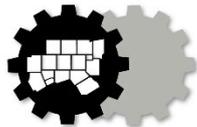




# North Central Texas SolSmart Informational Webinar

June 22, 2017  
11:00 a.m. - 12:00 p.m.

Sponsored by:



North Central Texas  
Council of Governments



[www.GoSolarTexas.org](http://www.GoSolarTexas.org)



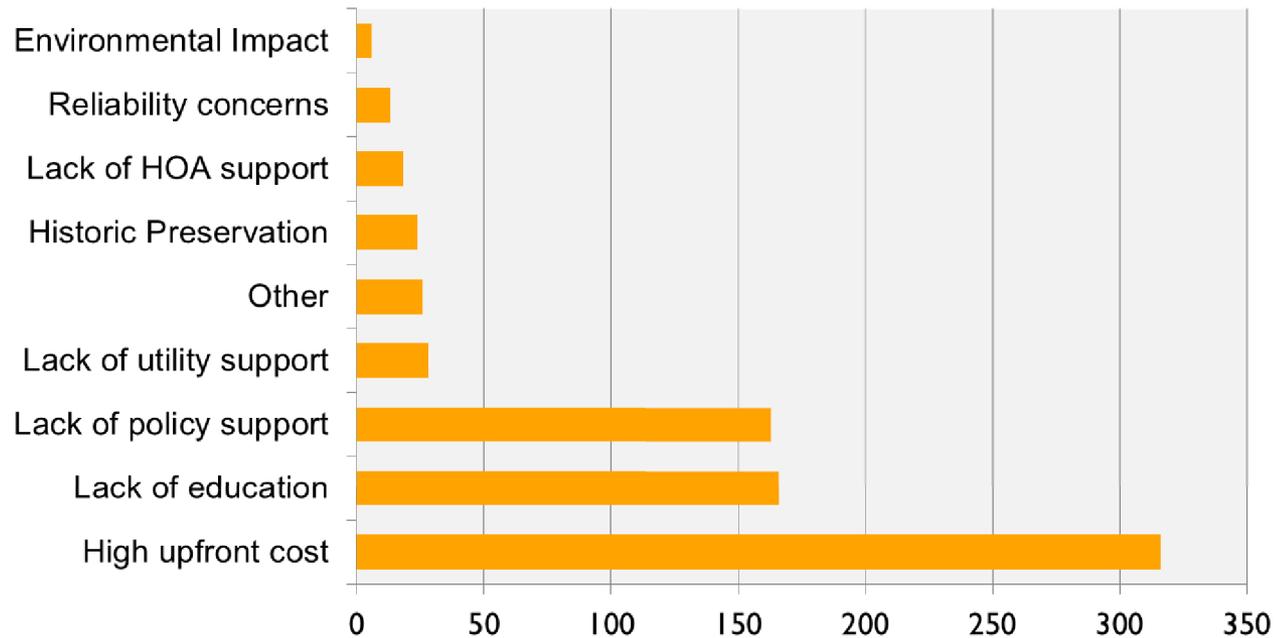
# SOLSMART

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NATIONALLY DISTINGUISHED. **LOCALLY POWERED.**

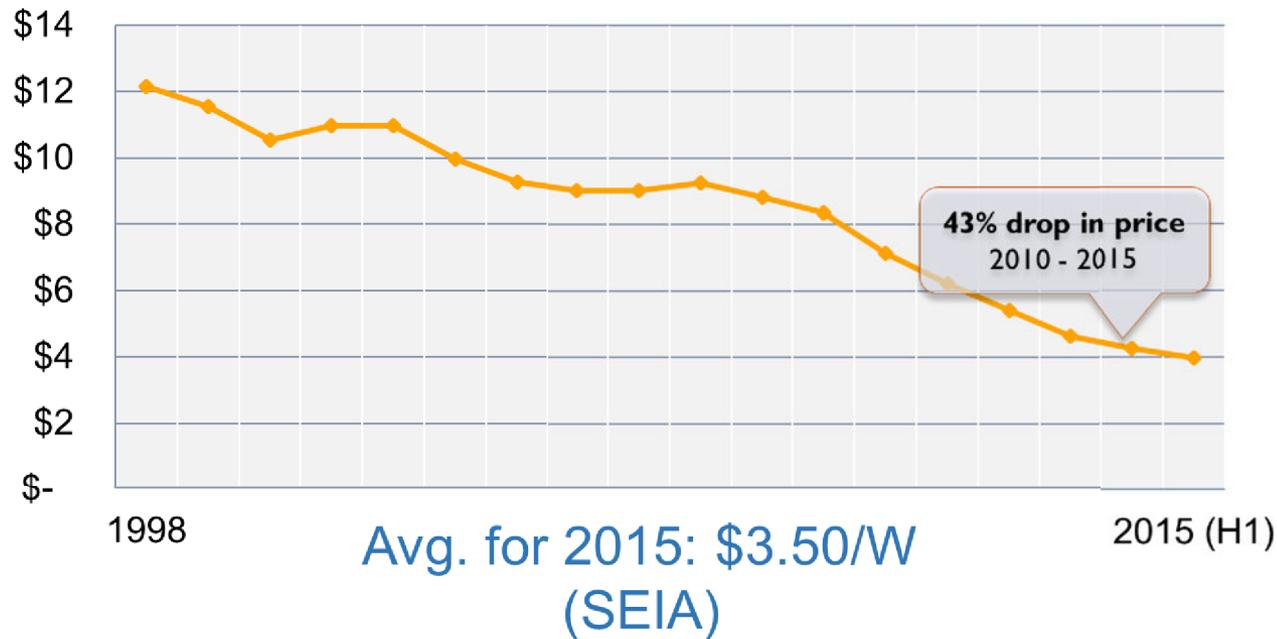
“ SolSmart is a prominent national recognition and technical assistance program which **recognizes local governments for their efforts in building stronger solar environments** around the country. ”

