SolSmart Training

Permitting, Inspection, and zoning

October 11, 2017

Sponsored by:

North Central Texas Council of Governments

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www.GoSolarTexas.org/solsmart

North Central Texas Local Context

NCTCOG Solar Efforts

Solar Ready II

GO SOLAR

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2013 - 2014

- Reduce Soft Costs
- Streamline Processes
- Develop Best Management Practices

2015 - 2016

- Website Clearinghouse
- Resources for Niche Markets
- Cost Benefit Analysis
- Case Studies
- Videos
- And more!

2017

- Designate Regional Communities
- Host Trainings & Webinar
- Provide Technical and Policy Assistance

Solar Abundance

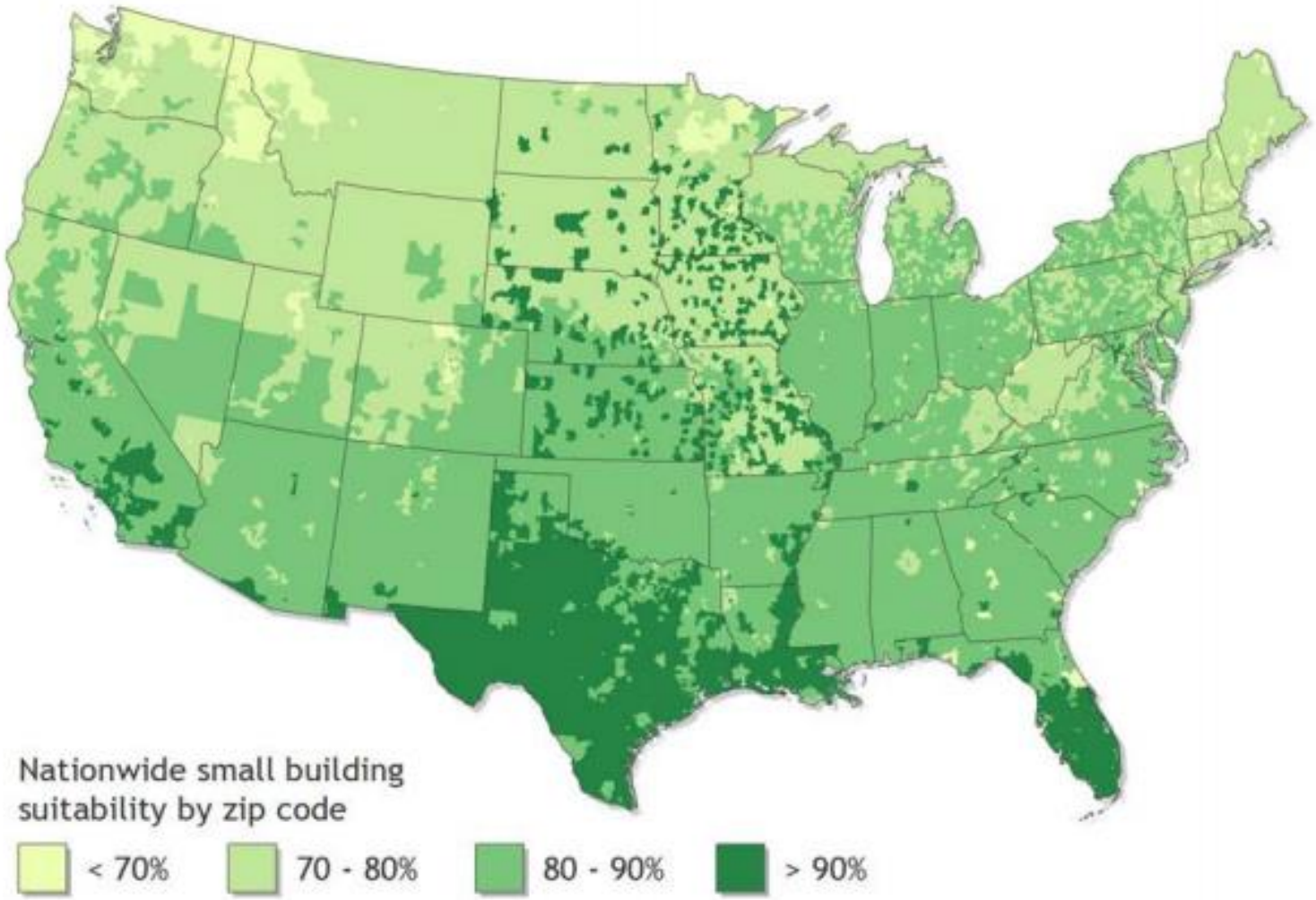
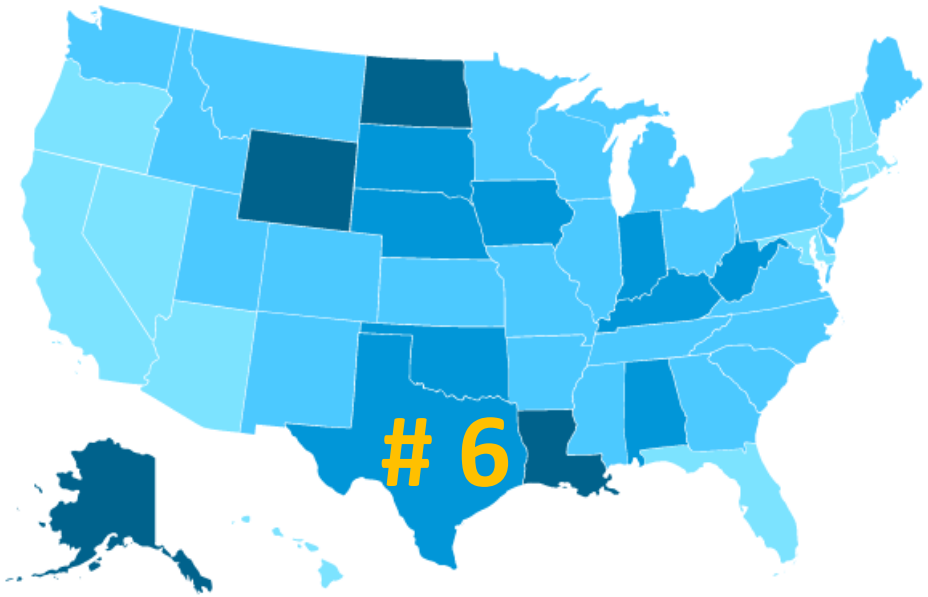


