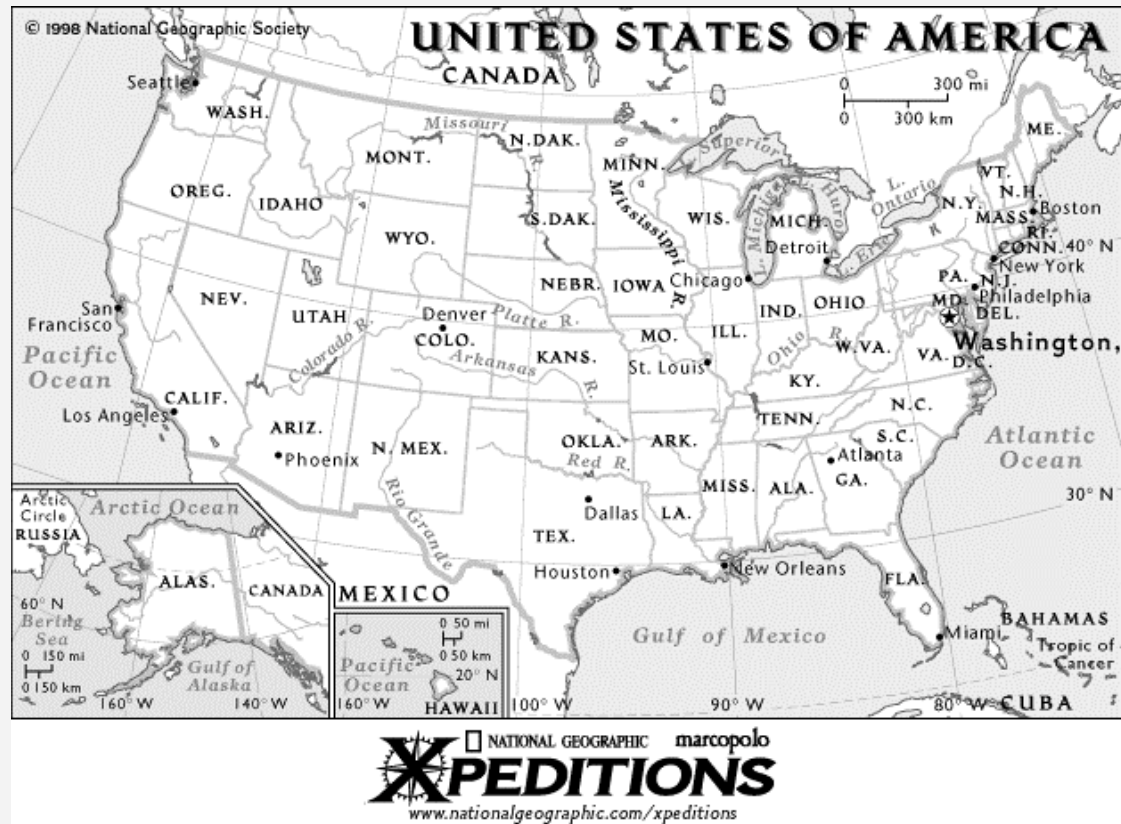
# Ohio

---

- Ohio has:
  - Population of 11.4 million
  - Retail electric customers of 5.4 million
  - Generating capacity of 31.5 GW
  - Retail sales of 156.0 GW hours



# Ohio



# Ohio Added A New Concept

---

- Ohio law in 1999:
  - Mandated a 5% rate reduction for all residential customers – then a price freeze
  - Established a 5-year “market development period” (MDP) through 2005
    - The MDP can be removed earlier if (1) 20% of customers shop or (2) the Ohio regulators find that competition exists
  - Required the PUCO to determine stranded cost recovery
  - Limited stranded cost recovery after MDP
  - Specified that FERC approved transmission rates will define the transmission price paid by retail customers (both shopping and non-shopping) after MDP
  - Required RTO participation and a mandate to work with FERC and other states to address market formation

# Ohio Added A New Concept

---

- The law (Cont.):
  - **The unique feature of the Ohio plan is to allow aggregation by local governments**
    - The governments had to obtain the majority support of the community
    - Under an “Opt-out” provision, customers were automatically enrolled with the community’s chosen supplier UNLESS they specifically refused