# Common Barriers to Solar

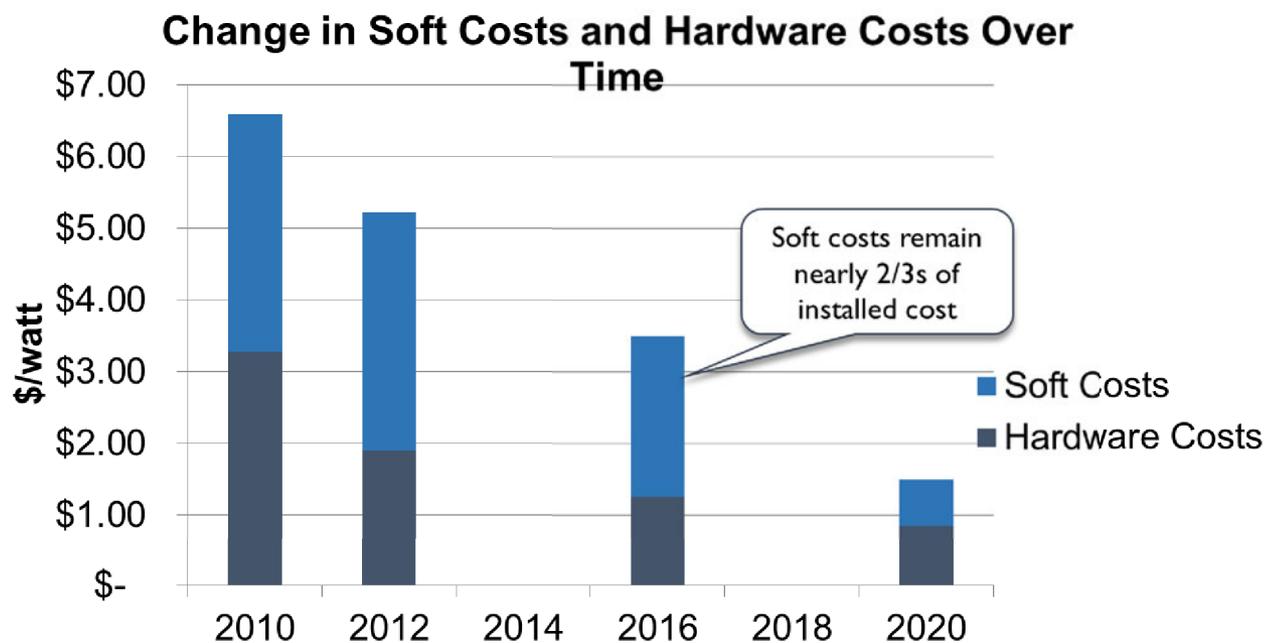


# Dramatically falling costs

## US Average Installed Cost for Residential PV



# Dramatically falling costs



**Less time → Lower cost → More solar**



1. Local governments can reduce solar costs by streamlining
2. Excess costs slow solar market growth
3. There is substantial room for improvement

# No-Cost Technical Assistance

- All communities pursuing SolSmart designation are **eligible for no-cost technical assistance** from national solar experts.
- Technical assistance helps governments **reduce solar costs, spur the local solar market, and achieve SolSmart designation.**

## Technical Assistance Topics

Permitting	Solar Rights
Planning & Zoning	Utility Engagement
Inspections	Community Engagement
Construction Codes	Market Development & Finance

# SolSmart Advisors

- **Program-funded temporary staff** to help communities achieve SolSmart designation.
- Advisors **help governments apply industry leading best practices**.
- SolSmart Advisors assist communities through **engagements lasting six months**.
- Competitive application. **No cost** to those communities selected as hosts.

# SolSmart Designation

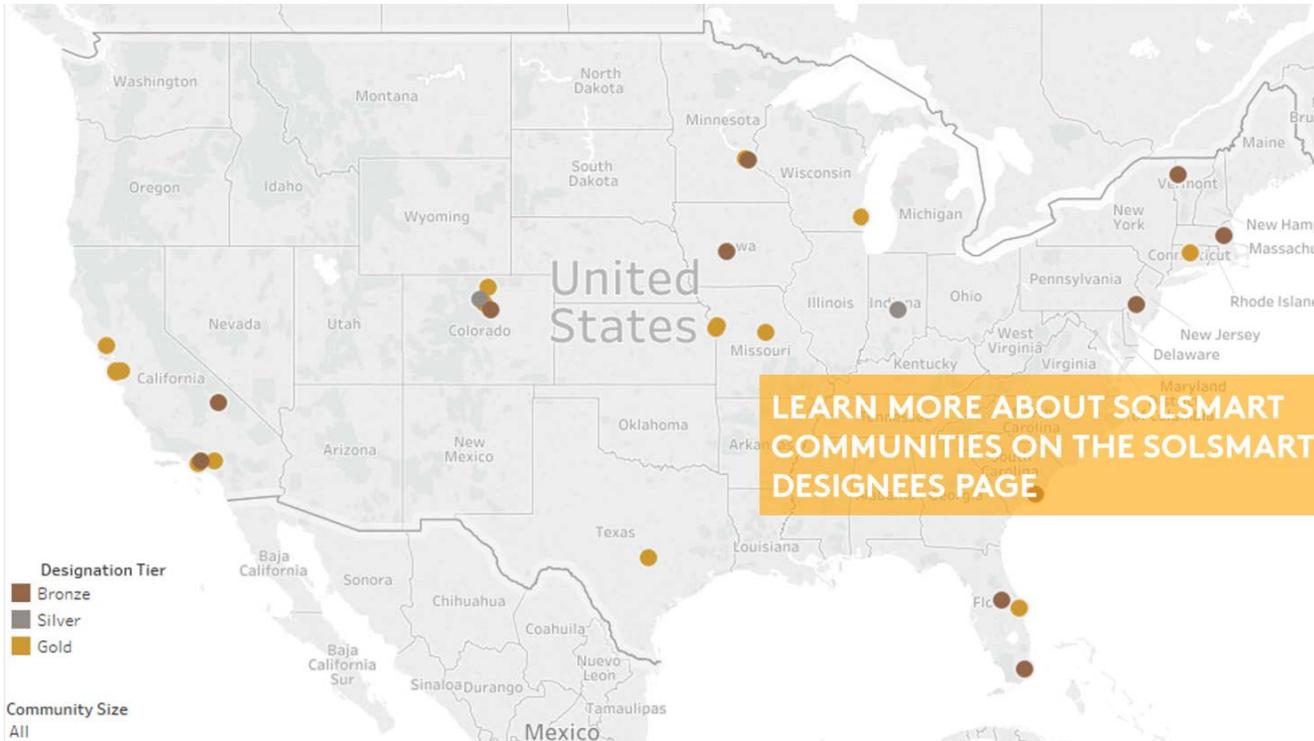
- Communities can earn **Bronze, Silver, or Gold**.
- SolSmart provides abundant **opportunity for national recognition** – online, press releases, events, and more.
- SolSmart Designees join an **elite cohort** of solar leaders
- **Designation is within reach** – technical assistance is available to help!