Figure ES-1. Percentage of small buildings suitable for PV in each ZIP code

Source: The National Renewable Energy Laboratory

Growing Energy Demand



New Peak Demand Records are being set each year:

2015: 69,877 MW
2016: 71,093 MW

Meanwhile population, and corresponding energy needs, are growing across North Central Texas

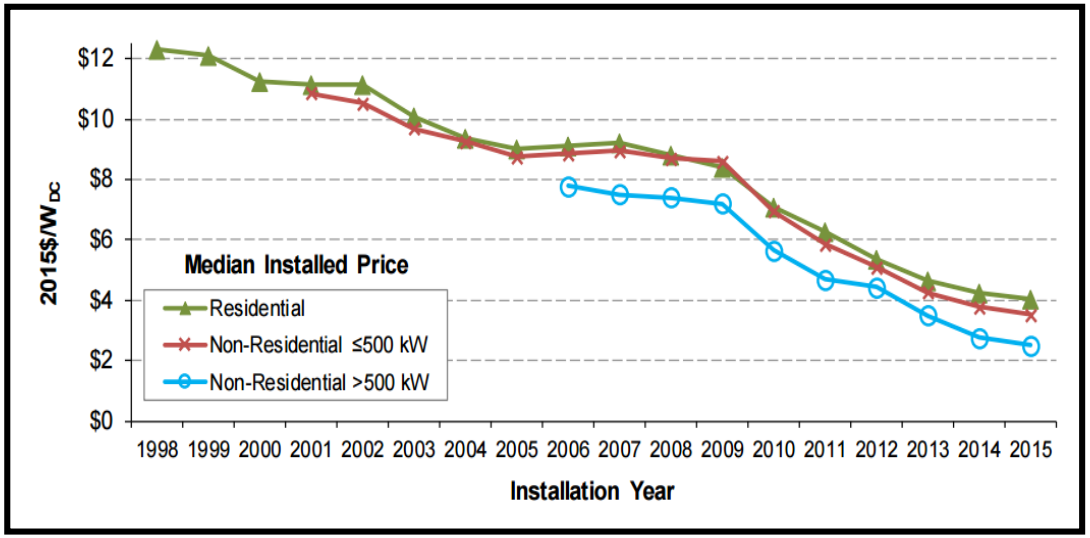
Population Trends

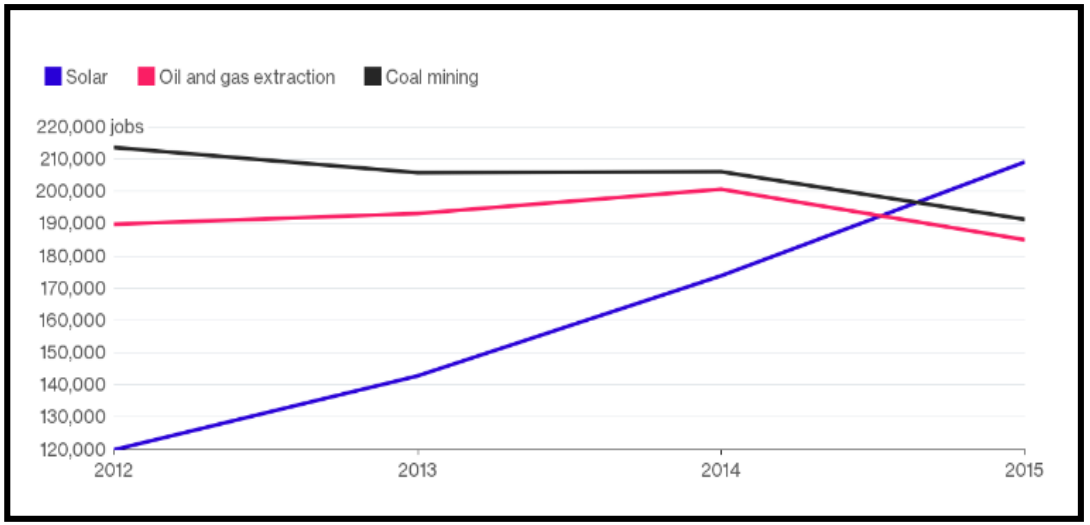
- One of the fastest growing states
- NCTCOG population forecasted to grow by 47% between 2017 and 2040, to over 10.5 million
- Per capita Income expected to increase
- Thousands of housing units being developed
- Business relocation to North Central Texas

Sources: Energy Information Agency and the Electricity Reliability Council of Texas

Economics & Financial Stability

- Federal Investment Tax Credit
- Declining Solar Costs
- Solar Job Growth





Sources: International Renewable Energy Agency and the Lawrence Berkeley National Laboratory

