

September 13, 2007

Energy Efficiency Market Transformation Opportunities for Texas



Public Citizen
with
Texas Energy Efficiency Partnership
&
Electric Utility
Marketing Managers of
Texas

Austin, TX

Thompson Conference Center, University of Texas at Austin
Thursday, September 13, 2007

Workshop Schedule

•This workshop is jointly sponsored by Public Citizen, with the Texas Energy Efficiency Partnership, and the Electrical Utility Marketing Managers of Texas (EUMMOT).

8:30 -- 9:00	Registration/Coffee
9:00 -- 10:15	Opening/Introduction <i>Welcome:</i> Alan Ahrens, Chairman, EUMMOT <i>Views of the Challenge and Opportunity</i> <ul style="list-style-type: none">• Theresa Gross, Energy Efficiency Lead, Electric Division, Public Utility Commission of Texas• Dub Taylor, Director, State Energy Conservation Office• Tom "Smitty" Smith, Texas Director, Public Citizen• Regional Potential of Energy Efficiency and On-site Renewable Energy - R. Neal Elliott, Ph.D., P.E., Industrial Program Director, ACEEE
10:15 -- 10:30	--- Break ---
10:30 -- 12:00	"Outside the box": <i>Session Chair: Price Robertson, Oncor</i> <u>A Public Example</u> – Fred Yebra, Director, Demand Side Management, Austin Energy. <u>Advanced Buildings: Core Performance</u> - Mark Cherniack, Senior Program Manager, New Buildings Institute. <u>Utility DSM Programs and Federal Tax Incentives</u> - Harry Misuriello, Manager, Energy Efficiency Strategies, Owens Corning, <i>representing</i> NAIMA. <u>Non-Transmission Industrial Compressed Air</u> - Scott Stroup, President, Airometrix.
12:00 – 1:00	--- Lunch --- (box lunches provided)
1:15 – 2:45	Commercial Programs: <i>Session Chair: Jay Zarnikau, Frontier Associates</i> <u>Comprehensive Design Support for High Performance New Construction</u> - Jay Pilliod, Director of Business Energy Services, Vermont Energy Investment Corp. <u>Data Centers</u> - Derrick Rebello, Principal, QuEST. <u>Grocery Stores & Big Box</u> – Jim Stimmel, Executive Vice President, Engineering, CLEAResult Consulting. <u>Vendor-Based Delivery Mechanisms for Recommissioning and Prescriptive DSM</u> - Chris Schroeder, Vice President- Energy & Carbon Management, Nexant.
2:45 – 3:00	--- Break ---
3:15 – 4:45	Residential Programs: <i>Session Chair: Tom Fitzpatrick, Public Citizen</i> <u>Peak Alerts and Peak Time Rebates</u> - David Pickles, Vice President, ICF International. <u>Residential Rules-Based Audit</u> – Jonathan Baty, Vice President of Technology, Enerpath. <u>Residential Audit</u> - Steve Saunders, CEO, TexEnergy Solutions, Inc., <i>representing</i> Texas Home Energy Raters Organization (TX HERO). <u>Appliance Replacement and Recycling</u> – Bruce Wall, Vice President, Resource Efficiency Programs, Appliance Recycling Centers of America.
4:45 – 5:00	Closing
5:00 – 7:00	Reception hosted by <i>Frontier Associates and CLEAResult Consulting</i> --- in the Lobby

R. NEAL ELLIOTT, III, Ph.D., P.E., Industrial Program Director
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Program Director since 1993 when he joined the American Council for an Energy-Efficient Economy (ACEEE), a nonprofit organization dedicated to advancing energy efficient technologies and policies. Elliott is an internationally recognized expert and author on energy efficiency in manufacturing and agriculture, industrial energy efficiency programs, motor systems, combined heat and power, analysis of energy efficiency and energy markets, and a frequent speaker at domestic and international conferences.

Recently, Elliott has been involved with analysis of energy markets and in promotion of efficiency policies at both the state and federal level. Prior to joining ACEEE, Elliott worked at the North Carolina Alternative Energy Corp where he worked on industrial and agricultural policy issues. Elliott received B.S. and M.S. degrees in Mechanical Engineering from North Carolina State University. He was a Dean's Fellow and received a Ph.D. from Duke University for work in the area of Solid Fuel Combustion. He is a registered Professional Engineer in North Carolina, holds six patents in the areas of thermal storage and heat exchanger design, and is a member of the American Society of Mechanical Engineers.

