

Control Number: 38578



Item Number: 19

Addendum StartPage: 0

## PUBLIC UTILITY COMMISSION OF TEXAS

Evaluation, Monitoring & Verification (EM&V) of the Texas Utilities' Energy Efficiency Portfolios

Energy Efficiency Implementation Project October 1, 2019



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# AGENDA



PY2018 Key Findings and Recommendations

**E** 

PY2019 EM&V Overview





## PY2018 ENERGY EFFICIENCY PROGRAMS

EM&V Key Findings & Recommendations



AEP Texas, Inc. - Central Division
AEP Texas, Inc. - North Division
CenterPoint Energy Houston Electric, LLC
El Paso Electric Co.
Entergy Texas, Inc.
Oncor Electric Delivery Co. LLC
Southwestern Electric Power Co.
Texas-New Mexico Power Co.
Xcel Energy SPS Co.

Saved 577,804,709 kWh Reduced demand by 475,752 kW

# LIFETIME SAVINGS COST OF \$0.009 KWH AND \$19.99 PER KW.

#### 2018 Energy Efficiency Accomplishments

#### Exceeded Goals

Exceeded demand reduction and energy savings goals

#### Improved Cost-effectiveness

Improved costeffectiveness of programs even with a lower avoided cost of energy

#### Savings = Power for Homes

:: -

Delivered savings that could power more than 28,000 homes annually

#### Diversified End-uses

Diversified the types of end-uses addressed by the programs, specifically increasing the amount of efficient HVAC, which is the main driver of summer peaks

#### Texas Now a National Leader

Texas recognized as a national leader in defining kW reductions from energy efficiency programs

## SAVINGS BY PROGRAM TYPE





Load Management

HTR SOP

Other



#### PY2018 SAW HIGHEST DEMAND REDUCTIONS TO-DATE AND SECOND HIGHEST ENERGY SAVINGS.

EVALUATED SAVINGS 2012 - 2018



## UTILITIES CONSISTENTLY EXCEED LEGISLATED GOALS

EVALUATED SAVINGS AND GOALS 2012 - 2018





#### 2018 Cost-Benefit Ratio & Cost of Lifetime Savings

## STATEWIDE COST-EFFECTIVENESS REMAINS OVER 2.0



HALF OF CUMULATIVE DEMAND SAVINGS ACCRUE TO COMMERCIAL CUSTOMERS AND THE OTHER HALF TO RESIDENTIAL SEGMENTS

PY2012—2048 Lifecycle Demand Reduction by Sector (MW)



Other: AC/HP Tune Up, Appliance, Behavior, Custom M&V, Food Service, Motors, Refrigeration, Roofing, Water Heat, Whole Building, Windows.

HVAC, LIGHTING AND SHELL MEASURES ACCOUNT FOR TWO-THIRDS OF THE CUMULATIVE DEMAND REDUCTIONS

PY2012—2048 Lifecycle Demand Reduction by End Use (MW)



Other: AC/HP Tune Up, Appliance, Behavior, Custom M&V, Food Service, Motors, Refrigeration, Roofing, Water Heat, Whole Building, Windows.

## LIGHTING IS OVER A THIRD OF CUMULATIVE SAVINGS AND HVAC OVER A QUARTER

PY2012—2048 Lifecycle Energy Savings by End Use (GWh)

## EM&V INFRASTRUCTURE



## EM&V SCOPE

Census tracking system savings verification with additional activities prioritized by program

- Verify gross energy and demand savings for all energy efficiency and load management programs
- Estimate net savings
- Determine program and portfolio cost-effectiveness
- Prepare and maintain a statewide Technical Reference Manual (TRM)
- Provide information to improve program performance
- Provide ongoing support for M&V plans, savings calculation tools, deemed savings petitions, and implementation guidance

Engineering desk reviews, on-site M&V, interval meter data analysis, participant surveys

## EVALUATED AND CLAIMED SAVINGS ARE SIMILAR

The utilities have demonstrated a willingness to work with the EM&V team

upfront M&V reviews or additional technical assistance or input can reduce uncertainty in savings estimates;

implementing recommended savings adjustments from EM&V findings

Utility	EM&V Demand Claimed Savings Adjustments (kW)	EM&V Energy Claimed Savings Adjustments (kWh)
AEP TCC	31 🕜	590,434 🕥
AEP TNC	-3 🔮	-49,983 🔮
CenterPoint	-862 🔮	-2,296,203 😍
El Paso Electric	-3 🔮	-20,082 😍
Entergy	172 🕜	41,675 🕎
Oncor	1 🕢	-109,961 🔮
SWEPCO	-11 🔮	-66,846 😍
TNMP	-8 🔮	6,386 🕥
Xcel Energy	0 🕢	12,112 🕥
Overall	-683 😍	-1,892,469 😍



Recommendations from the PY2018 EM&V completed in 2019 are expected to be implemented in PY2020 after they are vetted by the EEIP (§ 25.181(o)(9)).