Air Quality Benefits from Solar

Annual Regional Emission Displacements

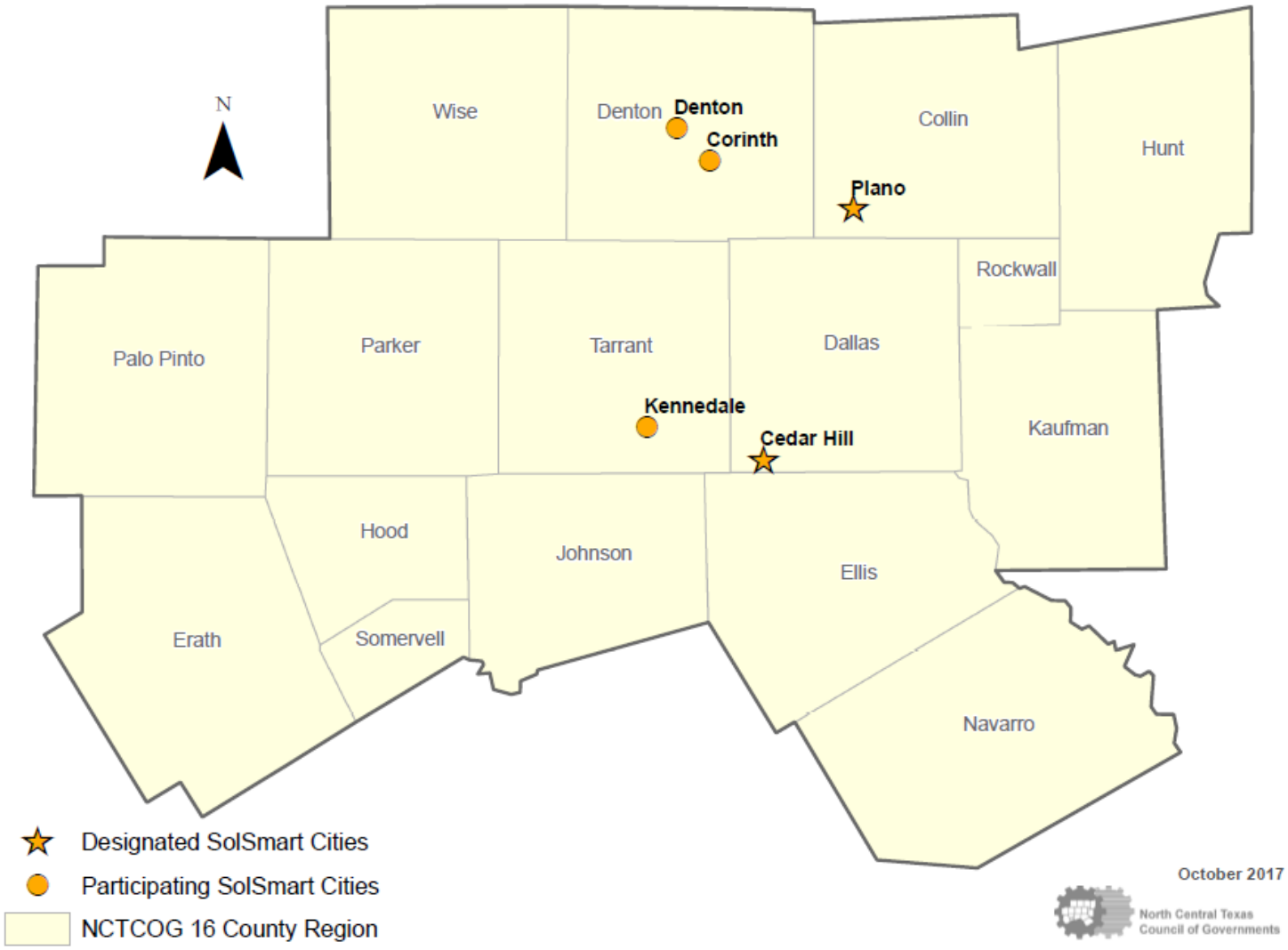
22.5 MW

U.S. EPA AVERT Tool Output

	Original	Post-EERE	Impacts
Generation (MWh)	266,402,800	266,370,600	32,200
Total Emissions			
SO_2 (lbs)	608,041,700	608,001,300	40,400
NO_x (lbs)	225,566,700	225,543,200	23,500
CO_2 (tons)	201,045,000	201,024,900	20,100

Source: U.S. EPA Avoided Emissions and Generation Tool (AVERT) Tool. Based on 22.5 MW solar input– DFW install as of 2015

Regional Leadership



Go Solar North Texas
NCTCOG Resources

SolSmart Trainings, October 11-12, 2017