Impacts of Energy Efficiency and Onsite Renewable Energy on Houston and Dallas/ Ft. Worth Metro Areas

Presented by

R. Neal Elliott, Ph.D., P.E.

Industrial Program Director

**American Council for an Energy-Efficient
Economy**

Washington, D.C



The American Council for an Energy Efficient Economy (ACEEE)

- Non-profit (501c (3)) dedicated to advancing energy efficiency through research and dissemination.
- 25+ staffers in Washington, DC, Delaware, Michigan and Wisconsin
- The Energy Efficiency “Think Tank”
- Internationally Respected Source of Research Focus on End-Use Efficiency, Policy and Programs
- Funding:
 - Foundation and Government Grants (55%)
 - Specific Contract work (20%)
 - Conferences and Publications (25%)



Purpose of this Analysis

- Consider how statewide energy efficiency and on-site renewable energy policies affect the two largest and rapidly growing metro areas
- Estimate the impact of statewide policies on meeting electricity needs, emissions and the local economy
- Explore how local policies can increase the impacts of statewide policies

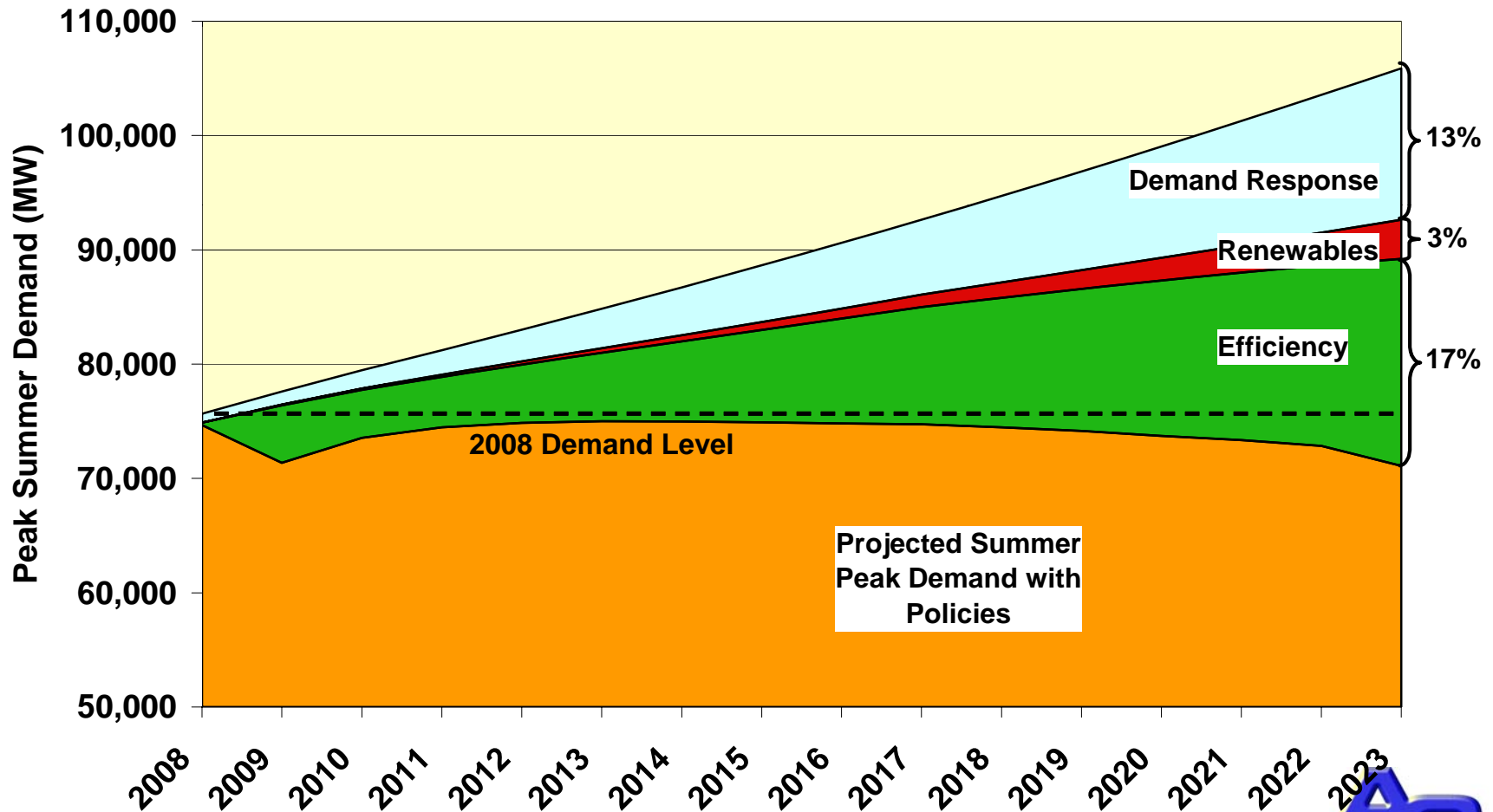


Statewide Policies

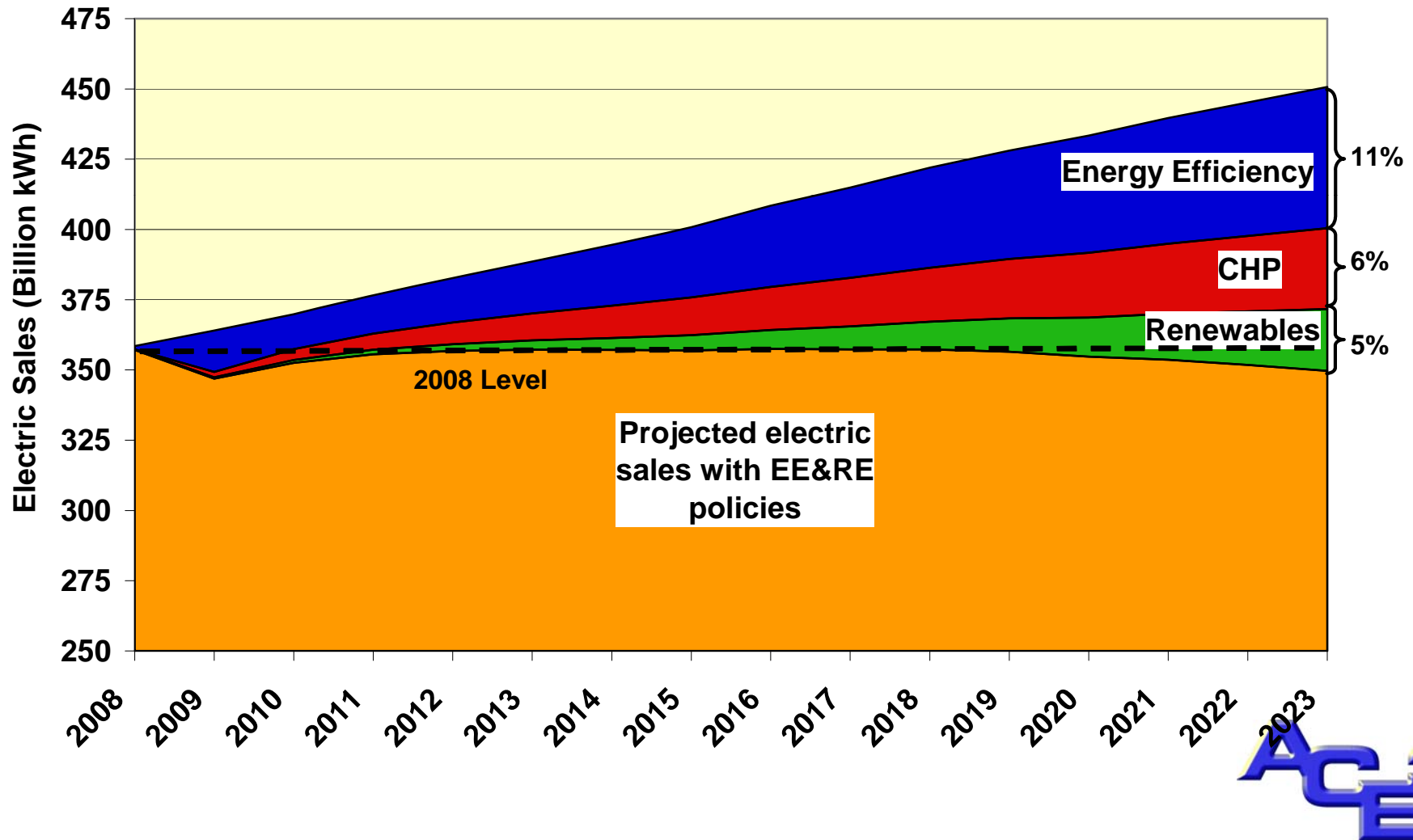
1. Expanded Energy Efficiency Improvement Program (EEIP)
2. Combined Heat and Power Capacity Target
3. Tighter Building Energy Codes
4. Advanced Energy-Efficient Building Program
5. Energy-Efficient State and Municipal Buildings Program
6. New State-Level Appliance and Equipment Standards
7. Short-Term Public Education and Rate Incentives
8. Onsite Renewable Energy Incentives
9. Demand Response



