

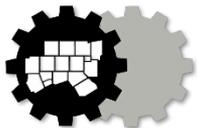


# Community Solar in Texas

July 8, 2016

11:30 am - 12:30 pm

Sponsored by:



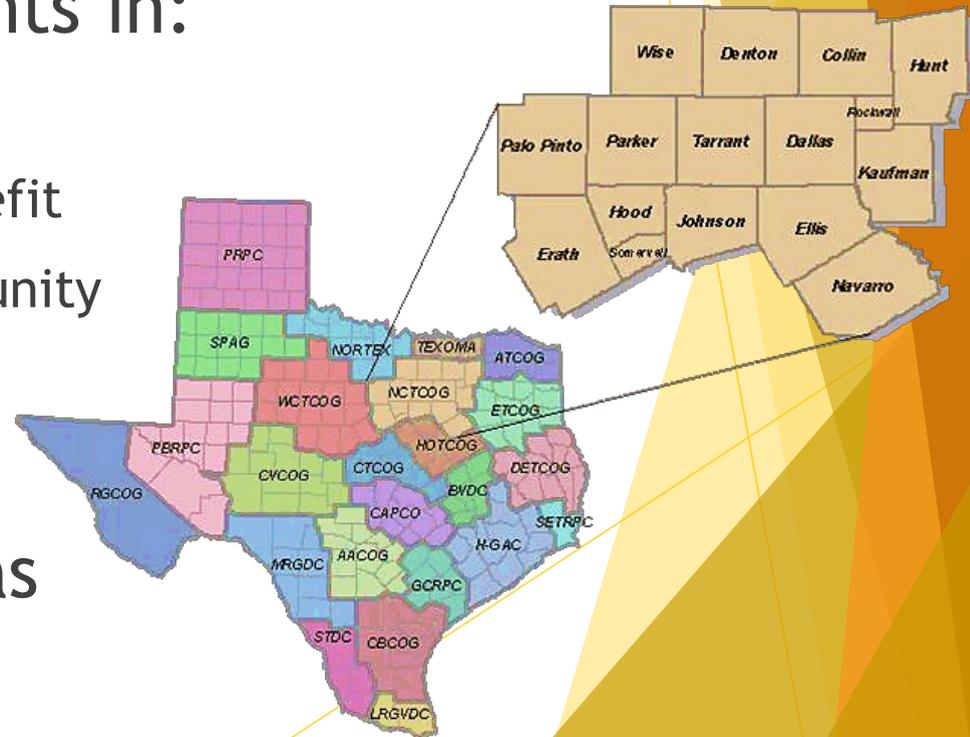
North Central Texas  
Council of Governments



