

Overview of Texas State Energy Plan Developed by the Governor's Competitiveness Council

Introduction

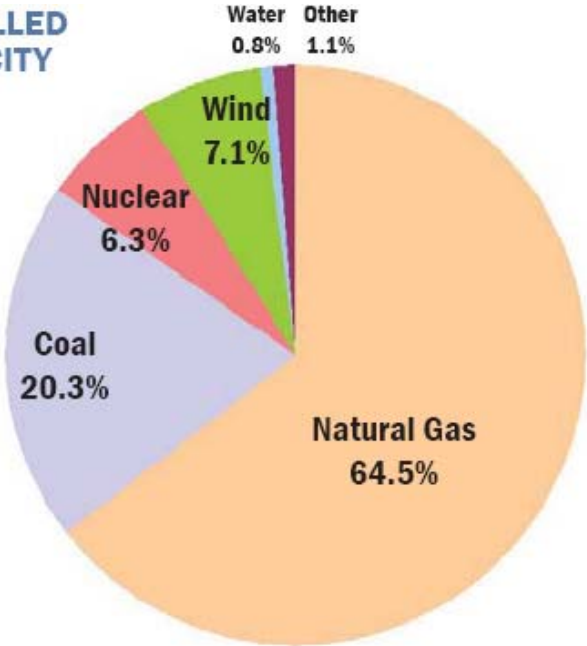
- In November 2007, Governor Perry established the Governor's Competitiveness Council.
 - 29 public and private sector leaders
 - Goal is to identify recommendations for Texas' long term economic success
 - Council work included an analysis of the relative competitiveness of 6 major clusters
 - Energy, Petrochemical, Aerospace & Defense, Advanced Technology and Manufacturing, Biotechnology and Life Sciences, and Computer and Information Technology
 - Council also develop a state energy plan to evaluate issues with meeting the energy needs of the state

Process

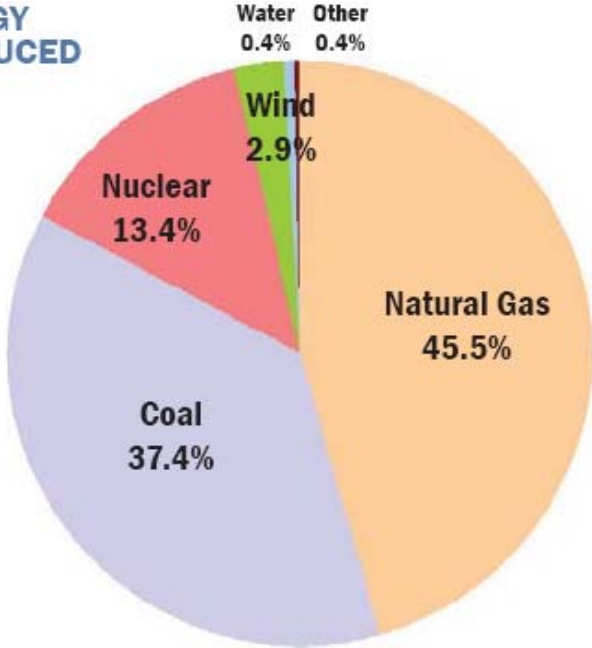
- Data collection and analysis by consultants retained by the Governor's Office with assistance of state agencies.
- Series of stakeholder workshops with industry, consumer advocates, environmental advocates, etc.
- Report with analysis of current conditions, options for the future and recommendations