Impact of Statewide Policies on Texas's Summer Peak Demand

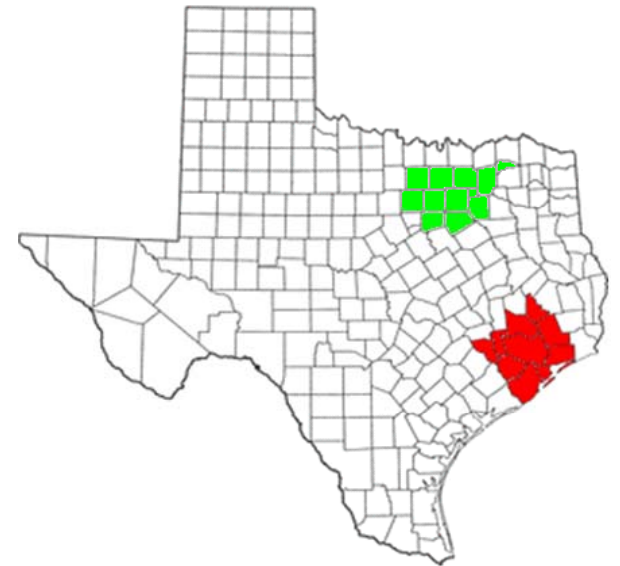


Statewide Policies Role in meeting Texas's Future Electricity Needs

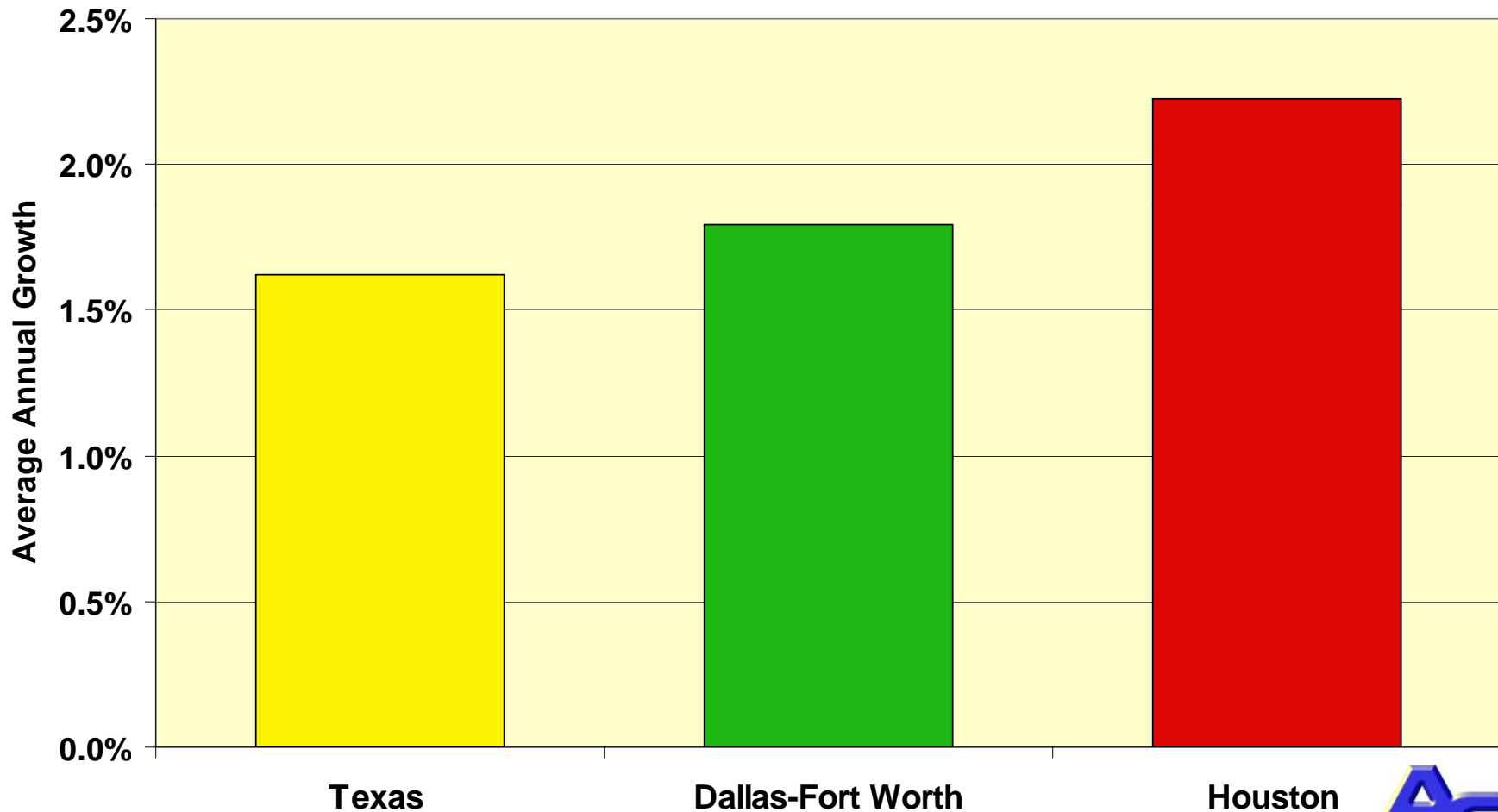


Houston and Dallas-Ft. Worth Metro Regions

- Together account for about half of state's electricity demand
- Growing much faster than the state
- Facing a triple challenge: rapid economic growth, environmental non-attainment and rapid increases in electricity demand
- Energy efficiency and on-site renewable energy can help meet all three of these challenges