# SolSmart Designation



**SEVEN NEW COMMUNITIES  
RECEIVED SOLSMART  
DESIGNATIONS IN NOVEMBER**

# SolSmart Designees





# SOLSMART

NATIONALLY DISTINGUISHED. **LOCALLY POWERED.**



# Reducing the cost of solar for 300 communities throughout the country



NATIONALLY DISTINGUISHED. **LOCALLY POWERED.**



## Technical Assistance

- Online, by phone, or in-person
- Opportunity to receive a fully-funded solar expert on staff for 6-months (SolSmart Advisor)
- Free of cost to participating communities!

## Rewards and Recognition

- Nationally recognized award for leading solar communities
- Three levels: Bronze, Silver, Gold



Mayor Pro Tem Lissa Smith of Plano, TX accepts SolSmart Bronze designation.

Presenter:  
Yarcus Lewis  
City of Plano



**Plano**  
*City of Excellence*

# Why SolSmart?

- ▶ 2015 - STAR Communities Program  
Certified 4 
- ▶ Climate & Energy category was a challenge.
- ▶ Solar was a strength but wanted to benchmark.
- ▶ 2016 - SolSmart Early Adopter Status Awarded
- ▶ 2017 - SolSmart Bronze Designation Awarded
- ▶ 2018 - Resubmit for Gold Designation



# Notable Solar Related Achievements

- ▶ Plano Solar Advocates (Residential Co-op)
- ▶ Smart Energy Loan Program (Residents Only)
- ▶ Great Update Rebate Program (Residents Only)
- ▶ Green Business Certification Program
- ▶ Toyota USA - North American Headquarters
  - \*Largest PV installation in TX at 8.9MW

Thank You!



# City of Denton

## Tabitha Millsop

- ▶ Denton Municipal Electric (DME) has been owned by the residents of Denton since 1905. DME is a national leader in public power, providing 40 percent wind energy to every customer while maintaining competitive and reliable rates. DME is currently pursuing the Renewable Denton Plan, an industry leading initiative to increase renewable power from 40 to a minimum of 88 percent by 2019.
- ▶ <https://www.cityofdenton.com/government/departments/denton-municipal-electric>



# Recognition and Awards

- ▶ DOE Wind Power Award
- ▶ APPA Reliable Public Power Award
- ▶ APPA Community Service Award
- ▶ EPA Green Power Partner
- ▶ USCM Mayors' Climate Protection Award



# The City of Denton is Solar Friendly

- ▶ The City of Denton is pursuing the Silver Designation to accomplish the following:
  - ▶ Enhance the solar application process
  - ▶ Train and educate the Utility, Permitting and Fire Departments
  - ▶ Reduce application and rebate processing time



# Enhance Solar PV Application Process

- ▶ We believe that an enhanced application process, that combines DME's Solar PV application with the Building Permit application will cut down on processing time, paperwork and confusion for the customer.



# Increased Solar PV Rebate Funds

- ▶ The City of Denton revised its EnergySave Rebate Program, which included all energy efficient upgrades, into the GreenSense Incentive Program in 2009. In doing so, the Solar PV Incentive was budgeted separately which allowed more rebate funds to be awarded for solar; thus resulting in more installations.