Current Installed Capacity and Energy Production

INSTALLED CAPACITY 2008



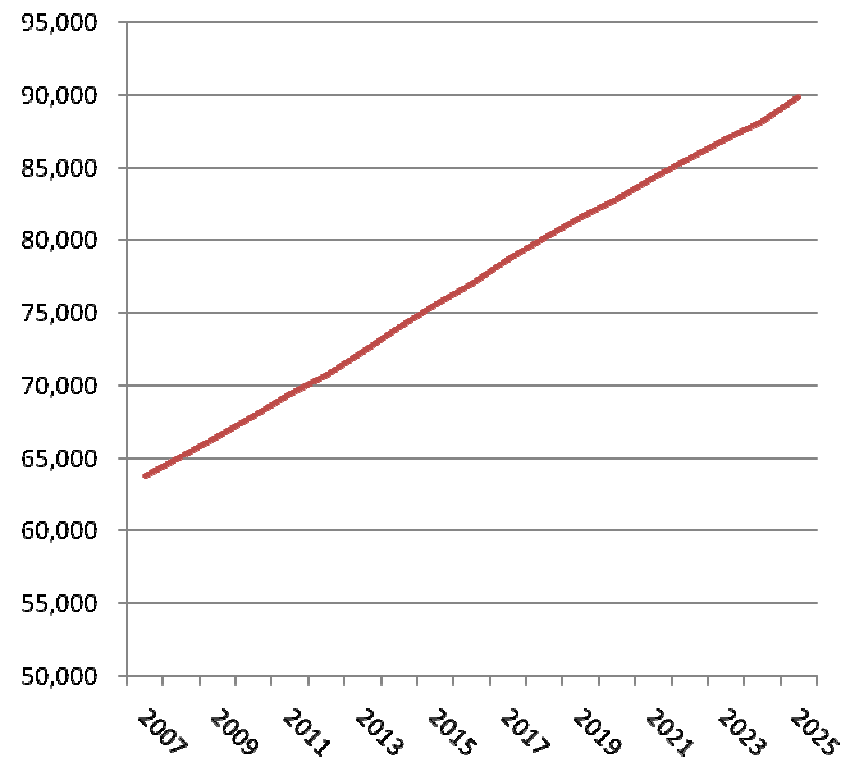
ENERGY PRODUCED 2007



Future Energy Needs (Part 1)

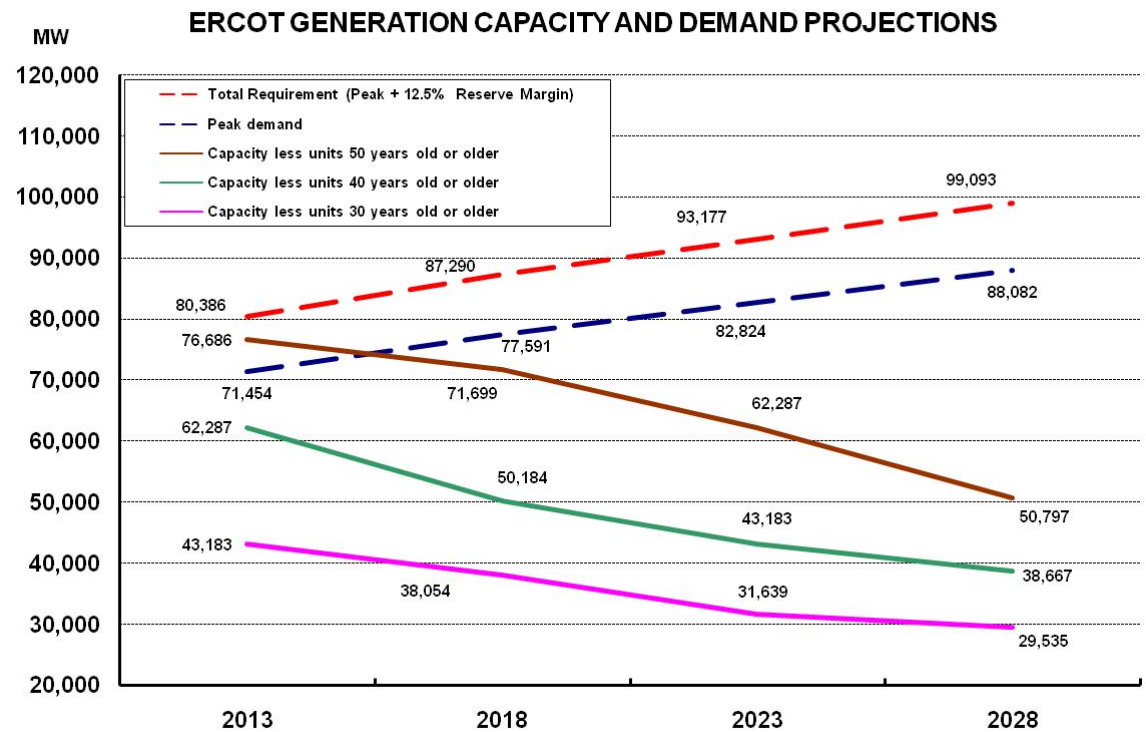
- Demand growth in Texas is about 2% per year, among the fastest rates of growth in the nation.
 - Roughly 1,500 MW of new capacity needed each year to meet demand growth

