

Financing Energy Efficiency

Clean Air Through Energy Efficiency (CATEE)

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State Energy Conservation Office (SECO)

Conservation vs. Efficiency

Conservation

- ❖ A change in **behavior** based on the attitude:

“Do less to use less”

Efficiency

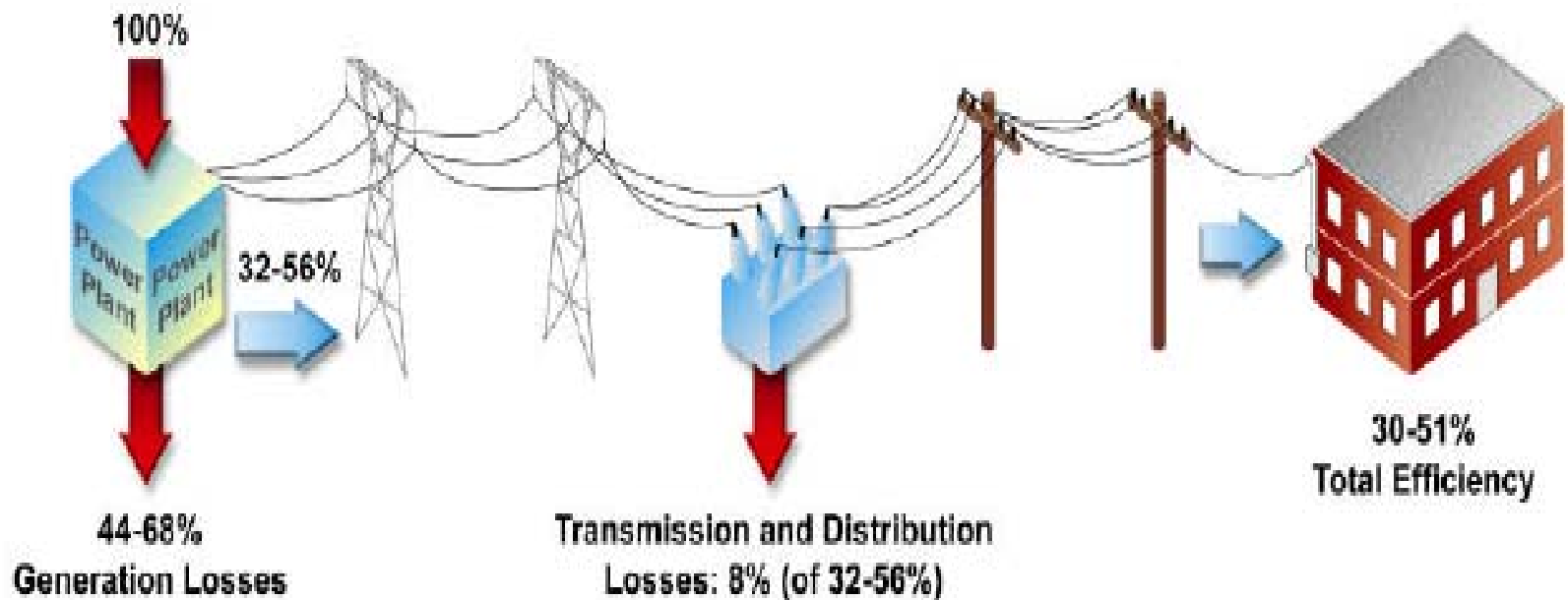
- ❖ The application of **technologies and best practices** to eliminate waste based on the attitude:

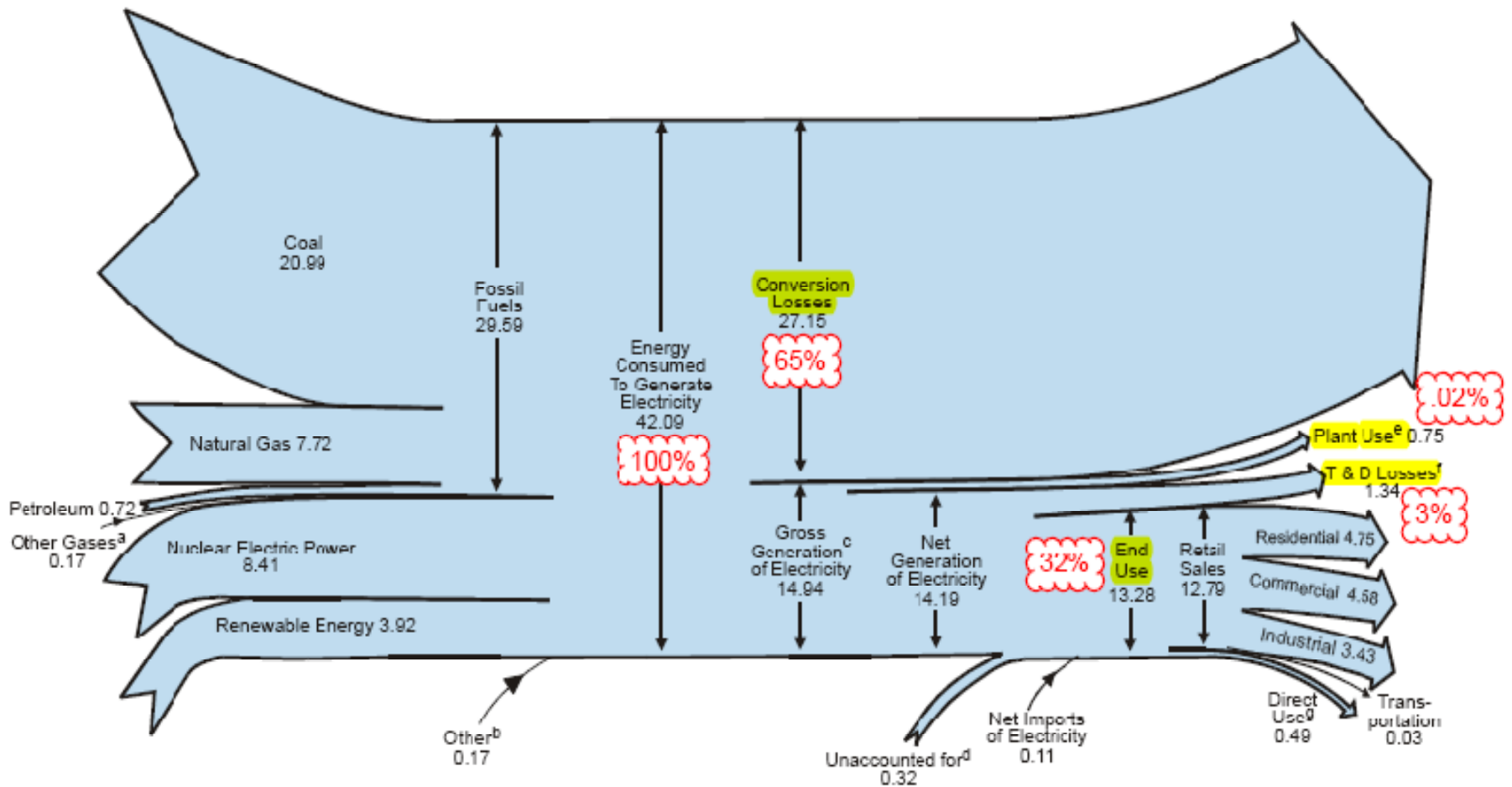
“Do the same or more with less”

Why Energy Efficiency?

- ❖ Stewardship of natural resources & taxpayer dollars
- ❖ Enhance summer electric supply reserve margin
- ❖ Pay for capital projects and deferred maintenance via avoided energy costs
- ❖ Lead by example