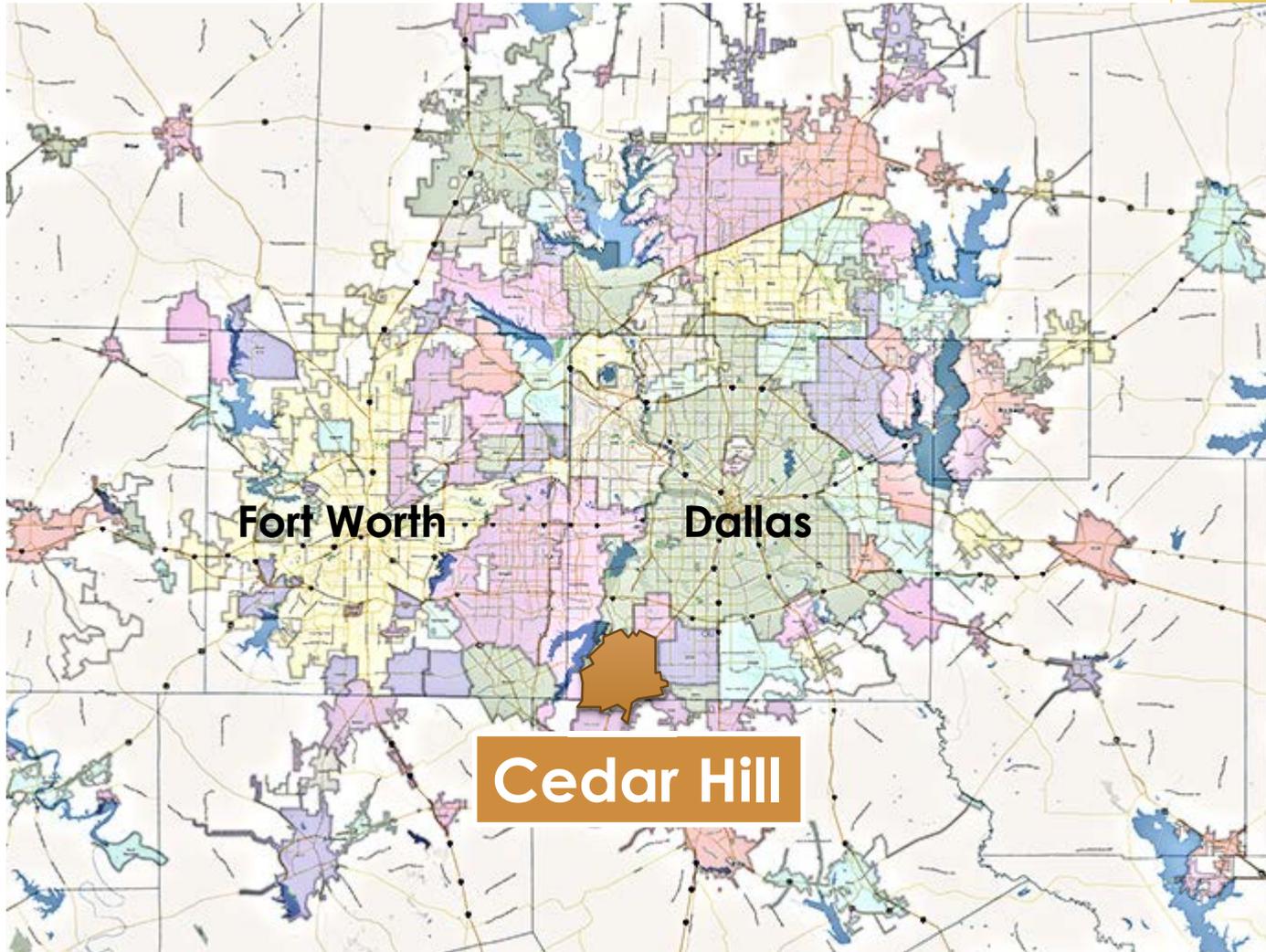


# Advice for Other Cities

- ▶ Get all Departments On Board
- ▶ Communicate the vision and plan.
- ▶ This will help move your city towards accomplishing your goals of becoming more solar friendly.



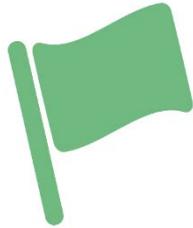
# Where Opportunities Grow Naturally



# Cedar Hill by the Numbers



Population  
46,500



Established  
1846



Elevation  
880 ft



Green Space  
18% (20% goal)

