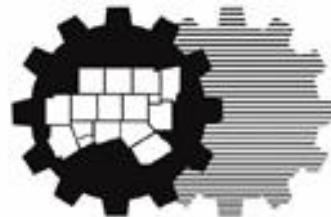


Resources for Energy Efficiency and Facility Retrofits

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

AUGUST 28, 2019



North Central Texas
Council of Governments



SECO

State Energy Conservation Office

SECO Resources

About SECO

Mission Statement: To Increase the Efficient Use of Energy and Water While Protecting the Environment

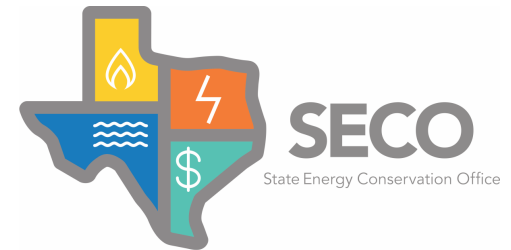
Focus on Public Sector Facilities – Indirectly Benefitting Taxpayers

Support for Energy and Water Efficiency Project Implementation

- Education and Training
- Technical Assistance
- Project Financing

U.S. Department of Energy State-Level Program Conduit

- State Energy Program (SEP)
- Pantex/Waste Isolation Pilot Plant (WIPP)



SECO Support

Training/Education

- Energy Codes (Workshops & [Adoption Toolkit](#))
- WattWatchers

Technical Assistance

- Preliminary Energy Audits (K-12 & Local Governments)
- Virtual Energy Audits

Financing

- LoanSTAR Revolving Loan Program
- Energy Savings Performance Contract Guidelines & Education