# Ohio Added A New Concept

---

- Immediately following the enactment of SB 3:
  - The North East Ohio Public Energy Council (NOPEC) formed an electric buying group that now represents more than 200 communities
  - This is the largest public aggregation of electricity customers in the US
  - Aggregation in Ohio has resulted in a very large number of switching customers
  - However, NOPEC has promoted incentive-based shopping credits and the creation of deferrals (regulatory assets) that are paid by all customers
    - This causes problems to the extent that the incentives create switching that is not sustainable

# But There Are Problems In Ohio

---

- Although there is a lot of switching in Ohio:
  - There is a lack of real customer choice
  - Electricity prices remain frozen during the MDP
  - The PUC has yet to design final rules for default service once the market development period ends
  - The “Opt-out” provisions in the aggregation program has caused some problems for businesses
    - Some haven’t been able to respond in a timely manner and are unknowingly switched
  - The shopping credits have also caused problems
  - And the lack of regulatory clarity is making many potential shopping customers hesitate

# While A Few States Supported Competition, Others Were Opposed

---

- State opposition to shopping grew
  - Primarily in the South and parts of the West
  - The opposition was significantly heightened by the California fiasco and the Enron meltdown
  - This opposition brought confusion to the restructuring debates – and greatly slowed the movement to competition
- The main point: Federal/state jurisdictional issues have become a major problem in electricity restructuring

# Federal Regulators Added to the Confusion

---

- ❑ The Federal Energy Regulatory Commission (FERC) is charged with regulating wholesale sales and “sales for resale”
- ❑ For many years, FERC limited its regulation to transmission tariffs
  - Although FERC started down the restructuring path in the mid-1990’s with its Orders 888 and 889
- ❑ However, FERC became much more aggressive under current Chairman Pat Wood – who was formerly the Chairman of the Texas PUC:
  - A key proposal was the “Standard Market Design” (SMD)
  - The main concept behind SMD was the establishment of large, seamless, nondiscriminatory electricity markets
  - While ELCON had some problems with the details of the proposed SMD – especially the LMP advocacy – we strongly supported the concept

# Federal Regulators Added to the Confusion

---

- Specifically, the FERC-proposed SMD would:
  - Require large Regional Transmission Organizations (RTOs)
  - Establish a single tariff within each RTO throughout the U.S.
  - Require separation of transmission from other functions by creating Independent Transmission Providers (ITPs)
  - Require ITPs to establish and operate both day-ahead and real-time markets
  - Emphasize the importance of market power mitigation
- The establishment of large, seamless, nondiscriminatory electricity markets would allow (at least wholesale) customers to buy and sell electricity in large geographic markets

# Federal Regulators Added to the Confusion

---

- FERC received very significant opposition to its SMD proposal
  - Most of the opposition came from certain state regulators and legislators – pushed by large, incumbent utilities
- FERC then “watered down” the original proposal
  - State regulators were allowed to encroach on interstate issues
  - Regional variations were substituted for standardization
  - The market was not trusted to assure either adequate generation or transmission capacity

# The Federal Legislature Clearly Has Entered The Debate

---

- Republicans in the U.S. Congress have been trying to enact Federal energy legislation for a number of years
  - Relating to the electricity provisions, last year's legislation would (among other things): restrict the federal regulator's authorities; require "incentives" for transmission investment that will not assure transmission additions; allow utilities to reserve excessive amounts of transmission at the expense of their competitors; repeal an outdated, but still an important consumer protection, law; and codify a reliability standards-setting organization at the expense of commercial practices
- Perhaps the good news is the ***electricity provisions*** of the legislation have not yet been enacted into law

# Today, Sporadic Shopping Is Taking Place – Nearly All By Large Customers

---

- CA – 13.2%
- DC – 36.8%
- IL – 32.2%
- MA – 25.4%
- MD – 16.2%
- ME – 36.2%
- MI – 15.9%
- MT – 22.7%
- NJ – 17.9%
- NY – 24.1%
- OH – 19.7%
- OR – 2.4%
- PA – 10%
- RI – 11.4%
- TX – 45.3%