North Central Texas
Council of Governments

Kristina Ronneberg & Derica Peters
North Central Texas
Council of Governments

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SolSmart Resources

GO SOLAR | About | Audience Type... | Resources | FAQ | Case Studies | Events | Training | My account | Log out

Search

SolSmart

View | Edit | Outline

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.

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

SOLSMART
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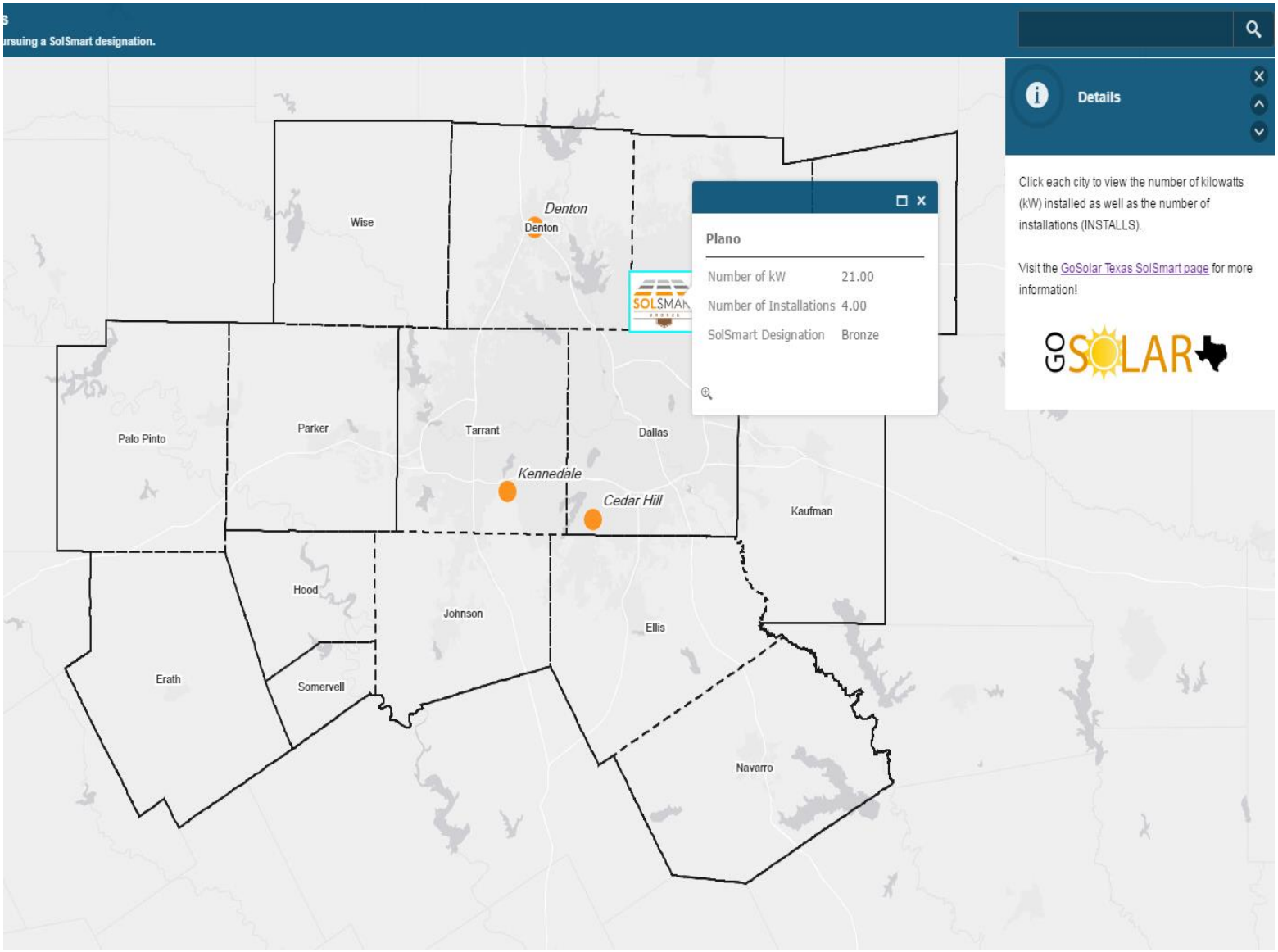
About SolSmart