#### Commercial Program Recommendations

- Project timing
- HVAC projects
- Lighting projects
- Building type selection
- New construction projects
- Custom assumptions
- Midstream programs
- Recommissioning programs
- Small Business programs



#### Residential Program Recommendations

- Ceiling insulation projects
- Attic encapsulation projects
- HVAC capacity bins
- Duct sealing education
- HVAC project participation
- New homes
- AC Distributor program



# Load Management Program Recommendations

- Cross-sector
- **Commercial programs** •
- Residential programs



### Portfolio Recommendations

- Program tracking data
- Project documentation



# PY2019 EM&V

#### Verification across all programs

- Program tracking data verification of claimed savings across all programs
- Census review of residential deemed savings calculations and load management programs

Increased rigor for medium and high priority programs

- Commercial desk reviews and on-site M&V
- Residential consumption analysis for retrofit and new homes programs
- Upstream programs desk reviews

## **EM&V OVERVIEW**

# Residential programs

- Substantial statewide savings
- have recently responded to various TRM updates to the envelope measures
- Expanded measure mix, in particular HVAC

# New homes programs

- Substantial savings for some utility portfolios, though not statewide
- responding to baseline changes in the TRM in response to new statewide energy code

## **HIGH PRIORITY**

#### Commercial SOP and MTPs

- · largest percentage of statewide savings
- Consistent EM&V findings similar to claimed savings, but with identified adjustments and improvements
- Small business also included again in 2019 as some issues were found in 2018

Upstream programs and Load Management

 New upstream programs that have not previously received additional EM&V

 Load Management continues with medium priority due to its contribution to kW reductions

## **MEDIUM PRIORITY**

## **TECHNICAL ASSISTANCE**



Scope continues to include technical guidance/M&V discussions and review upon utility request

> Steady flow of reviews for unique situations, new technologies and new customer types

- Data Centers
- •RCx "light"
- Various project situations where the project eligibility/baseline is unclear or M&V method is unclear, typically large/complex type projects

Do you have any additional questions for us?

Lark Lee, Lark.Lee@tetratech.com

Therese Harris, Therese.Harris@puc.texas.gov



## Thank you for your time today

## PUBLIC UTILITY COMMISSION OF TEXAS

The Texas Technical Reference Manual (TRM)

Energy Efficiency Implementation Project October 1, 2019



# AGENDA





#### TRM Approval Process

### **TRM Update Process**

# TRM APPROVAL

Commission's EM&V contractor is tasked with updating the TRM at least annually

Commission Staff review and file approval of the updated TRM

## **COMMISSION APPROVAL**

Following staff approval there is a 45 day period to file a petition to challenge changes approved by staff.

Staff-approved updates to the TRM that are not challenged via the petition process are considered approved by the Commission.

## **COMMISSION APPROVAL**

# TRM UPDATE PROCESS

Texas' first TRM was developed in 2013 for Program Year (PY) 2014	•Updated annually for each program year prospectively
Transparency in energy efficiency measure savings	<ul> <li>Measure description, baseline &amp; efficient condition</li> <li>Eligibility and effective useful lives</li> <li>Program tracking and documentation needs</li> </ul>
Consistency in savings calculations	<ul> <li>Summer and winter peak demand definitions</li> <li>Clearly defined calculations and values</li> <li>Updated baselines</li> </ul>
Improved savings estimates	<ul> <li>Residential shell measures</li> <li>Commercial HVAC</li> <li>Solar PV</li> </ul>
Supports expansion of savings opportunities	•New deemed savings measures •M&V protocols

## **TEXAS TRM OVERVIEW**

## TRM FORMAT

Volume 1: TRM Overview and User Guide covers the process for TRM updates and version rollouts, weather zones, peak demand definitions, TRM structure and the format of the TRM measures

Volume 2: Residential Deemed Measures contains the measure descriptions and deemed savings estimates and algorithms for measures installed in residential dwellings.