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

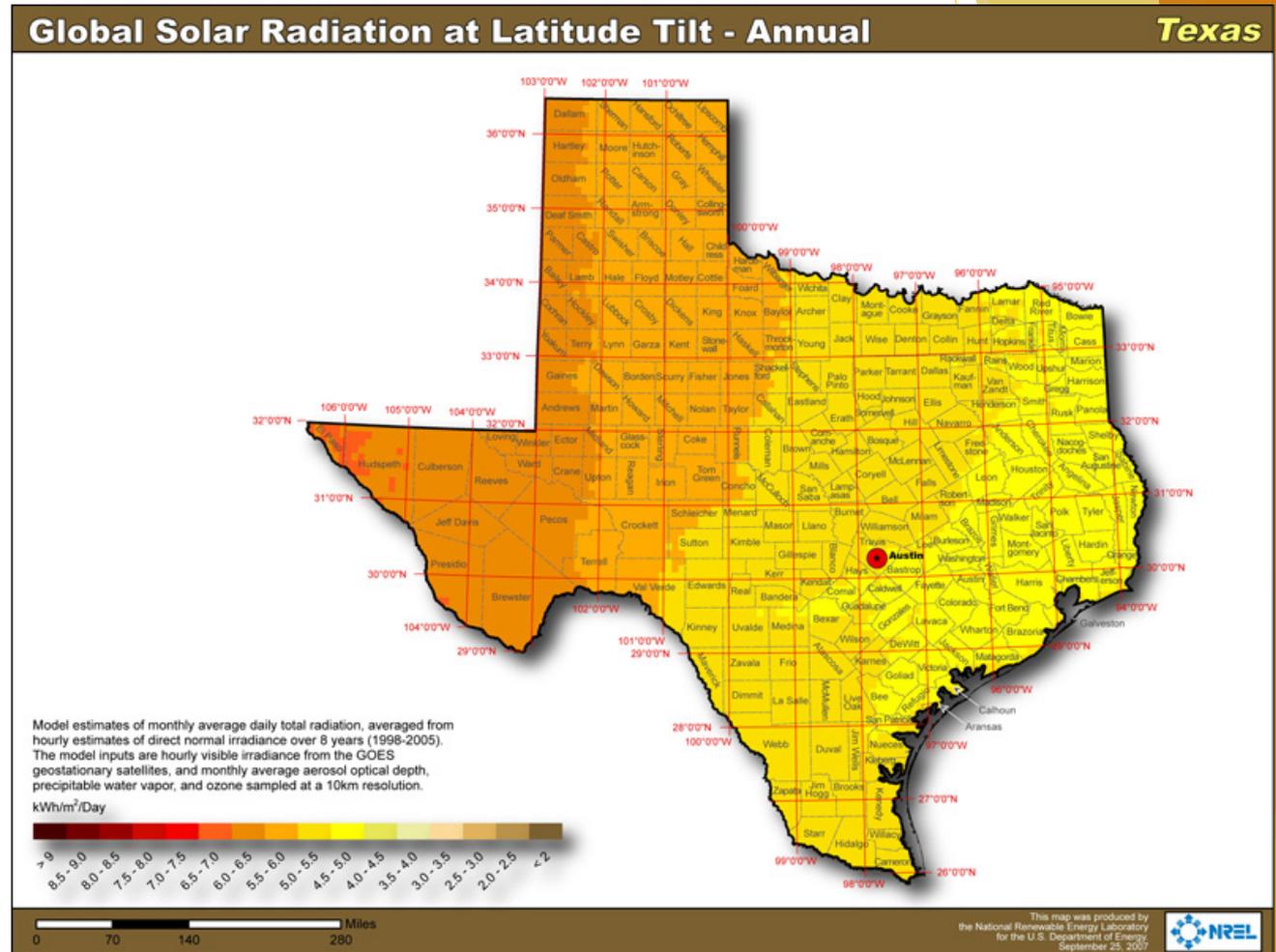
# What is NCTCOG?

- ▶ Voluntary association of local governments
- ▶ Established in 1966
- ▶ Assists local governments in:
  - ▶ Planning for common needs
  - ▶ Cooperating for mutual benefit
  - ▶ Recognizing regional opportunity
  - ▶ Resolving regional programs
  - ▶ Making joint decisions
- ▶ One of 24 COGs in Texas
- ▶ [www.nctcog.org](http://www.nctcog.org)



# Why is NCTCOG focused on Solar?

- ▶ Improve Air Quality
- ▶ Increase Local Energy Reliability
- ▶ Facilitate Local Government Efforts
- ▶ Provide Consistency Among Region
- ▶ Reduce Costs (for everyone)



# Statewide Solar Energy Initiative

- ▶ NCTCOG contractor to State Energy Conservation Office (SECO)
- ▶ Performing activities through August 2016

## Major Tasks

- ▶ Outreach to Niche Markets (Municipal Owned Utilities/Electric Coops, ISDs)
- ▶ Solar Energy System Training (Statewide)
- ▶ Statewide Solar 101 Information Distribution (Local Government and Public Audiences)
- ▶ Solar Energy Expedited Permit and Model Ordinance
- ▶ Solar Applications Cost-Benefit Analysis



## **Tom Feiler**

*Sr. VP of Business  
Development*

**Clean Energy  
Collective**

# Community Solar in Texas

07.08.16





YOUR POWER TO TOMORROW  
*Save*

RooflessSolar™  
Powered by Clean Energy Collective

## Genesis of the Community Solar Model

### Essential Criteria    Keys to Success

- Consumer value
- Scalable
- Portable
- Corporate structure
- Tax issues
- SEC regulations
- On-bill crediting
- Customer management