Peak Demand Forecast (MW)

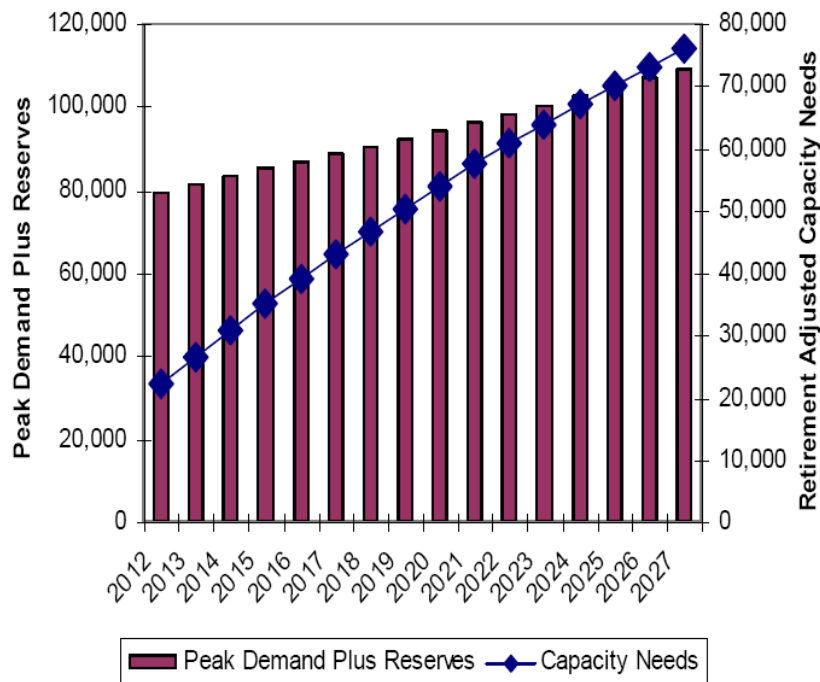


Future Energy Needs (Part 2)

- Additionally, existing, older capacity will eventually need to be replaced.
 - 10,000 MW of current generation is already over 40 years old.



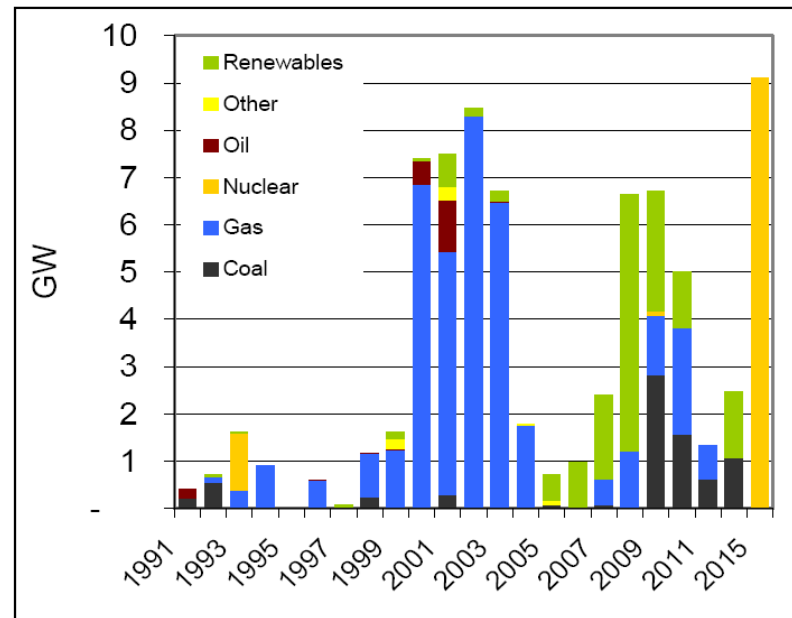
Texas' Future Energy Needs



- These factors combined suggest a need for 20,000-40,000 MW of new capacity by 2017.
- 64,000-75,000 MW of new capacity needed by 2027.