Volume 3: Nonresidential Deemed Measures contains the measure descriptions and deemed savings estimates and algorithms for measures installed in nonresidential businesses.

Volume 4: M&V Protocols contains protocols to estimate claimed savings for measures that are not good candidates for deemed savings across both sectors

**Volume 5: Implementation Guidance** contains the PUCT's EM&V team recommendations regarding program implementation that may affect claimed savings

The Commission's EM&V contractor reviews TRM for needed updates at least annually (16 TAC §25.181(o) (6) (B)).

#### Additional updates

- Utility collaborative group, Electric Utilities Marketing Managers of Texas (EUMMOT)
- Individual utility (ies)
- Energy Efficiency Implementation Project (EEIP)

**TRM Working Group** meets biweekly and agree on prioritization and updates

PUCT staff, PUCT's EM&V team, EUMMOT and EUMMOT invited contractors

#### COLLABORATIVE UPDATE APPROACH
Utilities are the primary party responsible for drafting deemed savings updates

- Facilitates the EM&V contractor's role to provide third-party, objective reviews
- Exception is when the recommended change to the deemed savings value is a direct result of EM&V contractor's evaluation research (i.e., desk reviews, on-site M&V, modeling).

# **DEEMED MEASURE UPDATES**

Utilities or their contractors initiate M&V Protocols

new program or technology they plan to offer.

#### EM&V team integrates M&V Protocol into TRM

after it has been reviewed and agreed upon collaborative process

# **M&V PROTOCOLS**

### TRM Update Process Flow Chart



# **TRM UPDATE DOCUMENTATION**

The Commission's EM&V contractor maintains a "TRM Update Tracker"

- serves as the foundation for TRM revisions.
- Available for view on the EM&V SharePoint site, Technical Reference Manual/TRM Updates

The overall prioritization of updates (high, medium, low) informed by

- improvement of accuracy and consistency of savings estimates
- cost associated with the update

Do you have any additional questions for us?

Therese Harris, Therese.Harris@puc.texas.gov Lark Lee, Lark.Lee@puc.Texas.gov Rob McKay, Rob.McKay@tetratech.com



### Thank you for your time today





### Energy Efficiency Implementation Project (EEIP) Meeting

Austin, Texas October 1, 2019



# TRM 7.0

### Summary of Key Measure Updates



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#### <u>LIGHTING</u>: Standard & Specialty CFLs/LEDs

#### Standard & Specialty CFLs/LEDs:

- Removed 2<sup>nd</sup> tier baseline in response to 9/5 DOE rulemaking and definition for general service lamps (GSLs) in combination with a reduced EUL (reviewed annually) to account for transforming lighting market
- 2. Low Income Programs: While still reduced, a slightly higher EUL will be used for this customer class based on delayed market adoption and current tariffs
- 3. Key Takeaway: savings will be calculated against a single baseline and applied over a single EUL (weighting no longer necessary)
- 4. Extended current savings methodology for exterior lamps



- <u>HVAC</u>:
  - Duct Sealing: Clarified application of savings methodology for homes with multiple duct systems and implementation issues related to alternate approach (no leakage testing)

#### Mini-Split AC/HPs (NEW):

- 1. Savings methodology based on Central AC/HPs measure
- 2. Additional savings available based elimination of back-up resistance heat
- 3. Addressed potential savings for duct removal



• <u>HVAC</u>:

#### Central AC/HPs:

- 1. Combined into single measure and moved savings tables to appendix
- 2. Updated capacity ranges on deemed savings tables to allow normal rounding convention
- 3. Added 1.0 ton capacity range
- 4. Extended cooling efficiency tiers to 24.0 SEER
- 5. Extended heating efficiency tiers to 12.0 HSPF
- 6. Updated adjustment from cooling to heating capacity based on AHRI review
- PTHPs (NEW): Measure targets replacement of PTACs with resistance heat in residential applications (multifamily, senior living, nursing homes)



#### • WATER HEATING:

- Electric Tankless DHW/Fuel-Switching (Electric Storage to Storage/Tankless Gas DHW): Updated efficiency rating from Energy Factor to Uniform Energy Factor for compliance with current federal standard
- <u>ENVELOPE</u>:
  - **Ceiling Insulation**: Clarified R-value weighting for areas of insulation with varying R-values (reciprocal of average U-value)