Designated Cities

Permitting

Planning, Zoning and Development

SolSmart Resources



SolSmart Resources

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			

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

SolSmart

- About SolSmart
- Designated Cities
- Permitting
- Planning, Zoning and Development
- Inspection
- Construction Codes
- Solar Rights
- Utility Engagement
- Community Engagement
- Market Development and Finance

SolSmart Resources

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

SolSmart Resources

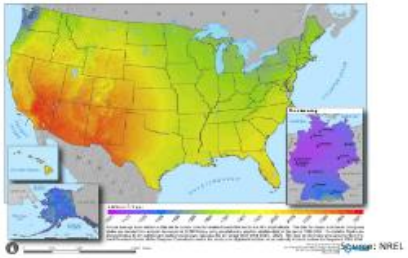
Solar Basics

View | Edit | Outline

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 radiance 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 Glossary

Solar 101 › Outline

Solar Basics

- Solar 101
- The Case for Solar in Texas
- The State of Solar in Texas
- Solar Glossary

SolSmart Resources

Link to our website:

www.gosolartexas.org

Solar Rights—1

Market Development and Finance-- 1

Market Development and Finance-- 3

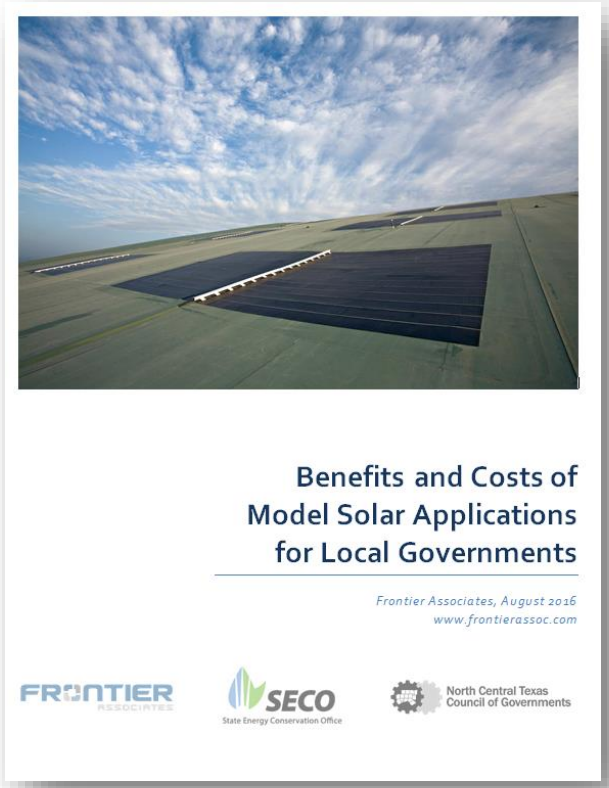
Community Engagement– 5&b

Resources for Local Governments

Cost Benefit Analysis

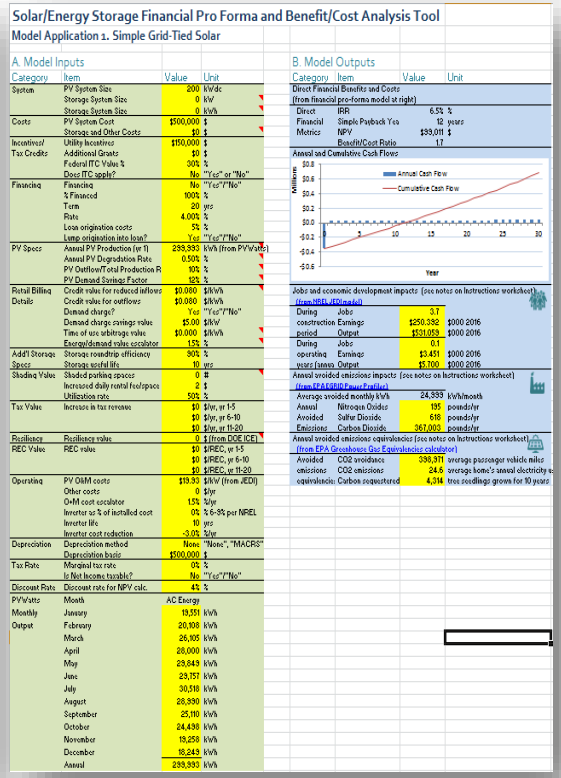
Project Deliverables

Report



Fact Sheets

Excel Tool



Cost Benefit Analysis

Model Applications

Simple Grid-Tied Solar

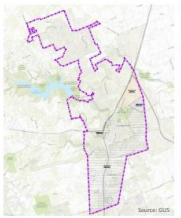
Solar with Ancillary Benefits

Solar with Storage

Case Studies

Case Study:
Municipally Owned Utilities in Texas

Georgetown Ut



Georgetown Utility Services
Electric Service Area Boundary

Summary

Georgetown Utility Syst
overall population of 24,
TX. In 2012 the utility en
lowed the city to pursue
was to secure the most
risk and reward to their
sources based on the bu
paying customers with a