Annual Electricity Consumption Growth 2008-2023



Differences Between Metro Regions

Houston area:

- Fastest growing electric demand
- Heavily industrial
- Source of much of the pollution in east-Texas – much from mobile sources

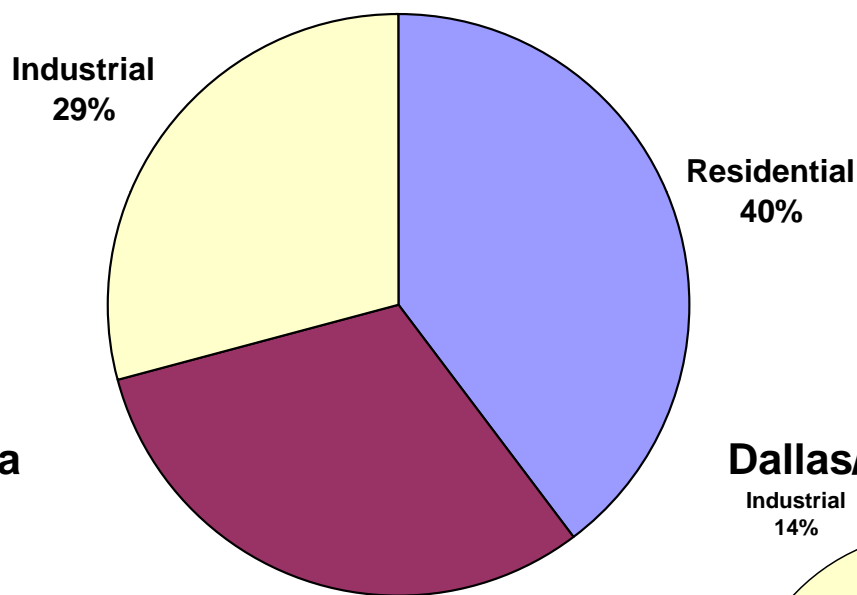
Dallas-Ft. Worth area:

- Less energy-intensive manufacturing
- More commercial/institutional load
- Pollution carried from Houston compounded by local traffic

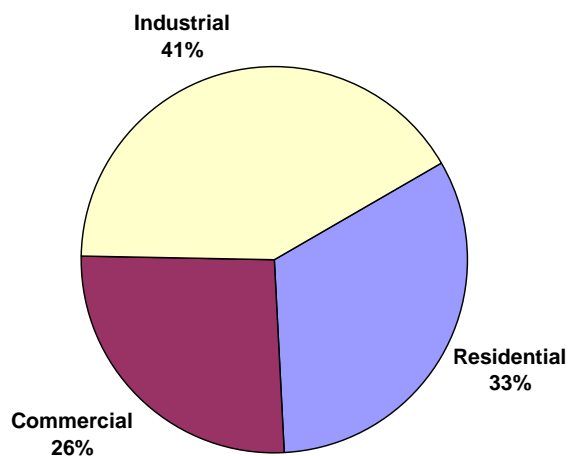


Electric Consumption Distribution for State and Metro Areas

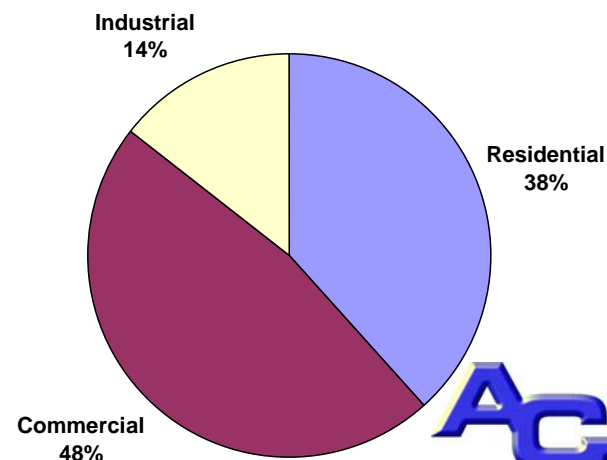
Texas State-Wide



Houston Metro Area



Dallas/Fort Worth Metro Area



Impact of Policies

Statewide policies would:

- Meet 101% of load growth in DFW and 78% in Houston
- Local policies would facilitate 2/3 of savings in DFW and half in Houston:
 - On-site renewable energy
 - Combined heat and power
 - New and existing buildings