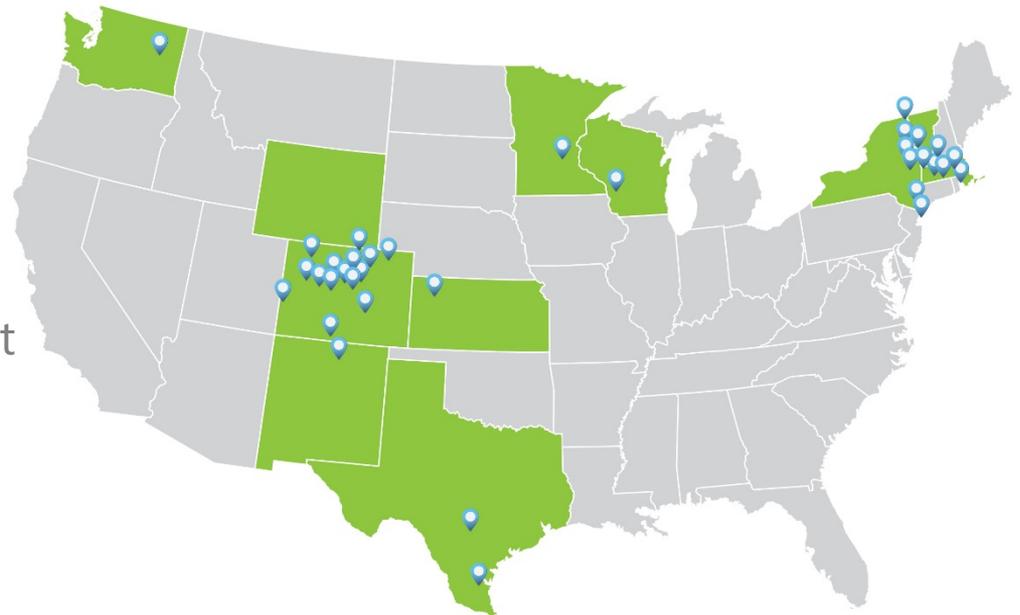


Mid-Valley Metro Community Solar Array, El Jebel Colorado  
nation's first community-owned solar garden

Nation's most experienced community solar solutions provider

### CEC Market Deployment

- 40 operating projects
- 12 states served
- 27 utility partners
- 90 projects under development
- 160 MW pipeline

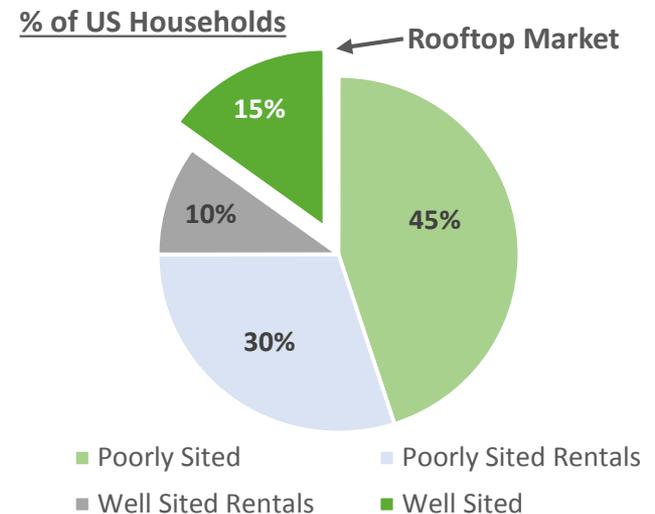


# What is Community Solar?

- Solution allowing all electricity users to participate in solar energy generation at market competitive rates
- Connected to the distribution grid and cost competitive, can be independent of state level regulations
- Massive addressable market – avoids constraints facing rooftop model while reaching near utility-scale economics

## Key advantages of community solar

- Capable of serving 100% of electricity users – residential, commercial and nonprofit
- Advantaged cost structure
- Superior operating capabilities
- Highly financeable
- Minimal default risk, reasonable resell / transfer ownership
- Largely supported by utilities, not dependent on new policies, avoids concerns about net metering