In 2014, only 4.2% of the
they underwent evaluat
the choice to go 100% re
reduce pollution and sav
goal at competitive pric
renewable energy, supp
tion. The long-term, flat
newable energy the righ
tems reaches 100% rene
in the country and the fi

Quick Facts

Georgetown Utility Services has contracted with SunEdison to build and maintain a **150 MW** solar array near Fort Stockton, in West Texas. The array will be operational by 2017.

Georgetown Utility Systems will be producing **294 MW** of energy in total once they go **100%** renewable. Currently, the utility has a peak load of **145 MW**.

Georgetown Utility Services is expecting to increase from **10%** renewable energy to **100%** by the end of 2017.

A Growing City

In 2015, the City of Geo
Edison to purchase 150
ing 50% of the energy n
vide electricity to GUS t
Texas where a panel ca
Texas because of the st
use the high capacity tr
(CREZ) lines, installed b

Case Study:
Municipally Owned Utilities in Texas

CPS Er

Quick Facts

CPS Energy's service area ranks **#1** in Texas and **#7** nationally for solar energy generation.

CPS Energy has **9** solar farms, which together are generating over **230 MW** of solar power. That is enough energy to power over **37,000** homes.

The largest of their solar installations will be a **1,200-acre** solar farm expected to generate **110.2 MW**.

CPS Energy offers **3** different ways to engage their customers with solar energy – community solar, private ownership, and solar hosting.

CPS Energy successfully links **clean energy investment** to local job creation by relying on local companies for solar equipment and installation.

CPS Energy has already surpassed its goal of generating **1500 MW** of renewables by **2020**.

Summary

CPS Energy is the natio
765,000 electric custon
Antonio, TX. CPS Ener
and distribution. With
make solar energy avai
menting programs that
shading/angle, roof ow
New Energy Economy
lief in energy efficiency
technologies to help cu
more wisely and lower
new jobs and educatio
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the environment. With
Energy has committed
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energy by 2020. CPS E
1,000 new jobs commit
San Antonio by their N
a positive financial imp
porting the economic
community is very imp
as they continue to gro
renewable energy to th

Case Study:
Electric Cooperatives in Texas

CoServ El

Quick Facts

There are **275 subscribers** to the CoServ Solar Station program.

The CoServ Solar Station is located on **16 acres** of land.

The Solar Station is a **2 MW** array.

There are **8,448** fixed-tilt **315 watt** solar panels in the array.

Each panel is expected to produce **473.4 kW-hours** per year for a total of **3.9 million kWh**.

CoServ Solar Station is a Rate-Based Structure, selling blocks of energy produced to their customers.

A member's minimum usage over the past **12 months** is the maximum energy block that can be purchased.

Summary

CoServ Electric (CoServ), b
cooperative (co-op) in the
Collin, Denton, Cooke, Wis
in diversifying their energy
receive options and a value
diversification applied in th
gram was guided by partici
ation's (NRECA) Solar Utili

CoServ and Community

Community solar is a conce
the NRECA SUNDA project
large scale solar project to
rooftops, such as renters or
When NRECA was granted
took advantage of the oppo
tives participating in the SU
during the project developr
ranged from resources for c
solar project to help lower the cost of utility-scale power an
cooperative members.

The most challenging step for CoServ was finding land suita
prices and restrictive zoning and permitting regulations, lea
worked with a land broker who was able to help the co-op s
for the solar array. CoServ choose to build a 2 megawatt (M
co-op determined that it would be more time and cost effe

Case Study:
Independent School Districts in Texas

Presidio Independent School District

Quick Facts

Location
Presidio, TX

Facilities Participating
Presidio High School
Presidio Elementary
District Offices
District Technology Center

PV Capacity
150 kWh

Average Annual Production
307,440 kWh

PV Location
Ground mount
Rooftop

Project Installation
First modules — 2011
Fully installed— 2014

Cost
$500,000

PV Funding
Partial ISD budget and partial grants (40/60)

Summary

Presidio Independent School District (ISD) is a public school district in Presidio, TX. The ISD has 3 campuses that serve Presidio, Candelaria, Chinati, and Ruidosa, TX. Presidio ISD has become a leader in solar energy production in West Texas. The district saw the value in investing in renewable energy and is reaping the educational, environmental, and economic benefits. While undergoing budget cuts from the state, Presidio ISD turned to the abundance of West Texas sunshine as a way to enhance the district's value and provide a long term return on investment. Presidio ISD applied for several grants to retrofit district buildings with solar and in 2011 the first solar modules were installed. "Solar PV is our goal," says Dennis McEntire, the Superintendent for Presidio ISD. Presidio ISD aims to continue adding solar to help minimize infrastructure costs while maintaining a higher percentage of school dollars applied to direct student services.