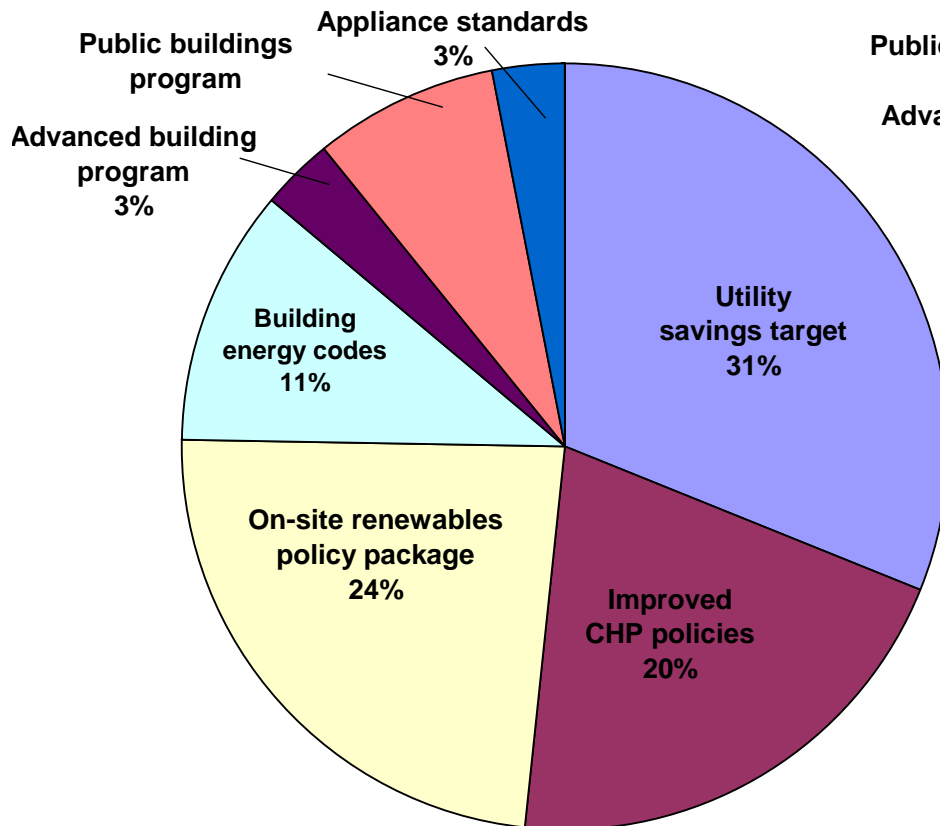
Implementation of Policies

Policy	Implementation	
	Statewide	Local
Expanded Energy Efficiency Improvement Program (EEIP)	X	
Combined Heat and Power	X	X
Tighter Building Energy Codes	X	X
Advanced Energy-Efficient Building Program	X	X
Energy-Efficient State and Municipal Buildings Program	X	X
New State-Level Appliance and Equipment Standards	X	
Short-Term Public Education and Rate Incentives	X	
Onsite Renewable Energy Incentives	X	X
Demand Response	X	