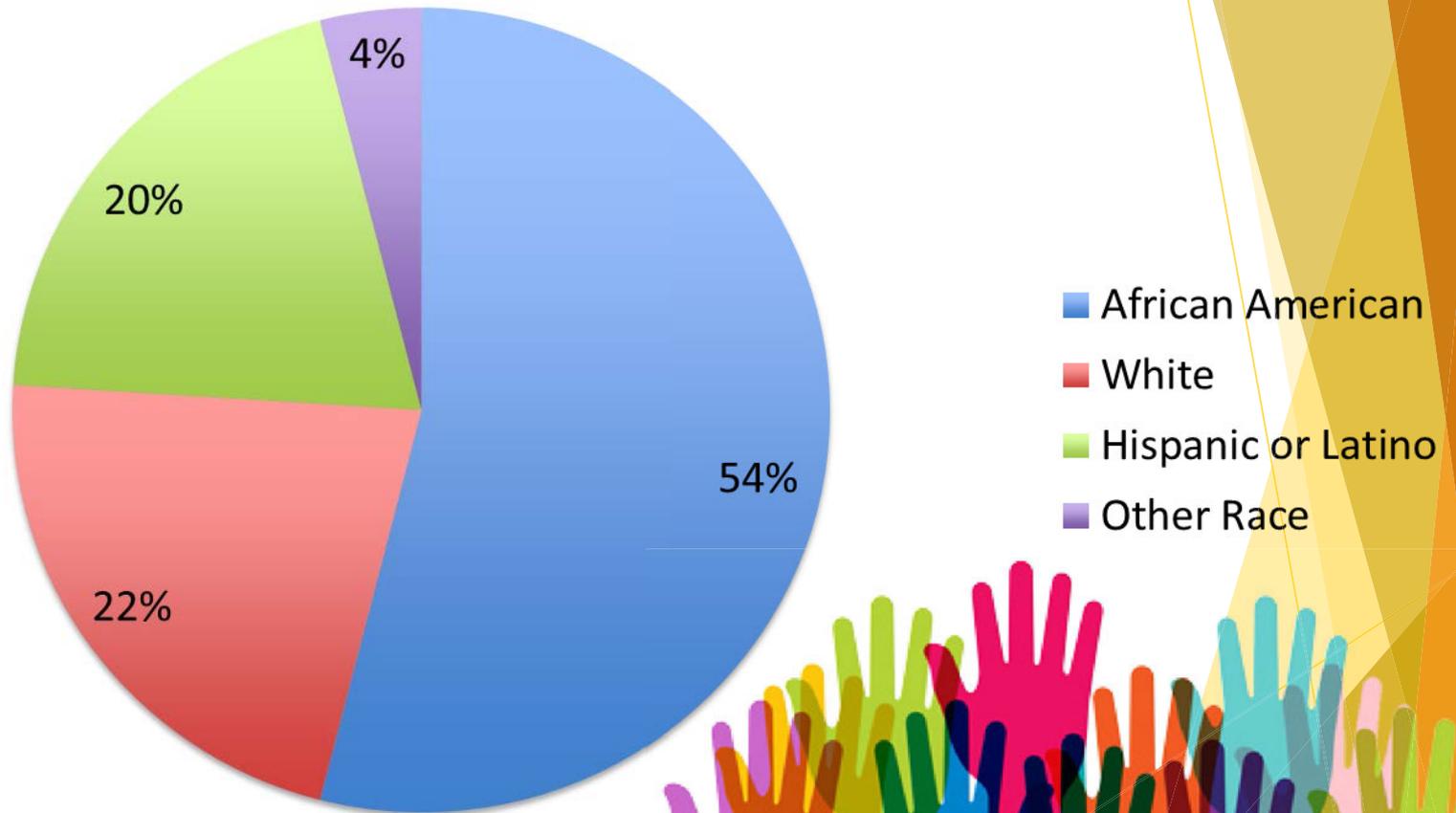


Tree Canopy  
7,938 acres



Number of Parks  
19

# Cedar Hill is Diverse



# Cedar Hill's Philosophy



Joe Pool Lake &  
Cedar Hill State Park

# Solar Panel System

## Solar: part of City's green initiative

You can't see them from the ground, but the solar panels installed on the roof of the Government Center will soon start cutting the City's electric bill by \$21,000 a year.

The system is roof-mounted and grid-tied. The solar panels are strategically located at the most prominent facility in Cedar Hill for maximum energy production and awareness to those living in and visiting the City.

Asst. City Manager Melissa Stephens began submitting grant applications in August, 2000 to fund most of this project. It will cost over \$900,000 to install the system and bring it online.

Federal, state and an Oncor grant covered all but \$25,000.

The City expects to save about \$21,000 a year in electricity costs at the government Center. It will take just over a year to recover



Installers finished connecting solar panels on the Government Center roof

the City's portion of the cost.

The panels will provide about 8% of the electricity for the Government Center. And they will enhance local awareness of alternative energy uses.

An interactive video

panel in the lobby will show visitors exactly how much energy the solar panels are producing at any point in the day.

Cedar Hill is adopting an aggressive "green" strategy, encouraging residents

any  
for  
co  
w  
er  
e

# City begins solar panel installation



BY RITA COOK  
Focus Daily News  
Rcook13@earthlink.net

**CEDAR HILL**—The City of Cedar Hill got a little greener this month when the much anticipated solar panels finally arrived and are being installed this week and next on the City's Government Center.

"[We are] crossing our fingers that weather cooperates in the coming weeks, we will have the panels up and producing power by the end of June," says Melissa A. Stephens, Assistant City Manager, City of Cedar Hill. "There is plenty of sun already and the summer hasn't even officially begun." The system is roof mounted and grid

tied.

The solar panels are strategically located at the most prominent facility in Cedar Hill for maximum energy production and visibility by those living in and visiting the City.

"With demand for energy continuing to rise, using renewable sources like the sun to produce clean, safe, reliable energy has taken on new urgency at the City of Cedar Hill," says Stephens. "This solar photovoltaic system totaling 152.64 kW is expected to produce over 200,000 kilowatt hours (KWH) and save over \$21,000 a year on electricity costs. By implementing this system, CO2 emissions will be reduced by 279,098 pounds annually, which can be equated to planting 35

acres of trees annually, or removing 24 average size cars from the road annually."

Stephens says too that the kilowatts per hour that will be generated by the solar panels is approximately eight percent of the Government Center's average consumption on a daily basis.

In the works since the summer of 2010, the city received the grant for the project from SECO back in January.

According to Stephens, The Texas State Energy Conservation Office (SECO) is specifically designated to award solar panel projects to local governments in the area just like this one.

The project actually began when the

SEE SOLAR...PAGE 7



# Wind Turbine

- 4.335 kW vertical axis



## Government Center Renewable Energy Systems

Solar System Size: 152,768 kW DC  
 Police Department Generating Since: July 5, 2011  
 City Hall Generating Since: June 28, 2011  
 Wind System Size: 4 kW AC  
 Wind Generating Since: July 25, 2012  
 Last Updated: --



# Solar Permitting

- ▶ Accessory use: We allow it across the board!
- ▶ Primary use: Requires CUP

P - Designates use is permitted within district

E - Designates nonconforming uses which may be replaced if destroyed.

- Designates use prohibited in district indicated

N/A - Means "not applicable", no parking requirement.

C - Designates use may be approved as conditional use permit.

\* - See section for definition.