#### • <u>ENVELOPE</u>:

- Attic Encapsulation: Updated savings to match Ceiling Insulation measure in conjunction with additional infiltration reduction savings (deemed at 18%) based on savings methodology from Air Infiltration measure
- Cool Roofs: Updated deemed savings tables to include new R-30 insulation category for consistency with updated baselines from attic encapsulation measure
- Solar Attic Fans (NEW): Energy savings based on reducing HVAC equipment load



#### • <u>APPLIANCES</u>:

- **Existing Appliance Measures**: Reviewed for opportunities to establish deemed values for various measure inputs to streamline implementation
  - 1. Ceiling Fans
  - 2. Clothes Washers
  - 3. Dishwashers
  - 4. Refrigerators

#### - Pool Pumps:

- 1. Addressed ENERGY STAR new v2.0
- 2. Extended savings to above ground pools



#### • <u>APPLIANCES</u>:

#### - ENERGY STAR<sup>®</sup> Appliance Measures (NEW):

- 1. Clothes Dryers
- 2. Freezers
- 3. Air Purifiers

#### Electric Vehicle Supply Equipment (NEW):

- 1. Savings based on reduced consumption for ENERGY STAR<sup>®</sup> electric vehicle chargers in standby mode
- 2. Additional demand savings being explored for off-peak charging, but not yet incorporated into TRM



#### • <u>LIGHTING</u>:

#### Lamps and Fixtures:

- 1. Updated baseline for general service lamps (GSLs)
- 2. Updated guidance for non-qualifying LEDs in new construction applications
- 3. Incorporated code-specified base site wattage allowance for new construction
- 4. Defined new construction baseline assumptions for outdoor athletic applications
- Added table of building type definitions/examples and updated select building type names for consistency with HVAC measure
- 6. New building types (General 24 Hour, Agriculture Long Day Lighting, Agriculture Non-24 Hour Grow Lighting, Education K-12 with Partial Summer Session, Outdoor Billboards)



#### <u>LIGHTING</u>:

-

- Lamps and Fixtures (continued):
  - 7. Updated annual operating hours and coincidence factors for outdoor athletic applications
  - 8. Added interactive effects for buildings with evaporative cooling
  - 9. Established savings assumptions for midstream program delivery
  - 10. Clarified measure life for select fixture types (LED tubes, LED corn cob lamps)
- **LED Traffic Signals (NEW)**: applicable for various signal types
  - 1. 8" and 12" Red, Yellow, and Green Balls & Arrows
  - 2. Large (18"x16") Pedestrian Signals
  - 3. Small (12"x12") Pedestrian Signals



#### • <u>HVAC</u>:

#### PTAC/PTHPs:

- 1. Clarified early retirement eligibility criteria
- 2. Added heating baseline for PTHPs replacing PTACs with electric resistance heat
- 3. Clarified voltage specification for rated efficiency values

#### HVAC VFDs:

- 1. Updated deemed savings to reflect varying design temperatures by climate zone
- 2. Replaced deemed savings tables with per horsepower savings
- 3. Extended to hot water distribution pumps and chilled water distribution pumps; cooling tower fans being considered for future update



- <u>ENVELOPE</u>:
  - ENERGY STAR Roofs: Corrected typo in R-value assumption table and deemed savings tables
  - Entrance/Exit Door Air Infiltration:
    - 1. Added footnote explaining derivation of ambient temperature assumptions
    - 2. Clarified application od deemed savings for buildings with gas heat



#### FOOD SERVICE:

- Convection Ovens: Updated product category definitions to match ENERGY STAR<sup>®</sup> category descriptions
- Electric Fryers: Updated high-efficiency condition and deemed savings tables for compliance with current ENERGY STAR<sup>®</sup> specification
- Ice Makers (NEW)



- MISCELLANEOUS:
  - Pool Pumps: Addressed new ENERGY STAR v2.0 update and clarified ineligible pump products
  - Premium Efficiency Motors (NEW)
  - High Volume Low Speed Fans (NEW): restricted to agricultural applications at this time, but may be expanded to other applications in a future update
  - Central DHW Controls (NEW): recirculation pumps reduce inefficiency by combining control via temperature and demand inputs