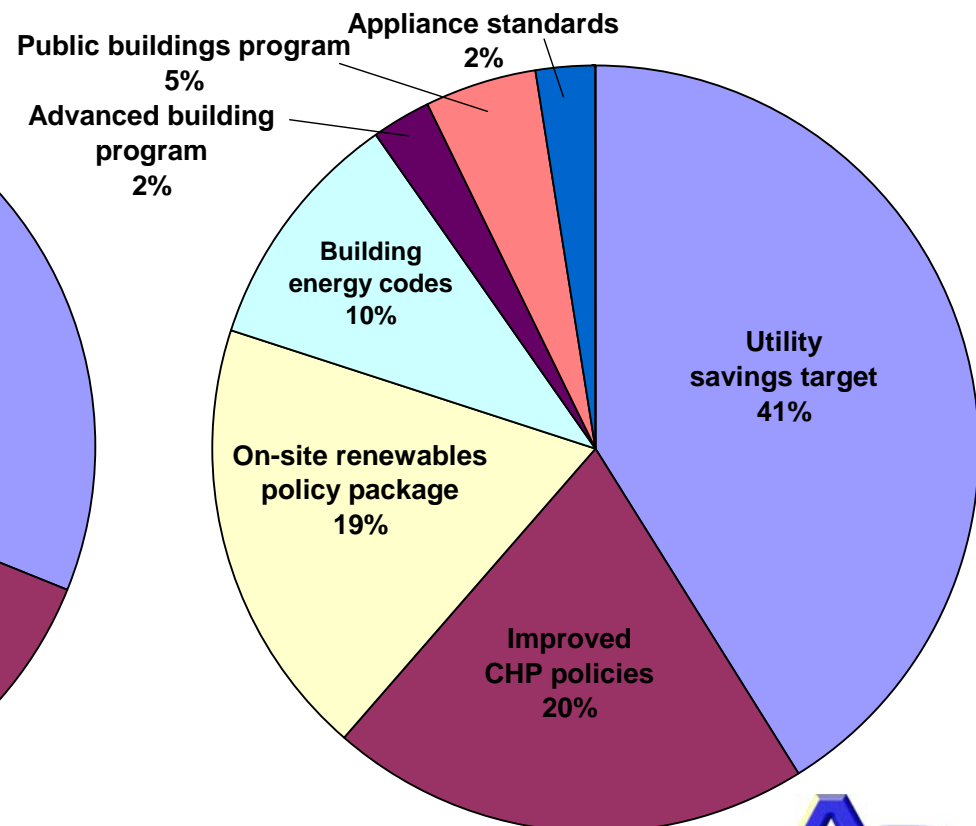


Electricity Savings by Policy in Metro Areas

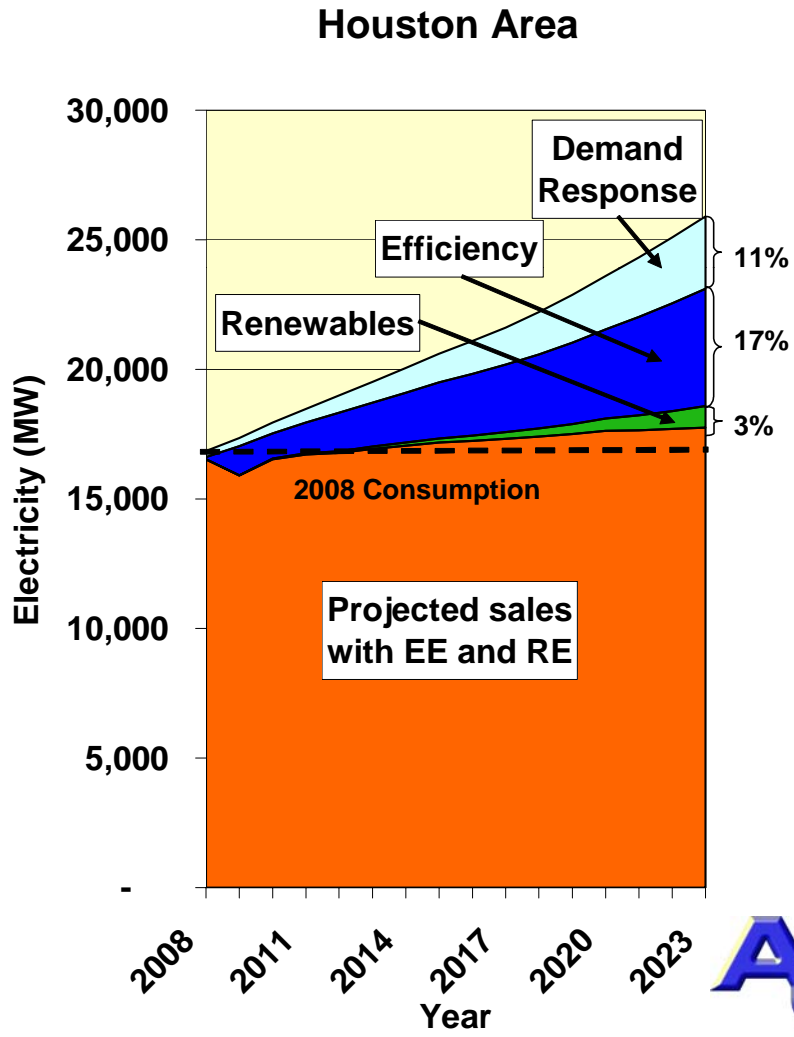
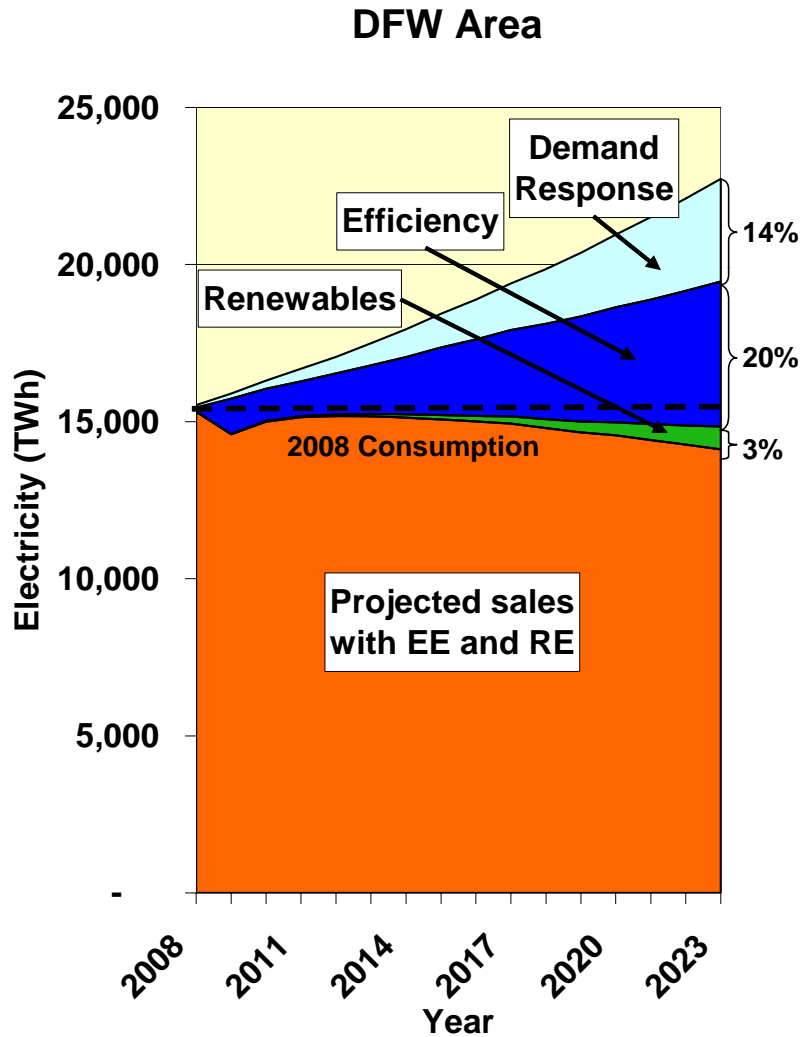
2023 DFW Electricity Savings = 23,330 million kWh