Community solar allows customers to enjoy the benefits of distributed energy in partnership with their local utility

## Solar Made Simple

- No rooftop assessment or permeation
- Optimal performance, ideal locations
- Commercial grade
- Utility scale costs
- Zero maintenance
- Hassle free



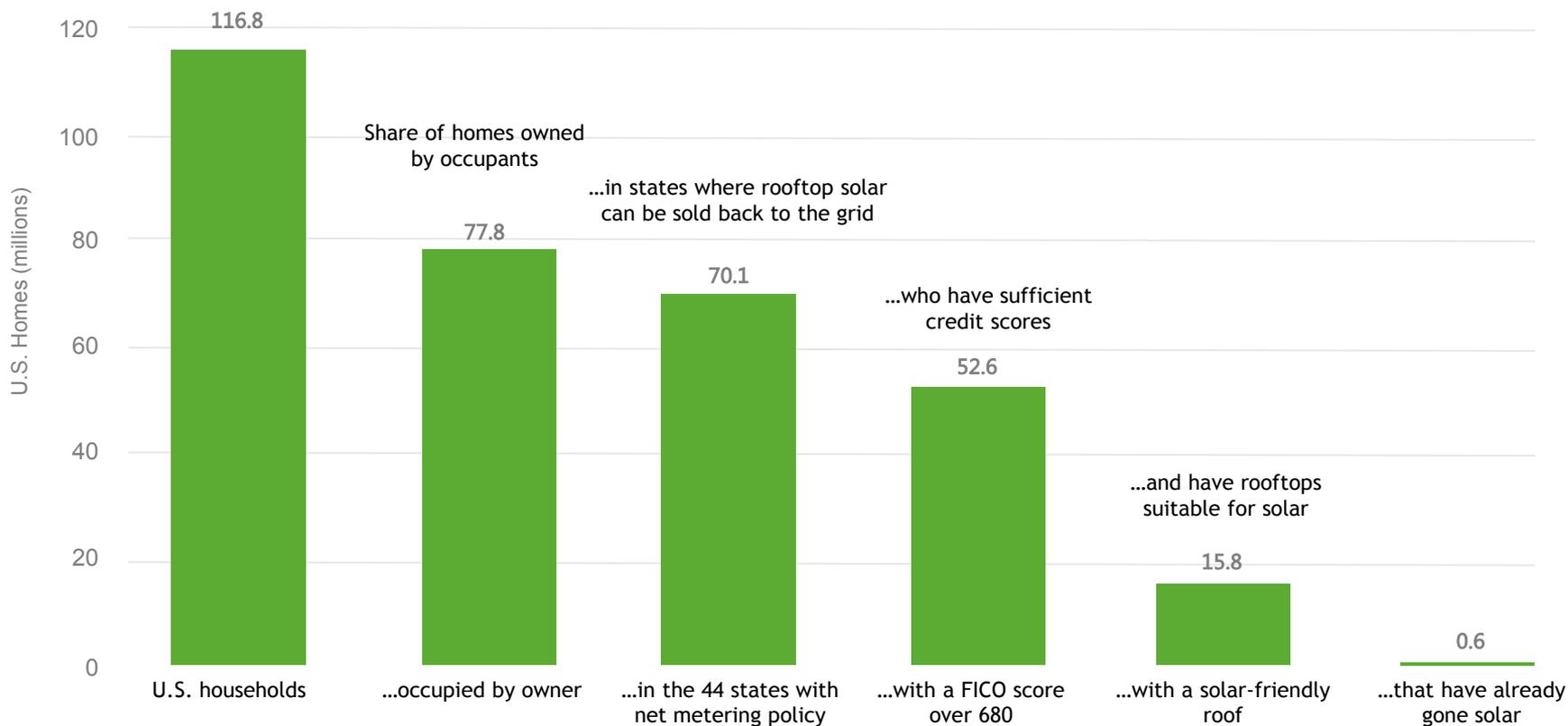
## Serve All Customers with Local Control

- Residential
- Low Income
- Commercial
- Nonprofit

*“Though community solar is still less than 1% of installed U.S. solar capacity, it is clearly a compelling and rapidly-growing model.”*