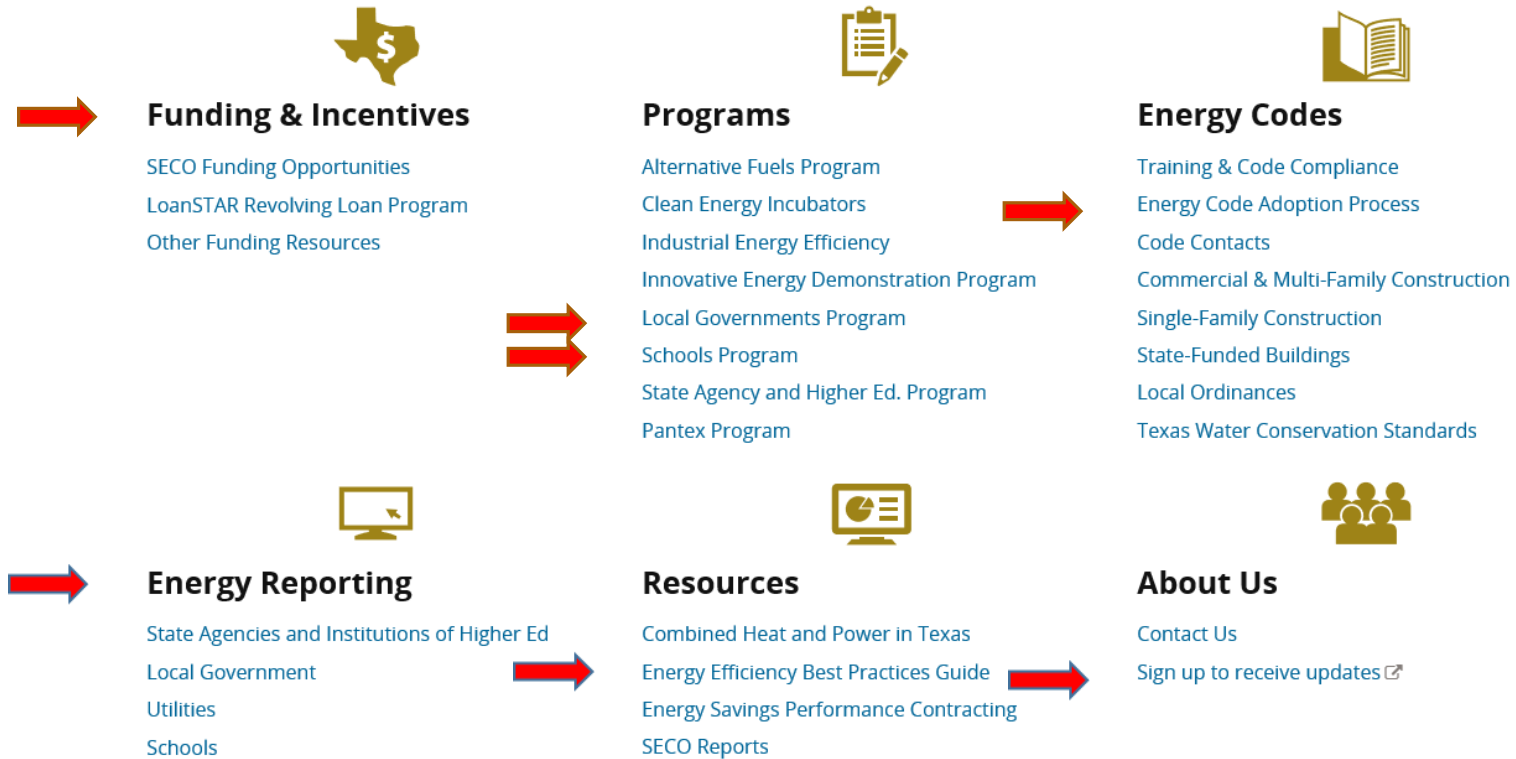


Programs



STATE ENERGY CONSERVATION OFFICE

SECO partners with Texas local governments, county governments, public K-12 schools, public institutions of higher education and state agencies, to reduce utility costs and maximize efficiency. SECO also adopts energy codes for single-family residential, commercial, and state-funded buildings.



LoanSTAR Revolving Loan

Finances Projects that Reduce Energy/Water/Utility Costs

- Simple Payback Period of 15 Years or Less
- 2% Loan Interest Rate; 1% if Choose ARRA Funds with More Reporting

Open Enrollment Through **August 30, 2019**

- Maximum \$8 Million Loan Per Application
- Maximum 3 Loans per Entity

Program Overview:

https://www.youtube.com/watch?v=4IFuj_5ZeGI

Other Funding & Incentives

Database of State Incentives for Renewable Energy:

Local, Utility, State, Federal

www.dsireusa.org

DSIRE®



TEXAS DEPARTMENT OF AGRICULTURE
COMMISSIONER SID MILLER

Texas Department of Agriculture:

City Population < 50,000; County Population <200,000

Water / Wastewater infrastructure; Street / Drainage; Housing

Awards Range from \$75,000 - \$800,000

www.texasagriculture.gov/GrantsServices

Texas Water Development Board:

Financial Assistance Programs

Loans, Grants, Deferred Interest, Combination Grant/Loan

Political Subdivisions, non-Profit and Community Water Supply

Corporations, Private

www.twdb.texas.gov/financial/programs



Texas Property Assessed Clean Energy (TX-PACE) Program



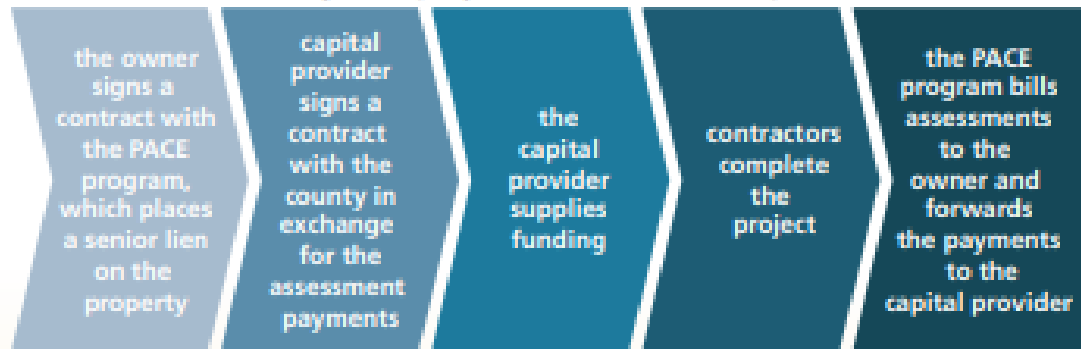
TX-PACE facilitates the use of private capital to finance water conservation, **energy efficiency**, resiliency, and distributed generation projects to eligible properties

How It Works

A Building Owner:



If the owner, building, and project all meet PACE requirements:



Eligible Improvements:

Chillers, boilers, and furnaces • HVAC, BMS, BAS, EMS controls • Lighting • Water heating systems • Energy management systems and controls • Roofing • Windows • Doors • Insulation • Elevator modernization • Pool equipment • Cogeneration or combined heat and power • Heat recovery and steam traps • Solar panels • Wind turbines • Water management systems and controls • Irrigation equipment • Rainwater collection systems • Toilets • Faucets • Greywater systems... and more!

www.TexasPACEAuthority.org

NCTCOG Resources

Conserve North Texas


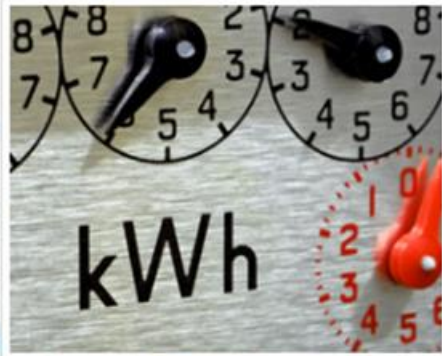

Clearinghouse of Energy Efficiency, Water Conservation, and Transportation Resources



Resource Types:

- Programs
- Tools
- Calculators
- Case Studies

www.conservenorthtexas.org

Topic		
 A close-up photograph of a person's hands cupped together, with water dripping from the palms.	 A composite image featuring a black analog clock face, the text 'kWh' in large black letters, and a red digital clock showing '10:10'.	 An aerial photograph of a multi-lane highway with several cars, with a large stadium (the AT&T Center) visible in the background.
Water	Energy	Fuel
Find resources to reduce water use and increase water conservation within the public and private sector.	Search resources that help reduce energy consumption and increase energy efficiency across all sectors.	Explore resources to reduce energy and fuel intensity within the transportation sector.

Conserve North Texas Resource: Preliminary Energy Assessments (PEAs)



★ **Preliminary Energy Assessments (PEAs)** are provided by the State Energy Conservation Office (SECO) and offer cost effective resource efficiency measures entities can implement to decrease energy consumption at **no cost to you!**

- Help guide the development of an energy management policy
- Provides facility benchmarking using ENERGY STAR Portfolio Manager
- Recommended maintenance procedures
- Develop efficiency level guidelines for equipment purchases

List of Preliminary Energy Assessments (PEAs) from Entities in the North Central Texas Region:

Cities:

- City of Richland – PEA 2007
- City of Rockwall – PEA 2010
- City of Fort Worth – PEA 2015
- City of Denton – PEA 2018

Water Districts:

- Tarrant Regional Water District – PEA 2010, PEA 2015
- Trinity River Authority – PEA 2015, PEA 2016
- City of Fort Worth Water Production – PEA 2016

Counties:

- Ellis County – PEA 2004

ISD's:

- Cedar Hill ISD – PEA 2009, PEA 2011
- Crowley ISD – PEA 2009
- Duncanville ISD – PEA 2009, PEA 2011
- Rains ISD – PEA 2009
- Allen ISD – PEA 2010

Find the full list of PEAs from entities in our region on Conserve North Texas [here!](#)

The image shows a 'Preliminary Energy Assessment Service Request Form' from the State Energy Conservation Office (SECO). The form is titled 'Form # SEP-032' and includes fields for 'Public Entity Name', 'Contact Person', 'Email Address', 'Street Address', 'City', 'State', 'ZIP Code', and 'Working Address'. It also has a section for 'Principles of Agreement' with a list of bullet points, and 'Additional Questions' with three yes/no questions. At the bottom, there is a 'Signature' section and contact information for SECO: 'Submit completed forms to SECO at Stephen.Ross@cpa.texas.gov or by mail to: State Energy Conservation Office, Attn: Stephen Ross, 111 E. 17th Street, Austin, TX 78711-1440'. The SECO logo is in the top right corner.

Go Solar Texas

Texas-Specific Information about Solar

Key Resource Types:

- Best Management Practices
- Cost Benefit Analysis
- Trainings
- Case Studies
- Meeting-in-a-Box

www.gosolartexas.org



Go Solar Texas



Solar power is an emerging clean energy option that can positively impact North Texas' environment and save consumers money on their electric bills. Dallas-Fort Worth is a prime location for solar technology and its growth due to the region's climate and geography. Solar power can provide much of the needed electricity when electricity demand is highest - when it's hot and the sun is shining.

With proper implementation, solar energy will help to improve air quality.