2023 Houston Electricity Savings = 23,174 million kWh

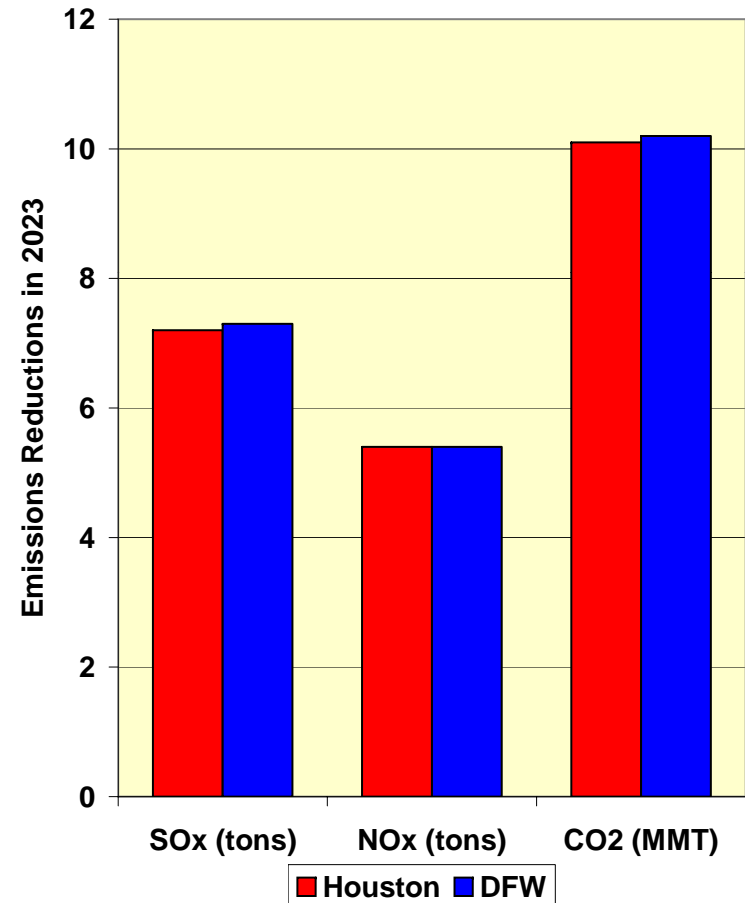


Impact on Peak Demand



Environmental Impacts

- EE/RE won't solve pollution problems in metro areas
- Clean resources will meet surging electric needs without exacerbating environmental problems
- Contributes to the overall environmental solution while maintaining economic growth



2023 Economic Impacts

Policies reduce expenditures on electricity. Savings and investments to implement policies create additional economic activity in regions that translates into new jobs.

	Statewide	DFW	Houston
Cum. Net Electric Expend Savings (Bill. \$)	\$73	\$22	\$21
Net New Jobs	38,300	11,700	11,100



Conclusions

- Energy efficiency and renewable energy policies can allow regions to meet electricity needs, and allow continued economic growth while not contributing further to environmental problems
- EE&RE can add economic benefits in form of new jobs and new local revenues
- Important for local governments to take leadership – half to 2/3 of opportunity can be realized by local policies



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