### Vol 4 M&V Protocols

#### <u>RESIDENTIAL NEW CONSTRUCTION</u>:

- Reference Home Characteristics: Updated to clarify current IECC 2015 code requirements
- Lighting:
  - 1. 75% high-efficacy lamps required by code
  - 2. For measures using prescriptive TRM savings methodology in lieu of energy modeling, clarified allowance to claim lighting savings for remaining 25%
- New M&V protocols established for smaller Retro-commissioning projects and for Thermal Energy Storage







#### **Amy Martin, Frontier Energy**

Please address any additional questions to: <u>dneumann@frontierenergy.com</u> 737.236.0298



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# Energy in Texas And...how SECO can help







Dub Taylor, Director Texas State Energy Conservation Office (SECO)



### **Energy in Texas**



- 1<sup>st</sup> the nation in production of crude oil & natural gas
- 1<sup>st</sup> in electricity production (generation)
- 1<sup>st</sup> in installed wind capacity
- 1<sup>st</sup> in total energy consumption (2/3 C&I)
- 1<sup>st</sup> in EE potential (US DOE)





Independent Statistics & Analysis U.S. Energy Information Administration

> State Energy Conservation Offic

### **Total Electricity Generation May 2019**

Rank 💠	State 🗘	Total Net Electricity Generation (thousand MWh)
1	Texas	39,953
2	Florida	22,200
3	Pennsylvania	17,275
4	California	16,753
5	Illinois	14,190
6	Alabama	12,068
7	Georgia	11,533
8	North Carolina	11,097
9	New York	10,162
10	Washington	9,858

Texas leads the nation in wind-powered generation capacity with more than 25,000 megawatts



# Texas Wind Energy: 20x in 15 years (146 projects/13,672 turbines)

#### ENERGY.GOV Office of ENERGY EFFICIENCY & RENEWABLE ENERGY



Total Installed Wind Capacity: 6,723 MW

Source: Global Energy Concepts (DNV-GEC) database

1-CA, 2-TX, 3-MN, 4-IA, 5-WY

Q2 2019 Installed Wind Power Capacity (MW) 185 1.987 MA - 113 75 N.I DE - 2 MD - 191 TN - 29 AZ 268 AR MS AL Wind Power Canacity Megawatts (MW 200K - 400K 50K - 200K 15K - 50K 1,000 - 15K HI 206 Surger Pro-100 - 1,000 PR - 125 20 - 100 0 - 20

Total Installed Wind Capacity: 97,963 MW

Source: American Wind Energy Association Market Report





### **Installed Solar – Top 10 states**









### Wind and Solar Resource









### **Weather Pricing Impacts**







#### Summer Weather Impacts on Load by Customer Type





ercot 5

#### Winter Weather Impacts on Load by Customer Type





ercot 5

### **Untapped EE "Resource"**



### **Economic Electricity Savings Potential** 2016-2035 (million MWh)





Source: Electric Power Research Institute (EPRI), 2017. State-Level Electric Energy Efficiency Potential Estimates



# Texas is Leaving Lots of Cost-Effective Savings on the Table!



Electricity Savings that could be Achieved through Continuation of Current Approaches (2016-2035)



Source: Electric Power Research Institute (EPRI), 2017. <u>State-Level Electric Energy Efficiency Potential Estimates</u>. Data on savings rates from ACEEE State Scorecard.



### State Energy Efficiency Scorecard 2018







### **About SECO**

<u>Mission Statement</u>: To increase the efficient use of energy and water while protecting the environment

- Authorization TX Gov't Code Chapters 447 and 2305
- Focus is public sector facilities customer side of the meter
  - Energy and water efficiency project implementation
  - Technical assistance/project financing
  - Education and training all sectors including commercial/industrial
- Update/maintain statewide building energy codes
- U.S. Department of Energy state level program conduit
  - State Energy Program (SEP) / Energy Assurance Planning
  - Pantex / WIPP
- One of 56 state/territory "energy offices"


# **SECO History**



- 1977 Governor's Office of Energy Resources (GOER)
- 1979 Texas Energy & Natural Resources Council (TENRAC)
- 1983 Energy Efficiency Division Public Utility Commission
- 1987 Energy Management Center Governor's Office
- 1991 Governor's Energy Office
- 1993 State Energy Conservation Office (SECO), General Services Commission
- 1999 State Energy Conservation Office (SECO), Comptroller of Public Accounts



- 1) Technical Assistance
- 2) Emerging Clean Energy Technology
- 3) Energy Education and Training
- 4) LoanSTAR Revolving Loan Program



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## Local Government Technical Assistance



#### Partners/Contractors

• Energy Systems Associates, Jacobs Engineering Group, Texas Energy Engineering Services, Inc.