Solar 101

Learn the basics about solar energy, terminology, and equipment.



Steps for Going Solar

Considering installing a solar energy system? Now what? Steps for Going Solar provides details on solar energy systems, costs, tools for determining if solar is right for your property, and more.





U.S. General Services Administration – Emerging Building Technologies Resources

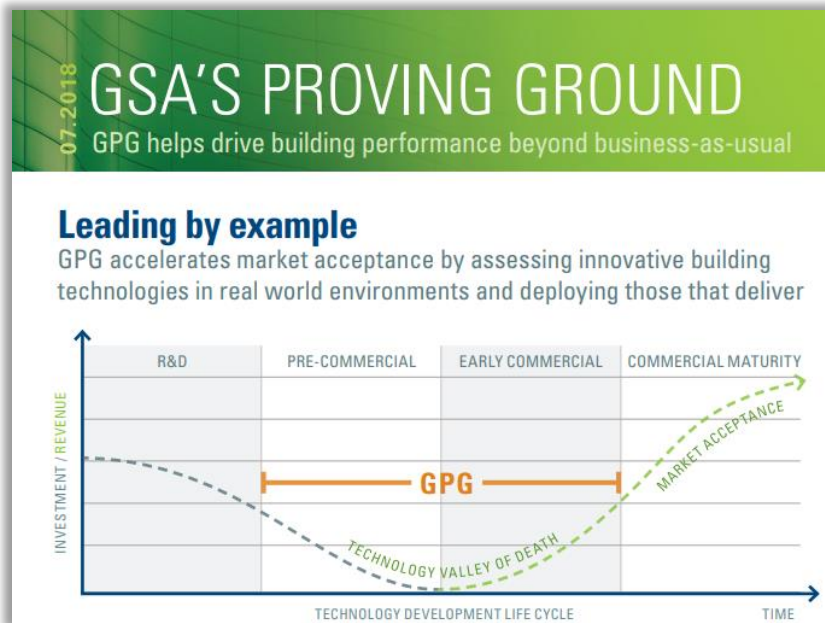
GSA's Emerging Building Technologies Programs



★ Enables GSA to make investments in next-generation technologies based on their performance

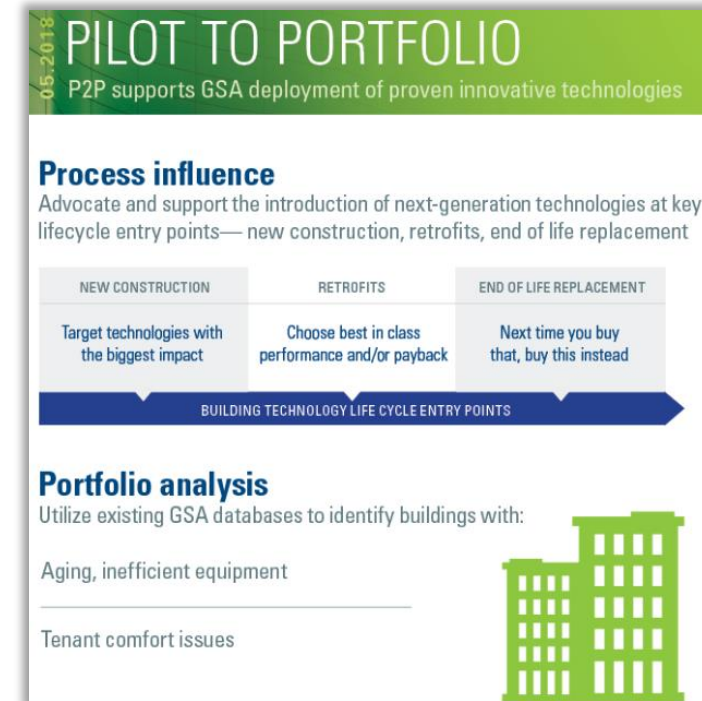
GSA Proving Ground (GPG)