New/Planned Capacity Additions 1991-2015

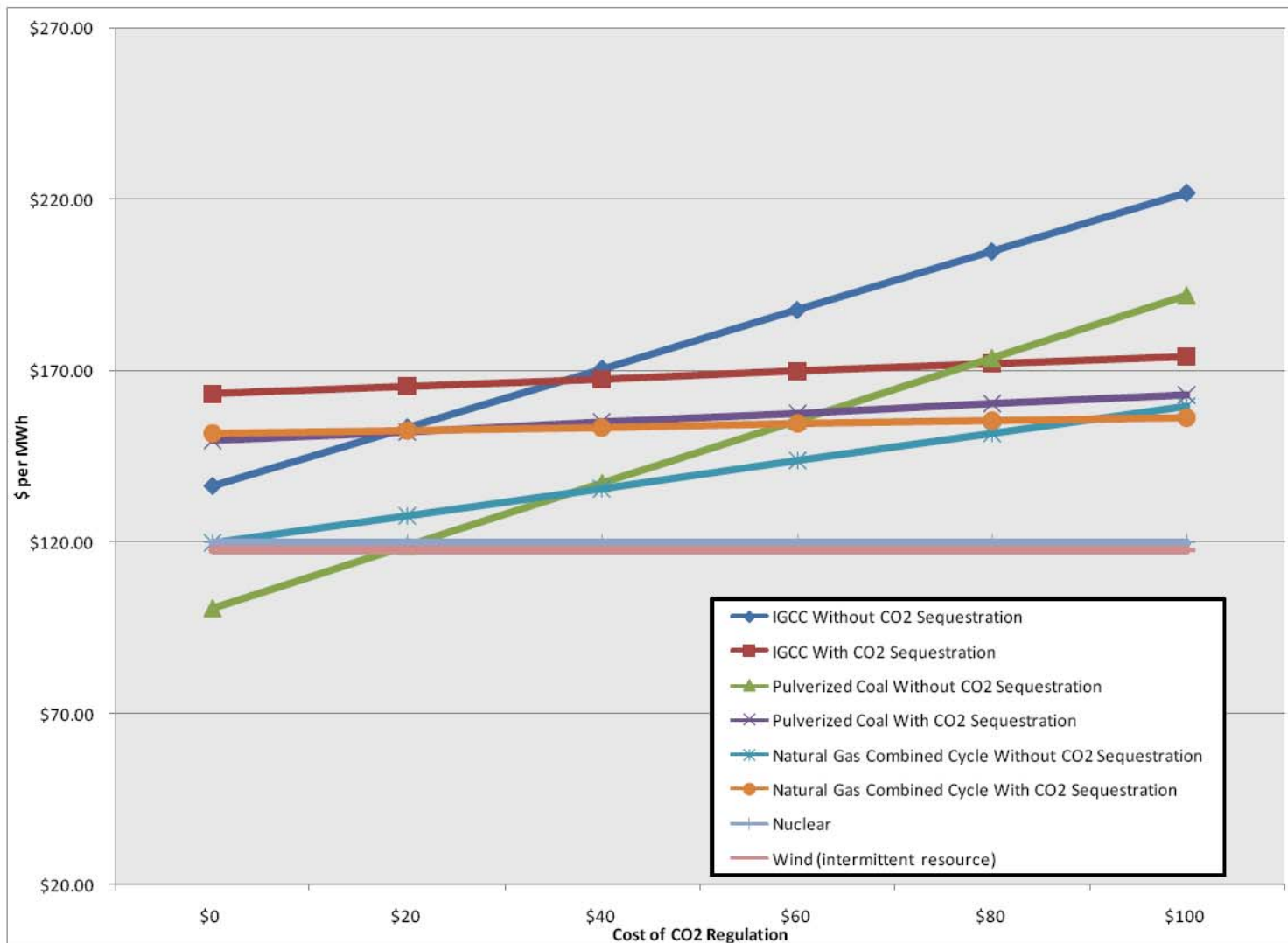
- Over 30,000 MW of natural gas fired generation installed since 1995.
- Large amount of wind generation added after 2001.
- 6,000 MW of new coal expected by 2015.
- 9,000 MW of new nuclear under consideration by developers.