- Preliminary energy assessments (PEAs) <u>at no charge</u> to municipal and county governments, independent school districts, county hospitals, port authorities, major airports, public water authorities and municipally owned utilities
- PEAs (ASHRAE "1.5") establish baseline and provides recommendations for cost-effective resource efficiency measures that could be implemented to reduce utility consumption or utility costs



## **Remote Energy Assessments**



### **Partners/Contractors**

• CLEAResult

- Identifies operational and capital related energy efficiency savings opportunities without onsite visits
- Uses software-based data analytics where sufficient daily, monthly or interval electric usage data is available
- Provided at no cost to selected public entities to help reduce energy bills, freeing up operating dollars for other needs and improving the usability and comfort of facilities



## **Residential and Commercial Energy Codes**

- 3 year cycle for commercial codes
- 6 year cycle for residential codes
- IRC/IECC publication triggers the process







## Energy Codes Compliance Collaborative



### **Partners/Contractors**

 SPEER, Building Codes Assistance Program, PNNL Building Energy Codes Program

- Collective effort among energy code stakeholders to better facilitate and coordinate actions/policies affecting energy code compliance throughout the state
  - Interactive training course on SECO website
  - 108 training workshops in 25 cities (2400 attendees)
  - DOE funded NASEO/SPEER/SECO Field Study ('14-'17)
  - Code Ambassadors, Energy Code Adoption Toolkit



# City Efficiency Leadership Council



## **Partners/Contractors**

- Houston Advanced Research Center (HARC)
- South-central Partnership for Energy Efficiency as a Resource (SPEER)

- Provides targeted assistance and outreach to Texas cities (and schools)
- Energy code adoption and compliance, city energy efficiency projects, benchmarking and disclosure, outreach coordination for property assessed clean energy (PACE) financing
- Best practices case studies (12), City Efficiency Toolkit



# **Regional Energy Management Project**



### **Partners/Contractors**

• North Central Texas Council of Governments

- Collaboration with North Central Texas Council of Governments
- Develop and deploy a regionally-focused, replicable energy management program
- Help facilitate public-sector benchmarking, educational activities and energy reporting activities



## Energy & Water Conservation Design Standards



- Applicable to State Agencies and Institutions of Higher Education
  - new construction and major renovations
- Three year update cycle ASHRAE 90.1 publication triggers process
  - Review and adopt by rule new energy and water conservation design standards
- Provide ongoing training and technical assistance
- SECO records the certification by the design professional verifying the building design complies with the energy and water design standards



## State Agency Energy and Water Management



- The Texas Government Code requires state agencies and institutions of higher education to:
  - Create and update a comprehensive energy and water management plan
  - Set percentage goals for reducing water, electricity, natural gas and gasoline
  - Submit energy and water management plans to SECO every year by October 31
- State agencies and higher education report via EPA's Energy Star Portfolio Manager and share the data with SECO
- SECO submits a biennial report to the Governor and the Legislative Budget Board on the status and effectiveness of utility management and conservation efforts of state agencies and institutions of higher education
- State Agency Advisory Group (SAEAG)



## **Texas Energy Services Coalition (ESC)**



- Energy Services Coalition is a national network of public, private, and non-profit sector experts
  - Engaged in promoting energy efficiency upgrade projects through guaranteed energy savings performance contracting (GESPC)
- The ESC Texas Chapter is co-chaired by SECO and is comprised of ESCOs, state agencies, local governments, SPEER, others
  - Education and training
  - Guidance documents/tools
  - Project profiles/case studies



- 1) Technical Assistance
- 2) Emerging Clean Energy Technology
- 3) Energy Education and Training
- 4) LoanSTAR Revolving Loan Program



# **Clean Energy Business Incubation**



#### **Partners/Contractors**

• The University of Texas at Austin

- Supports clean energy company growth and development through Clean Energy Incubators at public universities
  - Job creation through helping clean energy companies grow and develop
  - Create a sustainable clean energy network that works closely with both the public higher education institution and the surrounding community
- The University of Texas at Austin Clean Energy Incubator has the following core principles:
  - Job, opportunity and wealth creation through technology entrepreneurship
  - Solving global problems by fostering science-based entrepreneurship at American universities
  - Strengthening community through developing local and statewide entrepreneurial <u>ecosystems</u> around clean tech (energy, water, waste and transportation)