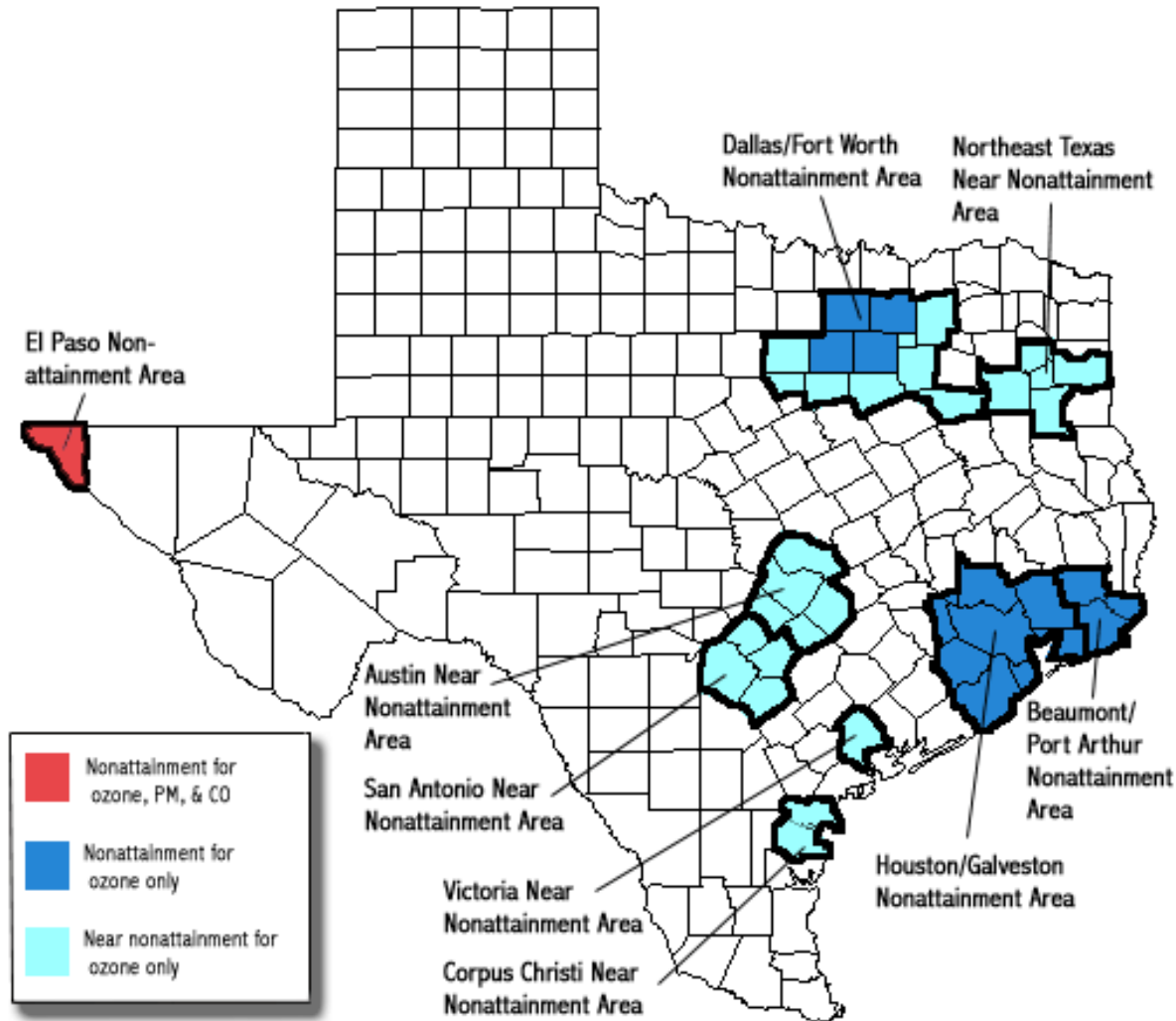
Improving Air Quality – 3X





US Energy Information Administration
 Annual Energy Review 2007
 Electricity Flow (Quadrillion Btu)

Texas' Nonattainment and Near Nonattainment Areas



SIP-Creditable EE



- ❖ Building energy codes
- ❖ Local solar photo-voltaic (PV) installations
- ❖ Local solar thermal installations
- ❖ Zero emission distributed generation (Fuel cells)
- ❖ Wind power purchases
- ❖ Water/wastewater energy-related improvements
- ❖ Street lighting and traffic signal lighting improvements
- ❖ Energy conservation building retrofits
- ❖ Appliance upgrades and cool roofs
- ❖ LEED-certified or comparable new buildings
- ❖ Building commissioning projects