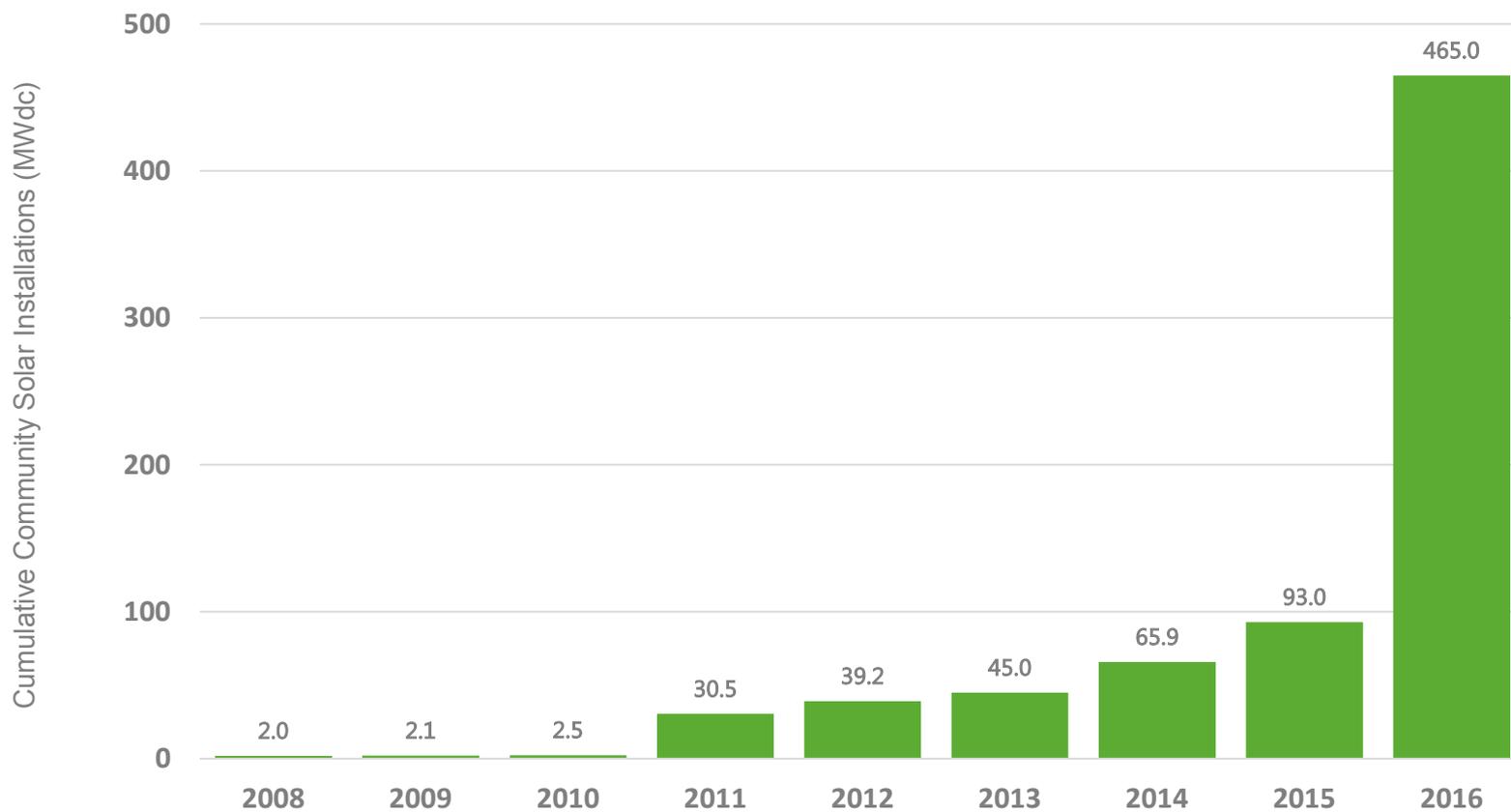
Dan Chwastyk, utility strategy manager, Solar Electric Power Association (SEPA)