Authorized Uses	Residential Districts									Nonresidential Districts							Parking Group	Supplemental Regulations
	RR	SF-E	SF-22	SF-15	SF-10	SF-8.5	SF-7	TH	MF	NS	LR	OT	CC	C	IP	I	Section 5.1.6	Section
Solar panel system (accessory use)	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		<a href="#">4.1.10</a>
Solar panel system (primary use)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		<a href="#">4.1.10</a>

# SolSmart Designation

- ▶ Pursuing GOLD Designation
- ▶ Identifies Cedar Hill as a leader in environmental sustainability
- ▶ Leverage SolSmart requirements and compare with other designated Cities to improve policies
- ▶ Incorporate into Sustainability Plan



# City of Kennedale

## Rachel Roberts

- ☀️ Small first-tier suburb of Fort Worth
- ☀️ Small in land area and population
- ☀️ Permits & Planning Department:  
*Just one inspector/plan reviewer*

☀️ [www.cityofkennedale.com/297/Permits](http://www.cityofkennedale.com/297/Permits)



# Why is participating important to us?

- ▶ Easy access to solar
- ▶ Best practices and safety
- ▶ Staying informed
- ▶ Kennedale is pursuing **SILVER** designation



# What makes us SolSmart-happy?



☀️ Expert review of existing regulations

☀️ Ensuring simplicity



☀️ Spreading the word!



# Greatest accomplishment so far?

Two achievements  
we're most proud of:

- ☀️ Permitting by right
- ☀️ Simple and fast



# Tips for other cities

- ☀️ Coordinate with fire department (and other departments who work with and/or around solar)
- ☀️ Know your community's aesthetic concerns and have a plan to address them



# NCTCOG Main Roles

- ▶ Assist with application materials and submission
- ▶ Evaluate existing solar policies and processes
- ▶ Host trainings to help cities meet SolSmart criteria



# SolSmart

[View](#)[Edit](#)[Outline](#)

Is Your Community SolSmart? Earn recognition for your sola...



Dennis Murphey  
Chief Environmental Officer  
Kansas City, Missouri



To learn more about the SolSmart program, designated cities, and resources available for cities interested in pursuing a SolSmart designation, explore the following pages.



[About SolSmart](#)



[Designated Cities](#)



[Permitting](#)

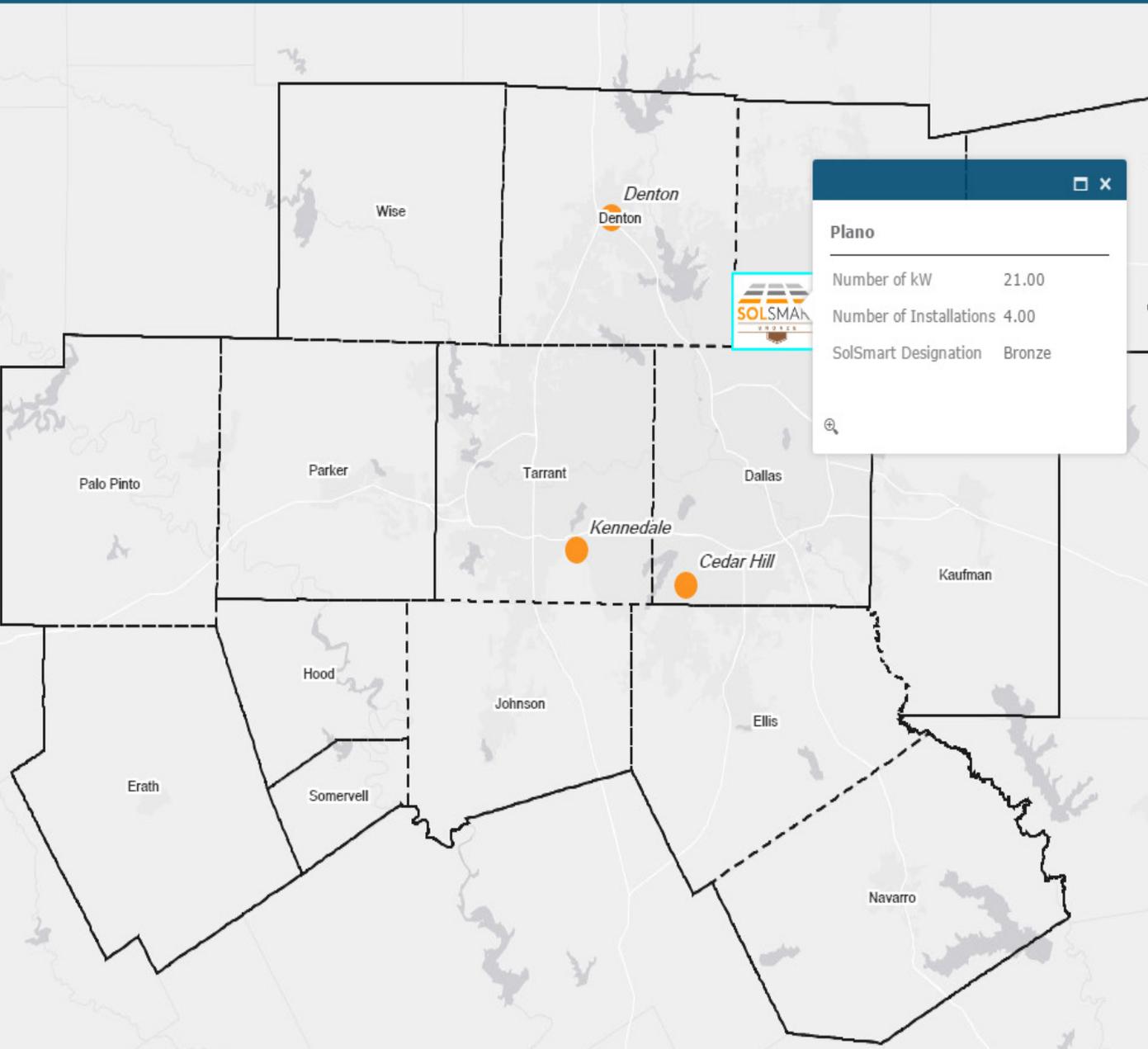


[Planning, Zoning and Development](#)

**SolSmart is a national community designation program**, funded by the U.S. Department of Energy, designed to recognize communities that take steps to make it easier for businesses and residents to go solar. Communities committed to pursuing SolSmart designation will be eligible for no-cost technical assistance from a team of national solar and local government experts.