Photos courtesy of Dennis McEntire, Superintendent, Presidio ISD

Funding

In 2010, Presidio ISD received a grant of $250,000 from the State Energy Conservation Office (SECO) to install 72 kW rooftop array at the elementary school. The grant required that the district match 20% of the project costs. Presidio ISD also received $500,000 from the U.S. Department of Energy National Environmental Policy Act (NEPA), secured by Ciro D. Rodriguez, the U.S. Congressman for the 23rd Congressional District, who is an active voice for solar power in the region.

Trainings and webinars

Putting Underutilized Land to Work for Solar

Jul 27, 2016

This webinar provides information to local governments, special districts, and businesses interested in going solar by siting PV arrays on brownfields, landfills, and other previously unusable lands.

View Training Materials

PACE Financing

Jul 12, 2016

Property Assessed Clean Energy (PACE) is a financing method available to businesses that allows them to finance 100% of a solar energy system.

View Training Materials

Community Solar in Texas

Jul 8, 2016

This webinar provides information to electric utility cooperatives and municipal owned utilities who may be interested in exploring opportunities for community solar programs.

View Training Materials

Solar for Local Governments

Jun 8, 2016

Local government officials will learn about the basics of solar energy, ways to ease the permitting process, and discover the economic benefits of solar energy.

View Training Materials

Solar PV for Fire and Code Officials Workshop

Jun 8, 2016

Fire Inspectors will learn about applicable fire codes and methods for implementing code requirements in residential and commercial photovoltaic (PV) systems.