## Rooftop solar has limited reach



source: GTM Research

## Community Solar has exponential reach



## The first community solar project was built in 2009. In 2015, the market reached an inflection point...

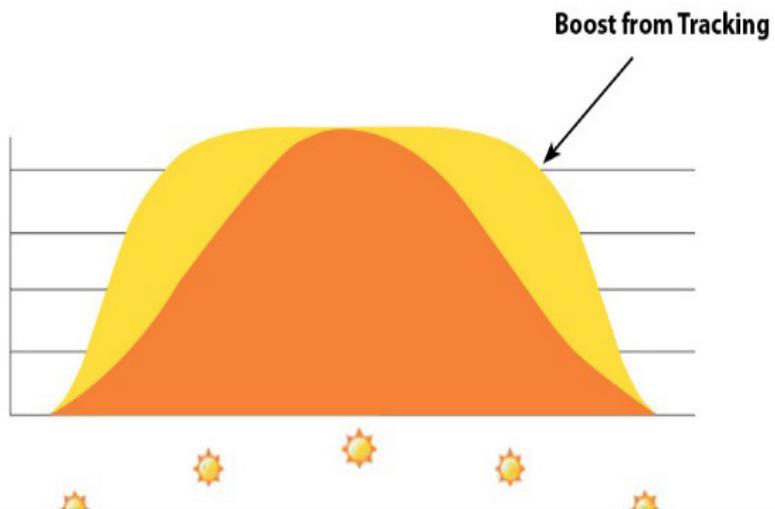
- Over **120 community solar projects online**, from just 2 in 2010
- **14 states** with community solar legislation; 10 more in progress
- **50+ utilities** announced community solar goals
- **Utilities are embracing community solar**
  - Rooftop net metering policies are being challenged
  - Value of solar may be a better utility fit
  - Utilities turning to community solar to serve market demand



In 2015 (pre-ITC extension), the DOE projected market potential of 11 GW by 2020;