Objectively assesses innovative Building Technologies in real-world environments



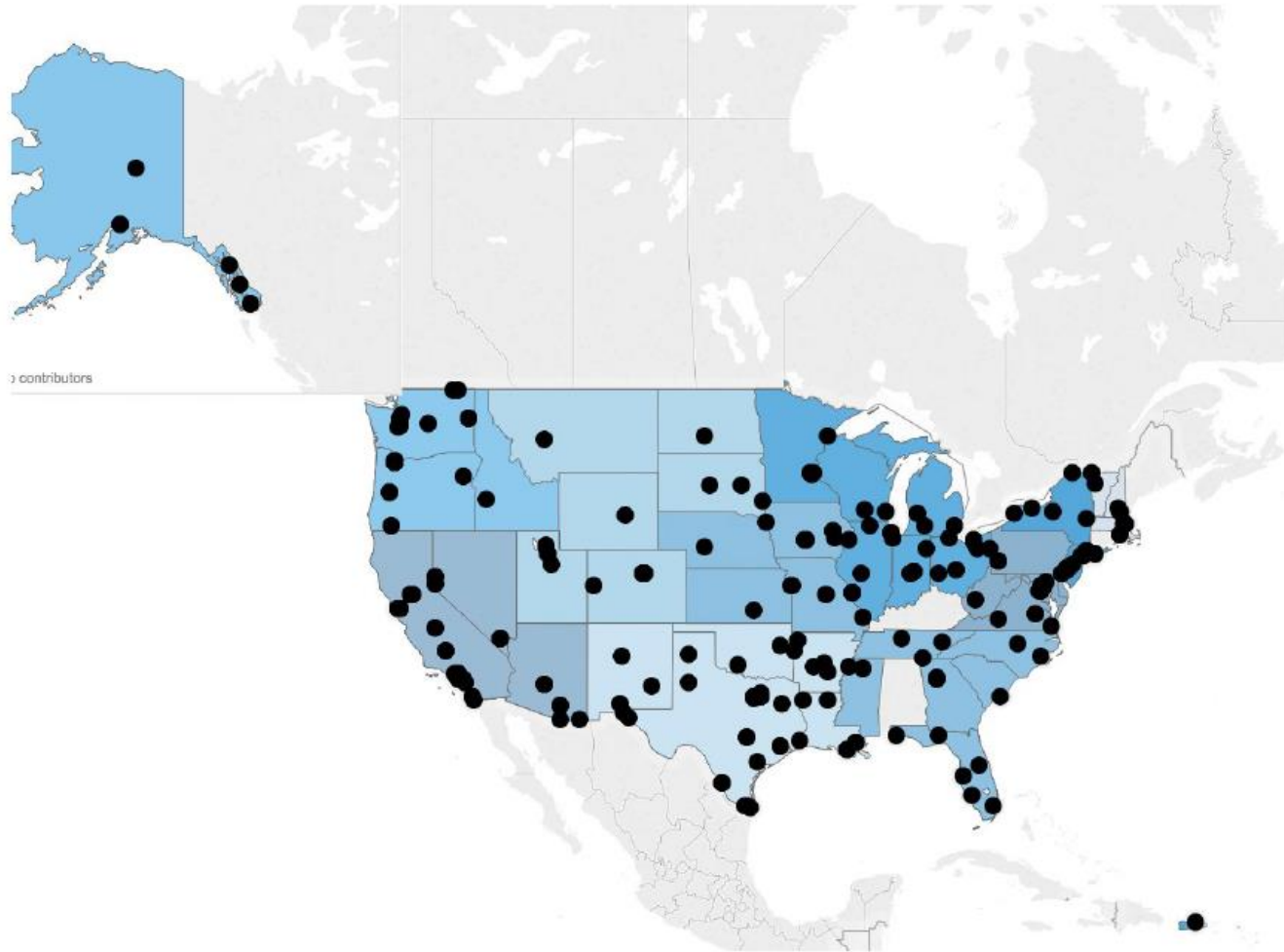
Pilot to Portfolio (P2P)

Supports the deployment of proven next generation technologies



gsa.gov/GPG

GPG Technology Deployments (2012 – 2017)



500+ facilities

Total Lifecycle Energy Savings
5,677,997 MMBTU

Total Lifecycle Cost Avoidance
\$110 M

High-Performance Workspaces and Building Systems



BUILDING SYSTEMS

- ★ Lighting
- ★ HVAC
- ★ Water
- IEQ
- Solid Waste
- Planted Roof
- Submetering

WORKSPACES

- Cafeteria
- Open Office Area
- Open Teaming Space
- Enclosed Conference
- Private Office
- Reception/Lobby
- Support Area
- Break/Pantry
- Computer/LAN room
- Tenant Corridor
- Tenant Restroom
- Laboratory

HIGH-PERFORMANCE WORKSPACES AND BUILDING SYSTEMS

Explore interior office workspaces and learn about high-performance design best practices as you compare materials. Explore building systems, their relationships to one another, and the integrative team necessary to achieve cost savings.