Participating cities can earn SolSmart designation—at the bronze, silver, or gold level—by completing criteria that fall into eight categories: 1) Permitting; 2) Planning, Zoning, and Development; 3) Inspection; 4) Construction Codes; 5) Solar Rights; 6) Utility Engagement; 7) Community Engagement; and 8) Market Development and Finance. For more information on SolSmart, view the [SolSmart Program Guide](#). The resources to the right hand side include regional guidance and best practices for each category. For additional examples and best practices of how cities across the country are





**i** Details

Close, Up, Down icons

Click each city to view the number of kilowatts (kW) installed as well as the number of installations (INSTALLS).

Visit the [GoSolar Texas SolSmart page](#) for more information!



**Plano**

Number of kW	21.00
Number of Installations	4.00
SolSmart Designation	Bronze

Search icon

# Permitting

[View](#)[Edit](#)[Outline](#)

Permitting is one of the foundational categories for the SolSmart designation program. To achieve a **Bronze** designation, a city must complete **P-1** and **earn at least 20 points** in this category. To achieve a **Gold** designation, a city must also complete **P-2**. Below is list of regional guidance and best practice documents. When regional examples are not available, national examples are available through [SolSmart resources](#).

[P-1](#)[P-5](#)[P-8](#)[P-11](#)[P-2](#)[P-6](#)[P-9](#)[P-12](#)[P-3](#)[P-7](#)[P-10](#)[P-13](#)[P-4](#)

## SolSmart

[About SolSmart](#)[Designated Cities](#)[Permitting](#)[Planning, Zoning and Development](#)[Inspection](#)[Construction Codes](#)[Solar Rights](#)[Utility Engagement](#)[Community Engagement](#)[Market Development and Finance](#)

## P-1

Create and make available an online checklist detailing the steps of your community's solar PV permitting process (**required for Bronze**).

### Resources & Best Practices

[Create a Permitting Checklist \(BMP Resources\)](#)

### Samples

[City of Plano Solar PV Checklist](#)

## P-1

Create and make available an online checklist detailing the steps of your community's solar PV permitting process (**required for Bronze**).

### Resources & Best Practices

Create a Permitting Checklist (BMP Resources)

### Samples

City of Plano Solar PV Checklist

NCTCOG Solar PV System Permit Application Checklist

## P-2

Provide a streamlined permitting pathway for small solar PV systems with turn-around time of no more than 3 days (**20 points, required for Gold**).

### Resources & Best Practices

Develop Criteria for Expedited Processes (BMP Resources)

### Samples

NCTCOG Solar PV Expedited Permit Checklist

## P-3

Distinguish between systems qualifying for streamlined or standard review (**5 points**).

### Resources & Best Practices

Develop Criteria for Expedited Processes (BMP Resource)

## P-4

Require no more than one application form for a residential rooftop PV project (**5 points**).

### Samples

City of Plano Miscellaneous Simple Permit Application

City of Denton Building Inspections Universal Application

# Solar Basics

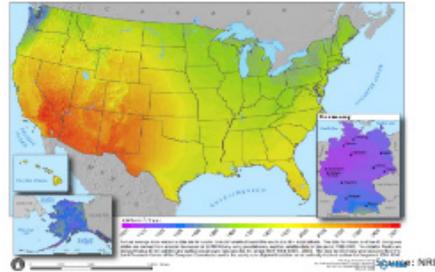
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The following resources are an introduction to the basics of solar energy, the potential for solar in Texas, the current state of solar energy in Texas, and important solar terminology.



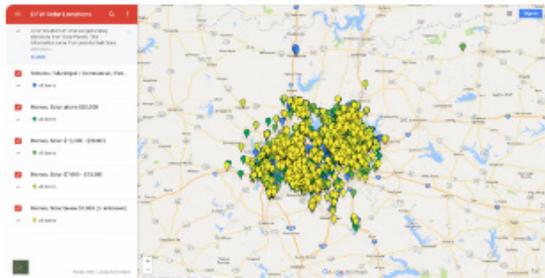
## Solar 101

If you are interested in going solar, these resources will help educate you on the basics of solar energy, solar as an energy source, solar equipment, and key solar terminology.



## The Case for Solar in Texas

Due to abundance of solar radiation and land availability, Texas is poised to lead the country in solar. Already, Texas is well on its way.



## The State of Solar in Texas

These resources give an overview of the current state of solar energy in Texas.

# Solar Basics

- [Solar 101](#)
- [The Case for Solar in Texas](#)
- [The State of Solar in Texas](#)
- [Solar Glossary](#)

### Solar Glossary

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

**A**

**add-on system**  
An add-on system combines solar modules, inverters and other related hardware with an existing grid-tied system. One or more photovoltaic modules work with either grid-tied or stand-alone inverters. Grid-tied add-on systems are designed to be installed on the same grid as the existing system. Stand-alone add-on systems are not required.

**AC Inverter**  
An inverter that converts direct current (DC) from photovoltaic modules into alternating current (AC) for use by a building's electrical system. For the inverter output to be usable, it must be converted to the frequency of the grid (60 Hz).

**airmass**  
The number of solar radiation units that pass through a unit area of the surface of the earth.

**airmass 1.5**  
Global solar radiation received at a 37-degree angle from the normal.

**amorphous silicon (a-Si)**  
A type of photovoltaic material that is commonly used in thin-film solar panels. It is typically used in combination with other photovoltaic materials to create a heterojunction.

**array**  
The specific arrangement of solar panels in a system.

**array controller**  
A device that controls the flow of current from a solar panel to a battery.

**array fuse**  
A fuse that protects a solar panel from over-current. It is typically used in a solar panel's output circuit.