Public Sector Energy Efficiency New and Renewed Requirements

HB 3693 and SB 12

80th Texas Legislature (2007)

Utility Data Reporting

(all cities, counties, school districts, agencies, public higher education)

- 1) A governmental entity responsible for payments for electric, water, or natural gas utility services shall record in an electronic repository the governmental entity's metered amount of electricity, water, or natural gas consumed for which it is responsible to pay and the aggregate costs for those utility services.
- 2) The governmental entity shall report the recorded information on a publicly accessible Internet website with an interface designed for ease of navigation if available, or at another publicly accessible location.

*Government Code Chapter 2264.001

School Districts

- 1) Utility data reporting.
- 2) Adopt (by Board of trustees) a goal to reduce district's annual electrical consumption by 5% for 6 years, beginning September 1, 2007.
- 3) Purchase and use energy-efficient light bulbs for instructional facilities.

Public Institutions of Higher Education

- 1) Utility data reporting.
- 2) Adopt a goal to reduce electrical consumption by facilities by 5% for 6 years, beginning September 1, 2007.
- 3) Implement all energy efficiency measures for existing facilities that meet the standards established for a contract for energy conservation measures under Local Government Code Section 302.004(b). (20 – year payback)
- 4) Submit annual reports to SECO in an electronic format regarding the entity's energy efficiency progress, efforts and consumption data.*
- 5) Purchase and use energy-efficient light bulbs for educational and housing facilities.

**Substitute: a percentage-based energy conservation plan adopted before 9/1/2007 that is in effect with quarterly reports submitted quarterly to the Governor, LBB and SECO.*

State Agencies

- 1) Utility data reporting.
- 2) Adopt a goal to reduce electrical consumption by facilities by 5% for 6 years, beginning September 1, 2007.
- 3) Implement all energy efficiency measures for existing facilities that meet the standards established for a contract for energy conservation measures under Local Government Code Section 302.004(b). (20 – year payback)
- 4) Submit annual reports to SECO in an electronic format regarding the entity's energy efficiency progress, efforts and consumption data.*
- 5) Purchase and use energy-efficient light bulbs for educational and housing facilities.

**Substitute: a percentage-based energy conservation plan adopted before 9/1/2007 that is in effect with quarterly reports submitted quarterly to the Governor, LBB and SECO.*

Political Subdivisions in the 41 Non-attainment and “affected” Counties

- 1) Utility data reporting
- 2) Adopt a goal to reduce electrical consumption in facilities by 5% for 6 years, beginning September 1, 2007.
- 3) Implement all energy efficiency measures for existing facilities that meet the standards established for a contract for energy conservation measures under Local Government Code Section 302.004(b). (20 – year payback)
- 4) Submit annual report to SECO in an electronic format regarding the entity’s energy efficiency progress, efforts and consumption data.

Texas Energy Partnership SB 12 and HB 3693 Support

- A) Creating a Master Plan for Energy Savings
- B) Discovering Current Energy Use
- C) Identifying Energy-Saving Opportunities
- D) Saving Energy With Little or No Money
- E) Upgrading Buildings for the Long term
- F) Finding the Money to Pay for it All
- G) Reporting Options

Paying for it All

- ❖ Local capital funds
- ❖ Municipal bonds
- ❖ Utility rebates and standard offer programs
- ❖ Loans, Federal government grants
- ❖ Budgeted utility dollars

The Business of Energy Efficiency

Energy efficiency projects are unlike other capital projects:

- ❖ Properly structured, they pay for themselves
 - ❖ Savings pay for upgrades
 - ❖ Upgrades stop waste
- ❖ They do not have to compete with other capital projects for funding
 - ❖ LoanSTAR financing
 - ❖ Energy Saving Performance Contracting

SECO Technical Assistance

❖ Preliminary Energy Assessments

- ❖ Baseline energy analysis
- ❖ Identify system optimization and equipment replacement projects
- ❖ Cost estimates – equipment and installation
- ❖ Estimated energy and cost savings
- ❖ Payback analyses for each recommended project