View Training Materials

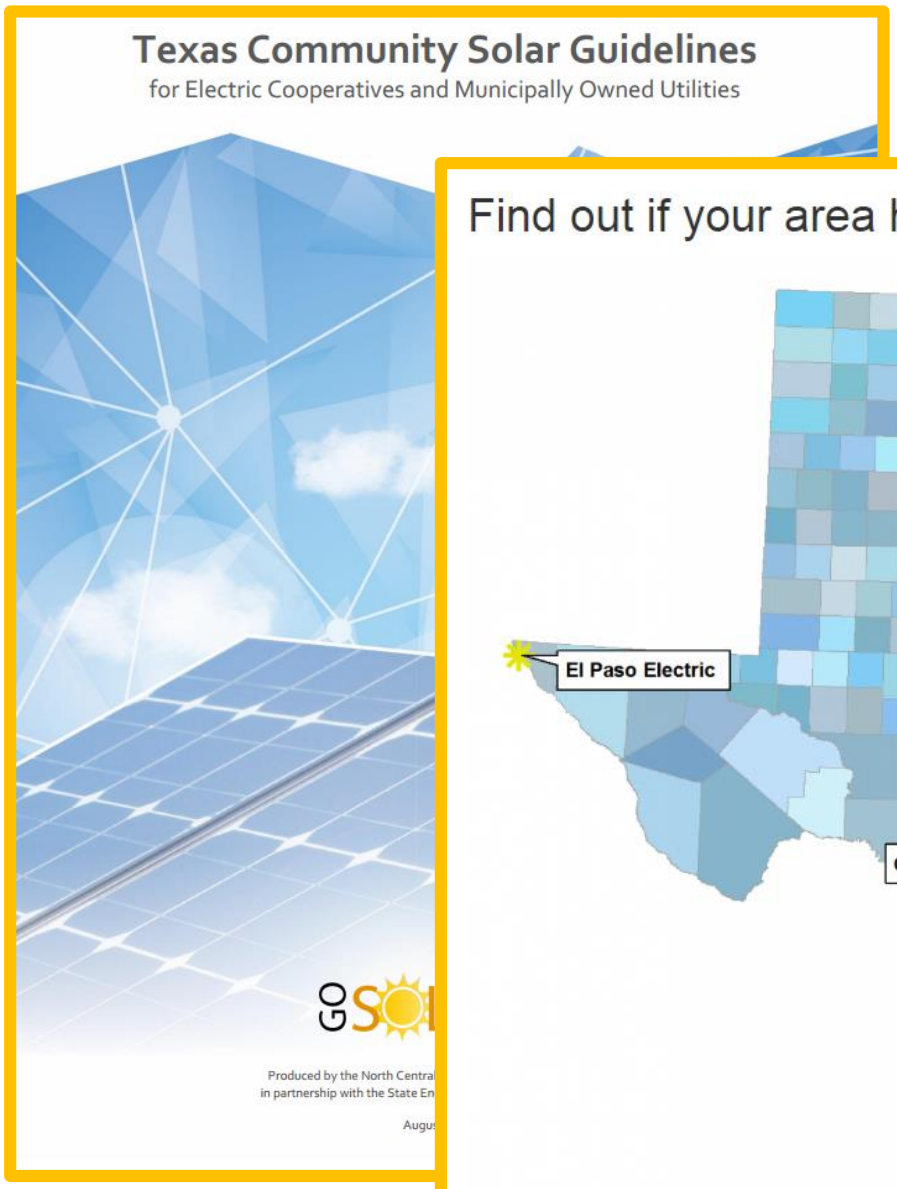
Financing Solar Energy Systems

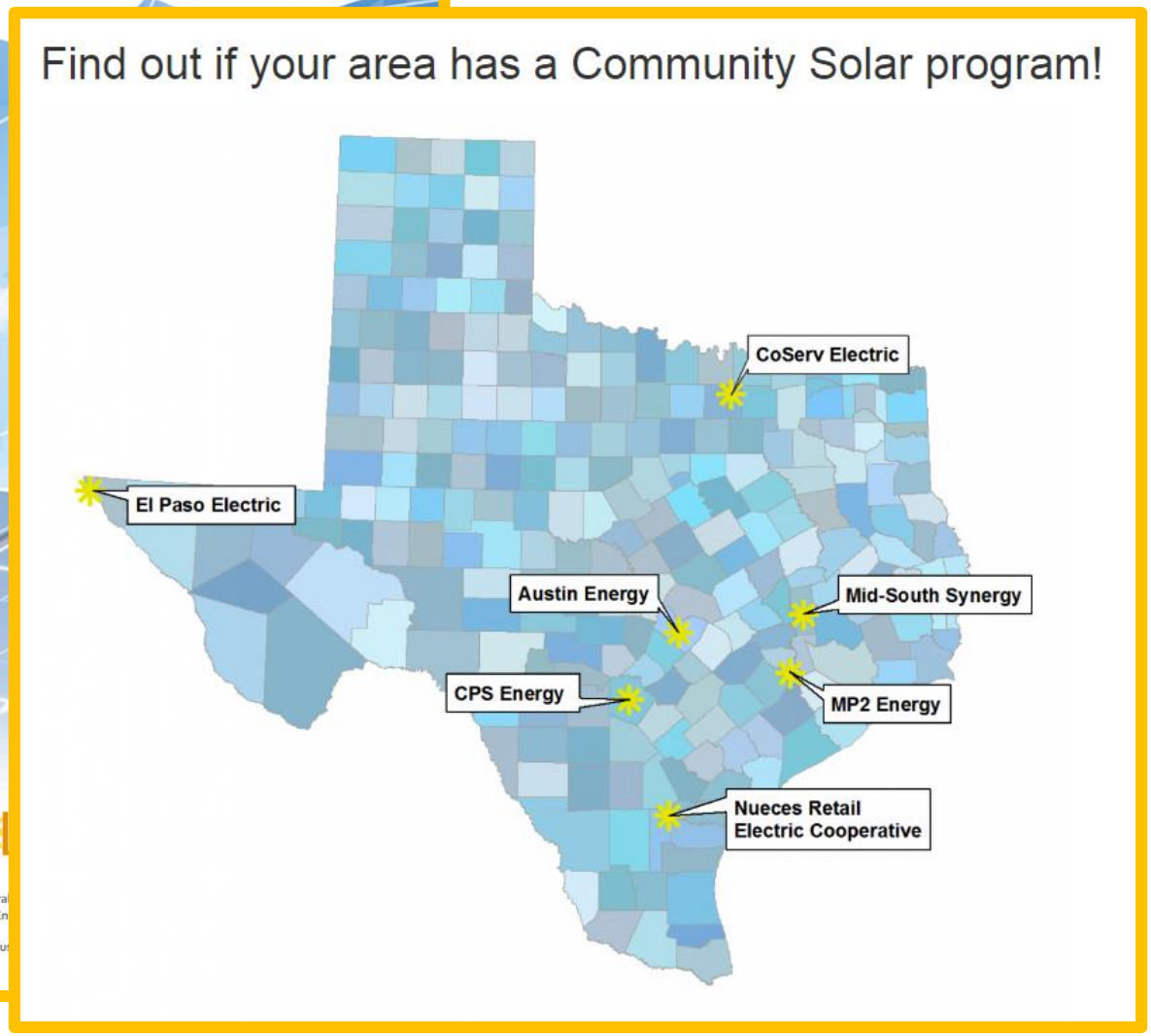
Jun 7, 2016

This class covers available rebates and tax credits for purchasing solar energy systems for commercial and multi-family property owners and lenders.

View Training Materials

Community Solar





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