**array voltage**  
The voltage produced by a photovoltaic array when exposed to sunlight and connected to a load.

**array wiring**  
The wiring that connects a solar panel to a battery or inverter.

**array**  
The large number of solar cells connected in a series to produce a usable amount of power.

## Solar Glossary

View Edit Outline

The success of solar is largely dependent on local government support. Decisions about planning, permitting, zoning, codes, etc. are made at the local level and can decide how solar friendly, or unfriendly, a municipality is. This portal provides resources and examples for Texas local government staff.



## Best Management Practices

These resources are meant to assist cities with planning and soft cost reduction so that homeowners, businesses, schools, and other entities interested in solar energy have an easier path to getting solar up and running.



## SolSmart Designation

SolSmart is a national community designation program, funded by the U.S. Department of Energy, designed to recognize communities that take steps to make it easier for businesses and residents to go solar. Communities committed to pursuing SolSmart designation will be eligible for no-cost technical assistance from a team of national solar and local government experts.



## Incentivizing and Financing Solar

One of the most critical steps a local government can take in supporting solar is to create local solar incentives and to demonstrate the viability of solar power themselves through installations on municipal properties.



## Cost-Benefit Analysis

These documents, developed by Frontier Associates, present information and analysis about five model solar applications likely to be of interest to local government officials. Frontier produced a detailed report, 2-page fact sheets, and Microsoft Excel-based financial pro forma templates that can be customized and applied to specific projects under consideration.



## Community Solar

Community solar is one way to improve citizens' accessibility to solar energy. These resources provide an overview of community solar, its benefits, and current community solar programs in Texas.



## Local Government Solar Initiatives

Want to find out how other jurisdictions are making solar work for them? These are the projects, programs, and policies from Texas solar leaders.



## Inspectors, Firefighters, & Code Officials

These resources are meant to educate and assist inspectors, firefighters, and code officials to the relevant issues surrounding solar PV systems.



## Frequently Asked Questions



## Additional State and National Resources

# Link to Our Page!

<http://gosolartexas.org/solsmart>

# Solar Rights-1 (SR-1)

- ▶ Conduct review of state policies related to protecting rights of property owners to install solar and solar system owners' right to sunlight on their property. Make this information available to residents.

# SR-1

- ▶ **HB-362:** Amended Texas Property Code Section 202.010 to include the following
  - ▶ HOAs and POAs cannot restrict solar devices outright
  - ▶ Homeowners must still follow normal HOA procedures for seeking improvements.
  - ▶ HOAs can prohibit solar panels under certain conditions
  - ▶ HOAs can designate where solar panels may be placed on the roof unless homeowner can prove an alternate location would increase production by more than 10% using [PVWatts Calculator](#)

Visit [gosolartexas.org/solar-rights-regulations](https://gosolartexas.org/solar-rights-regulations) for more information!

# SR-1

- ▶ **SB-1626:** Developers can prohibit solar panel installation on homes in residential subdivisions during the development period *only if the development consists of 50 or fewer units.*

# Market Development and Finance-1 (MDF-1)

- ▶ Provide resources on active solar installers and/or local incentives for solar PV and/or thermal.



Visit [gosolartexas.org/market-development-and-finance#MDF1](https://gosolartexas.org/market-development-and-finance#MDF1) for more information!

# Active Solar Installers

- ▶ [North American Board of Certified Energy Practitioners \(NABCEP\) Certified Locator](#)
  - ▶ “Gold standard” certification for solar professionals
- ▶ [Oncor’s Take a Load Off, Texas Provider Search](#)
  - ▶ Companies who have completed paperwork and have been vetted by Oncor to take advantage of their solar incentives

Visit [gosolartexas.org/4-choosing-a-retail-electric-provider-and-certified-installer](http://gosolartexas.org/4-choosing-a-retail-electric-provider-and-certified-installer) for more information!

# State Incentives

## ▶ Property Tax Exemption

- ▶ Allows a property tax exemption for solar installations
- ▶ Solar will likely increase property value for prospective buyers, but property taxes will not increase

## ▶ Solar Energy Devices Franchise Tax Exemption

- ▶ Businesses can deduct the cost of a solar energy device from franchise taxes

Visit [gosolartexas.org/available-incentives](http://gosolartexas.org/available-incentives) for more information!

# MDF-3

- ▶ Provide information to consumers about different solar PV financing options, including commercial options, such as Property Assessed Clean Energy (PACE) financing.



Visit [gosolartexas.org/market-development-and-finance#MDF3](https://gosolartexas.org/market-development-and-finance#MDF3) for more information!

# Financing Options

- ▶ Purchase, lease, or power purchase agreement (PPA)
- ▶ PACE Financing
- ▶ Solarize - Group Purchasing
- ▶ Helpful Webinars:
  - ▶ [Financing Solar in Texas](#) (NCTCOG, SECO, USDA, & Plano Solar Advocates)
  - ▶ [Financing Solar Energy Systems](#) (NCTCOG)
  - ▶ [PACE Financing](#) (Texas PACE Authority & City of Houston)

Visit [gosolartexas.org/payment-options](http://gosolartexas.org/payment-options) for more information!

# Community Engagement-5a (CE-5a)

- ▶ Host a solar workshop open to the general public and/or local government staff explaining solar PV opportunities and policies

Visit <http://gosolartexas.org/community-groups> for more information!

# CE-5b

- ▶ Create and distribute educational materials at relevant community events and through local government channels

*Contact NCTCOG staff for available outreach items*

# Upcoming Trainings

- ▶ Cross Training for Permitting and Inspection Staff including planning and zoning best practices
  - ▶ Will Satisfy the PZD-9 and I1 Criteria
- ▶ Solar PV for Fire and Safety Staff
  - ▶ Will Satisfy the P-9 Criteria

# Contacts & Thank You!

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