Note: % of total load

Source: "Retail Energy Foresight,"  
June/July 2004, published by  
KEMA, [www.kema-xenergy.com](http://www.kema-xenergy.com)

# But There Are Many Problems

---

- The U.S. has faced significant problems in the electric sector:
  - California had rolling blackouts and market manipulations of \$8.9 billion according to their claims
  - Enron melted down
  - Nearly all individual state restructuring activities have had significant problems
  - Natural gas prices have spiked to unheard of levels
  - Market capitalization in the electricity industry has declined over \$100 billion
  - Credit ratings for 12 companies owning 200 GW of generation have fallen from investment grade to low, non-investment grade
  - Over 16 GW of generation capacity has been handed over to creditors
  - Several major IPPs have filed for bankruptcy

# We Have Learned A Lot

---

- ❑ Both vertical and horizontal market power exist throughout the electric industry
- ❑ Bid-based markets are easily gamed
- ❑ There must be adequate generation and transmission capacity, and regulators cannot force construction with “incentives” without requiring consumers to pay exorbitant prices
- ❑ LMP sends price signals, but does not incent investment to mitigate congestion – There is too much granularity
- ❑ Demand response is essential to mitigate price spikes
- ❑ Competitive suppliers, independent generators and marketers need long term contracts for financial security
- ❑ Uncertainty in regulation causes tremendous confusion and hesitancy to invest
  - In fact, an investment banker recently told a federal regulator that his firm would rather invest in China “where the rules are clear” than in the US

# But We Are In A Terrible State Of Flux

---

- ❑ In some places, the old regulated world is gone
- ❑ But we are far from having truly competitive electricity markets
- ❑ There is a lot of Balkanization by the states – and a lot of weird politics
- ❑ And Federal regulators are interfering in the “market” in ways that are counterproductive
  - Federal regulators are trying to add regulatory “fixes” to a broken “market” rather than trying to fix the market
- ❑ One thing is certain – The need for competitively-priced electricity is as great as ever, particularly for manufacturers facing global competition

# What Are Industrial Electricity Users In The U.S. Striving For?

---

- ❑ Large, nondiscriminatory markets based on bilateral contracts
- ❑ With many buyers and many sellers
- ❑ Freedom of both entry and exit
- ❑ Active participation of demand in the market – demand not controlled by regulators
- ❑ Adequate generation and transmission capacity
  - With returns on investment commensurate with risk
- ❑ Limited stranded cost recovery
  - To only proven and net stranded costs and
  - To a set period. Otherwise, you will always subsidize utility inefficiency
- ❑ Mitigation of market power of both generation and transmission
- ❑ Control of gaming/interference from entities with market power
  - Separate transmission from generation
  - Fair, non-discriminatory operation of transmission
  - Careful market monitoring
  - Competition in technology (e.g., let competitors install meters, etc.)

# What's Keeping Us From Achieving Our Goals?

---

- Federal/state jurisdictional squabbles
  - States think they control transmission as long as rates are “bundled”
- Very strong opposition from states in the Southeast and West
  - There are relatively low cost areas that do not see advantages to restructuring
- Continued pushes to implement LMP rather than rely on bilateral contracts
  - We should have learned from the U.K. that reliance on the short-term market and bid-based, single-priced auctions are an invitation for problems

# Conclusions

---

- We believe strongly that competition is better than regulation when structured “correctly”
- Real competition can and will:
  - Send right price signals
  - Allocate risk
  - Encourage new generation and transmission
  - Stimulate innovation
  - Bring about better service
- We in the U.S. are learning what **NOT** to do
  - The good news is that we are also learning what **TO** do
- It’s been a long, expensive process
  - That’s not surprising
  - It takes a long time to change a large industry
- I firmly believe that we will succeed – The question is simply when



## How To Contact ELCON

---

Phone: 202-682-1390  
Fax: 202-289-6370  
E-mail: [elcon@elcon.org](mailto:elcon@elcon.org)  
Web site: [www.elcon.org](http://www.elcon.org)  
Address: 1333 H Street N.W.,  
8<sup>th</sup> Floor, West Tower  
Washington, D.C. 20005