❖ Project implementation support

- ❖ Energy Savings Performance Contracting
- ❖ LoanSTAR financing

Energy Saving Performance Contracting (ESPC)

Authorizing Statutes:

- ❖ K-12 Public Schools
 - ❖ Texas Education Code, § 44.901
- ❖ Public Higher Education
 - ❖ Texas Education Code, § 51.927
- ❖ State Agencies
 - ❖ Texas Government Code, § 2166.406
- ❖ City/County Governments
 - ❖ Texas Local Government Code, § 302

Texas ESPC Provisions

- ❖ Design-build w/performance guarantee
- ❖ Professional services procurement
- ❖ Energy and/or water savings measures and related costs eligible
- ❖ Savings \geq costs
- ❖ 20 year maximum term (SB831, 80R)
- ❖ Savings guarantee required
- ❖ Payment and performance bond required
- ❖ Third party review required

State Agency ESPC Guidelines

Part 1: Getting the Most From Your Performance Contract and Contractor

Part 2: For the Owner - Contract Structure, Essential Elements and Certifications

Part 3: Request for Qualifications (RFQ) Template

Part 4: For the Contractor - Technical, Cost and Savings Criteria, Including M&V and Certifications

Part 5: Utility Assessment Report Format

Part 6: Third Party Independent Reviews

Part 7: State Agency Approval Checklist

Part 8: Funding of Performance Contracts

Master Lease Purchase Program

Texas Public Finance Authority w/Texas Bond Review Board

- ❖ The program finances the installed equipment cost and related engineering support
- ❖ Variable rate 5.5% w/semiannual adjustments tied to revenue commercial paper
- ❖ \$150M liquidity, \$300M authorization
- ❖ Line item lease payment appropriation to agency
- ❖ State agencies and public higher education
 - ❖ \$133 million for energy (ESPC) projects

Texas LoanSTAR Program

(Saving Taxes And Resources)

- ❖ Low interest revolving loan program for energy efficiency building retrofits
- ❖ Terms: 3% interest, 10 year simple payback
- ❖ Borrowers - any public entity in Texas
- ❖ 198 loans, 5.7 year average payback
- ❖ Cumulative energy savings – \$252 million
- ❖ Cumulative emission reductions since 1990:
 - ❖ NO_x 8,511 tons
 - ❖ CO₂ 2.6 million tons
 - ❖ SO₂ 5,911 tons
 - ❖ Mercury .0359 tons

Recent LoanSTAR Projects

❖ City of San Antonio

- ❖ LED traffic and pedestrian signals
- ❖ \$1.7M loan, \$880K savings, 2 yr ROI

❖ Collin County

- ❖ Lighting, water, pumps, motors, HVAC
- ❖ \$4.7M loan, \$470K savings, 10yr ROI

❖ Arlington ISD #1

- ❖ Lighting, EMS, VFD controls, chillers
- ❖ \$1.9M loan, \$438K savings, 4.3 yr ROI

❖ Arlington ISD #2

- ❖ Gymnasium lighting, power factor correction, mechanical system upgrades, engineering audit/assessment
- ❖ \$4.9M loan, \$650K savings, 7.2 yr ROI

Recent LoanSTAR Projects

❖ Los Fresnos ISD

- ❖ Direct digital controls, power factor correction capacitors, motion sensors, VFD controls
- ❖ \$2.7M loan, \$291K savings, 9.3 yr ROI

❖ City of El Paso

- ❖ Lighting, occupancy sensors, HVAC and controls upgrades, solar pool heating, LED traffic and pedestrian signals
- ❖ \$5M loan, \$1.7M savings, 2.9 yr ROI

❖ Red Oak ISD

- ❖ Lighting, occupancy sensors, energy management system, engineering audit/assessment
- ❖ \$2.2M loan, \$312K savings, 7yr ROI

Questions?

Dub Taylor, Director
State Energy Conservation Office

www.seco.cpa.state.tx.us