Challenges

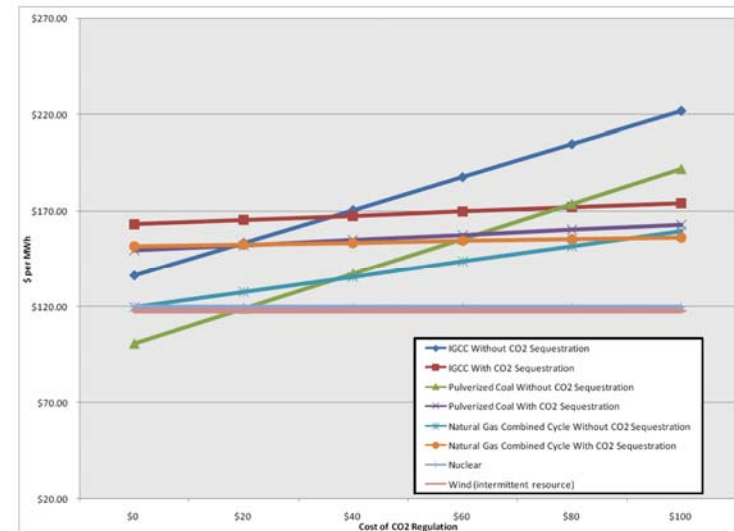
- Reliance on natural gas has led to high and volatile energy prices due to dramatic increase in natural gas prices.
- Environmental concerns and potential carbon dioxide regulation/limits has created impediments to the development of coal fired generation.
- Increase in materials costs (steel, concrete, etc.) has made construction of non-gas baseload generation much more expensive.

Impact of CO2 Regulation on Economics of New Generation (\$13.50 per MMBTU for Natural Gas Cost)



Observations

- Coal is most economic, but carbon costs of \$40 per ton make natural gas equivalent.
- Nuclear becomes lowest cost option at low carbon costs, but capital costs may be uncertain, permitting lengthy, and waste disposal still an issue.
- Wind is a complementary resource, but intermittent.
- May take very high carbon costs to make carbon sequestration economic.
- Natural gas generation will therefore likely continue to be a large source of incremental supply.



Main Recommendations of Council Report

- Let the market continue to solve the “what should we build” question.
 - The market is already bringing a diverse mix of resources (new coal, nuclear, wind, and natural gas).
 - Attempts to favor one type of technology over another are likely to increase costs

Main Recommendations of Council Report

- Cost-effectively slow the rate of demand growth
 - Energy efficiency and demand response measures currently have a lower cost per kW than any new generation resource.
 - Current law requires funding of energy efficiency programs to reduce the rate of demand growth by 20% from what would otherwise occur.
 - PUC study to evaluate whether it is cost-effective to raise goals to 30%-50%
- Fully deploy and enable advanced meters to all customers in order to facilitate market based demand response and distributed generation

Main Recommendations of Council Report

- Encourage the commercialization of emerging technologies through tax incentives and innovation prizes
 - Innovation prizes for large scale storage
 - Innovation prizes for large scale carbon sequestration
 - Tax exemptions for solar and carbon sequestration equipment
 - Public/private research and development coordination

Main Recommendations of Council Report

- Fully integrate wind resources to the extent possible
 - Transmission expansion to West Texas
 - Encourage coastal wind generation
 - Explore needs for additional operating reserves