# **Clean Energy Business Incubation**



#### **Partners/Contractors**

• Texas Engineering Experiment Station at Texas A&M University

- Supports clean energy company growth and development through Clean Energy Incubators at public universities
  - Job creation through helping clean energy companies grow and develop
  - Create a sustainable clean energy network that works closely with both the public higher education institution and the surrounding community
- The Texas A&M Engineering Experiment Station (TEES) Clean Energy Incubator has the following core principles:
  - Get clean energy companies ready for investment and matched with investors
  - Provide an environment that engages university and community technological, commercialization, business and investor resources
  - Bring new companies to Texas and the region as well as jobs to the local economy
  - Help keep fledging and troubled clean energy companies in business
  - Help commercialize technologies from the TEES network of institutions



- 1) Technical Assistance
- 2) Emerging Clean Energy Technology
- 3) Energy Education and Training
- 4) LoanSTAR Revolving Loan Program



## Watt Watchers of Texas



### **Partners/Contractors**

• UT Energy Institute, DISCO Learning Media

- Online STEM program designed to help boost energy literacy for K-12 students and help schools save money by saving energy
  - Launched in 1985, Watt Watchers of Texas is an updated resource that builds upon the original beloved program and provides a modern look at energy, sustainability and conservation
  - Students, teachers, and families have access to energy saving tips, activities, and TEKS-correlated lessons at <u>www.watt-watchers.com</u>



## **HVAC Technician Training**

#### **Partners/Contractors**

- Houston Advanced Research Center (HARC)
- South-central Partnership for Energy Efficiency as a Resource (SPEER)

- Targeted HVAC system performance training to licensed HVAC technicians statewide
- Addressing peak loads through energy efficiency adds to system reliability, reduces all customer's cost of energy and reduces NOx emissions that contribute to poor air quality







# **Industrial Energy Efficiency**

#### **Partners/Contractors**

• University of Houston- UH Energy

- Support Texas manufacturers' efforts to decrease the energy and water intensity of their Texas operations – <u>focus on chemical and refining sectors</u>
- Five activities:
  - Develop, support and organize the Program Advisory Council
  - Conduct outreach on energy-efficiency and water-efficiency topics to Texas industries by organizing two Texas Industrial Energy Management Forums and one Texas Industrial Water Management Forum
  - Produce and disseminate three "highlight bulletins" for industrial energy and water management
  - Develop and maintain a web presence for the program
  - Provide coordination of meetings of interested stakeholders and an administrative home for the Texas Industrial Energy Efficiency Network







- 1) Technical Assistance
- 2) Emerging Clean Energy Technology
- 3) Energy Education and Training
- 4) LoanSTAR Revolving Loan Program



## LoanSTAR (<u>Saving Taxes And Resources</u>) Revolving Loan Program

- Finances energy or water saving cost retrofits for public facilities
- \$200+ million revolving fund
- SECO originates and services loans
- Eligibility any public/taxpayer supported entity
- Funded 300+ loans totaling over \$400 million – zero defaults
  - Low interest 1% ARRA/2% non-ARRA
  - Term = simple payback up to 10/15 years



### Total savings: \$632 million (June 19)



# LoanSTAR

## Active projects- \$60.7 million

#### K-12 School

#### Local Government

- Brenham ISD
- Caldwell ISD
- Cedar Hill ISD
- Corsicana ISD
- Cranfills Gap ISD
- La Villa ISD
- Garland ISD
- Perryton ISD

#### **Higher Ed**

• Kilgore College

- Cameron County
- City of Freeport
- Houston Airport
  System
- City of Laredo
- City of Temple
- Maverick County

#### State Agency

- TDCJ Ellis/Estelle
- TDCJ Hodges/Skyview

### New projects - \$14.8 million

- Bryan ISD
- Caldwell ISD
- Jasper ISD
- Port Lavaca ISD
- Cameron County
- City of Freeport
- Texas Facilities Commission
- UT Arlington



## Thank You!

Dub Taylor, Director State Energy Conservation Office <u>dub.taylor@cpa.texas.gov</u>

comptroller.texas.gov/programs/seco