The interactive tool allows users to discover **high-performance design best practices** in a variety of workplace settings.

The tool also generates a **cost savings** associated with a system upgrade as well as the impact to resources and human behavior.

<https://sftool.gov/explore#building-systems>

Cost-Effective Upgrades Tool

Select Your Building Size

5,000 gsf

10,000 gsf

25,000 gsf

50,000 gsf

100,000 gsf

Select Your Climate Zone

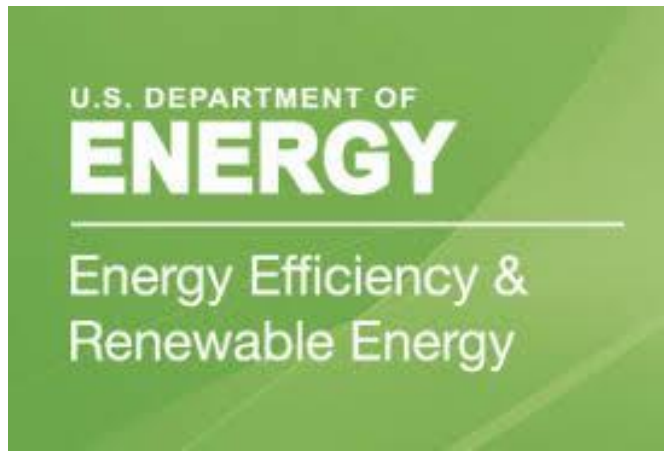
Select a **building size** and a respective U.S. **climate zone**

Climate zones are defined by DOE's Building America Climate Zones

View **recommended building efficiency measures** and their payback periods, capital costs, annual savings, annual cost etc. based on building size in the respective climate zone

<https://sftool.gov/plan/upgrades/selections>

Measure	Simple Payback ↑ (years)	Approximate Capital Cost (\$)	Annual Energy Savings (kBtu/sf)	Annual Energy Savings (kBtu/yr)	Annual Cost Savings (\$/sf)	Annual Cost Savings (\$/yr)
Shut down heating plant when there is no heating load	0-1	\$200	5.4	130,000	\$0.09	\$2,200
Implement a retro-commissioning (RCx) package	1-2	\$7,600	13.4	340,000	\$0.18	\$4,500
Widen zone temperature deadband and add conference room standby control (DDC zone controls)	1-2	\$4,600	6.3	160,000	\$0.09	\$2,400



Energy Efficiency & Renewable Energy (EERE) – Tools & Resources

Energy and Cost-Savings Calculators for Energy-Efficient Products

Calculate energy and cost savings for a variety of energy and water efficient products:

- Boilers
- Central air conditioners
- CFLs
- Electric and gas water heaters etc.

*Energy cost savings calculator for **Commercial Boilers***

Project Type	
	Is this a new installation or a replacement? <input checked="" type="radio"/> New <input type="radio"/> Replacement
	What is the deliverable fluid type? <input checked="" type="radio"/> Water <input type="radio"/> Steam
	What fuel is used? <input checked="" type="radio"/> Gas <input type="radio"/> Oil
	How many boilers will you purchase? 1 <input type="text"/> unit(s)
Performance Factors	
New	What is the capacity of the new boiler? 1000 <input type="text"/> MBtu/hr*
	What is the thermal efficiency of the new boiler? 94 <input type="text"/> % E _t
Cost Factors	
	What is the current cost of energy? \$ 0.90 <input type="text"/> per therm*
	What are the annual hours of operation?*** 1500 <input type="text"/> hours

CALCULATE

RELOAD DEFAULTS

FOR MORE INFORMATION

Tamara Cook

Senior Program Manager

Environment and Development Department

(817) 695-9221

tcook@nctcog.org

Lori Clark

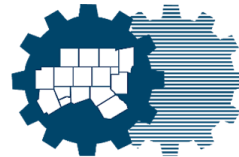
Program Manager

Transportation Department

(817) 695-9232

lclark@nctcog.org

<https://www.nctcog.org/envir/natural-resources/energy-efficiency>



**North Central Texas
Council of Governments**