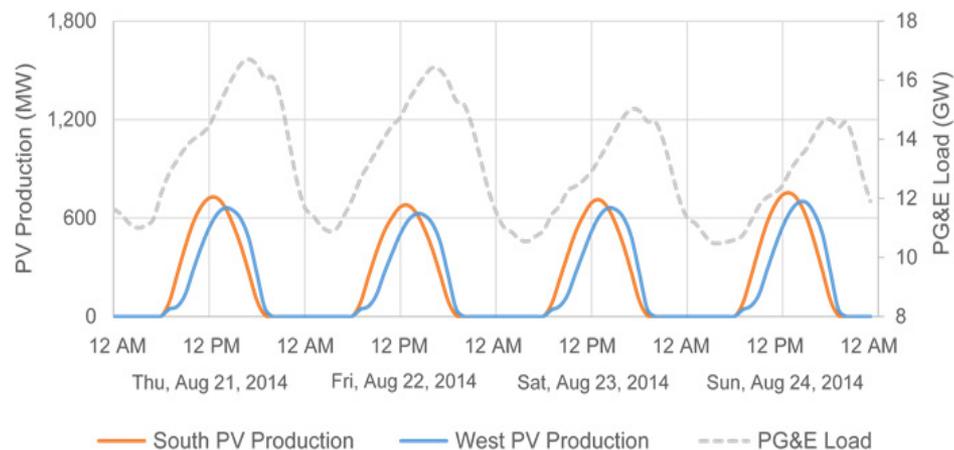
## Optimizing System Production

Tracker Compared to Fixed Mount



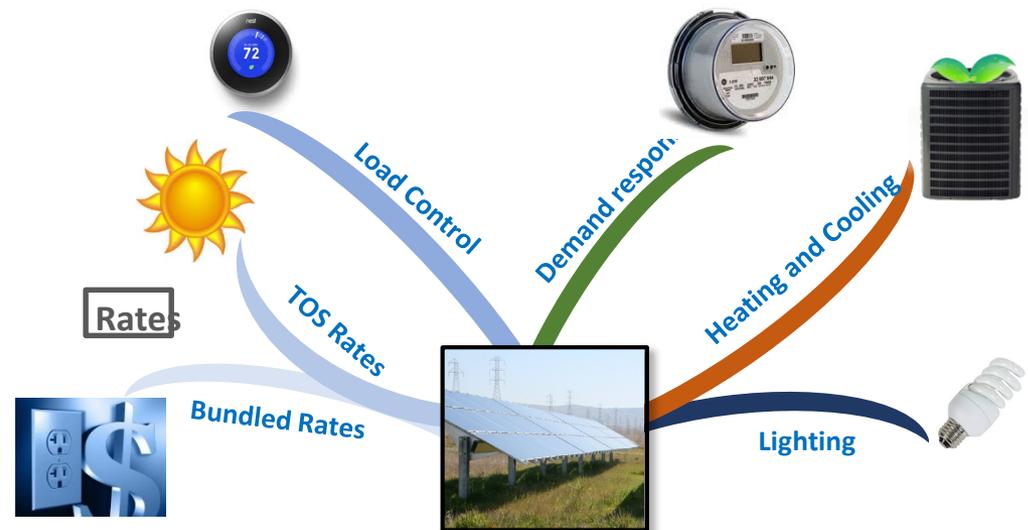
source: First Solar

Alignment of PV Production with PG&E Load



## Advantages for Public Power

- Local control: allows matching local resources to local needs
- Utility control over the electric distribution system design and operations
- Deepens relationships with customers
- Defense against rooftop solar and revenue loss
- Emphasis on long-term community goals





YOUR POWER TOMORROW

*Create*

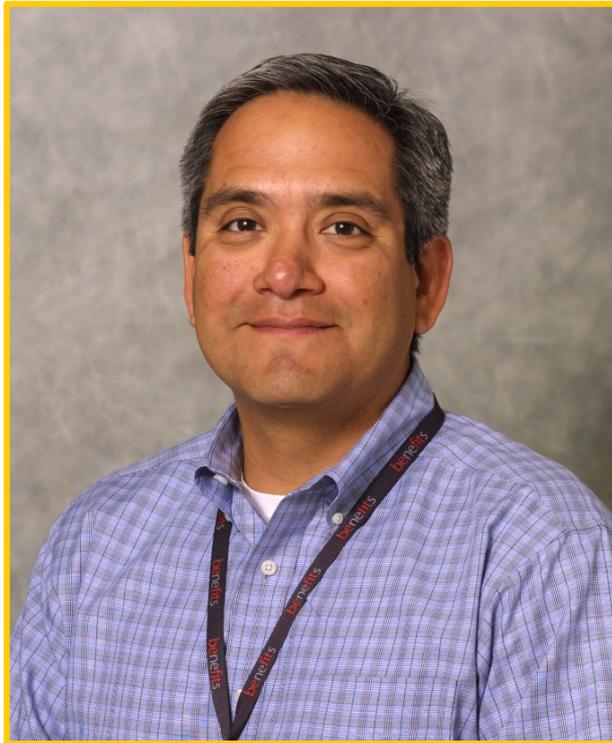
RooflessSolar™  
Powered by Clean Energy Collective

## For more information:

Tom Feiler  
[tfeiler@easycleanenergy.com](mailto:tfeiler@easycleanenergy.com)



# GO SOLAR



## **Rick Luna**

*Sr. Manager of Products  
and Services*

**CPS Energy**

# CPS ENERGY: LEADER IN SOLAR

---

- CPS Energy is #1 in Texas and #7 nationally for installed solar capacity.
- On pace for over 500MW deployed by end of 2016.
- First solar manufacturing in Texas:
  - US headquarters for OCI Solar Power and Mission Solar Energy
  - Manufacturing branches for Kaco New Energy (inverters) and SunAction Trackers
- Long-time supporter of both wholesale and retail clean energy alternatives like solar DG.

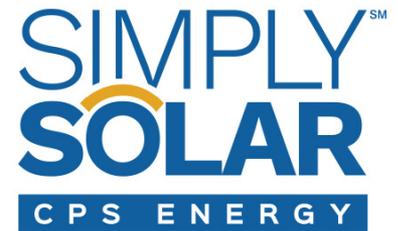


CPS Energy is offering Roofless Solar to broaden accessibility of solar to its customers

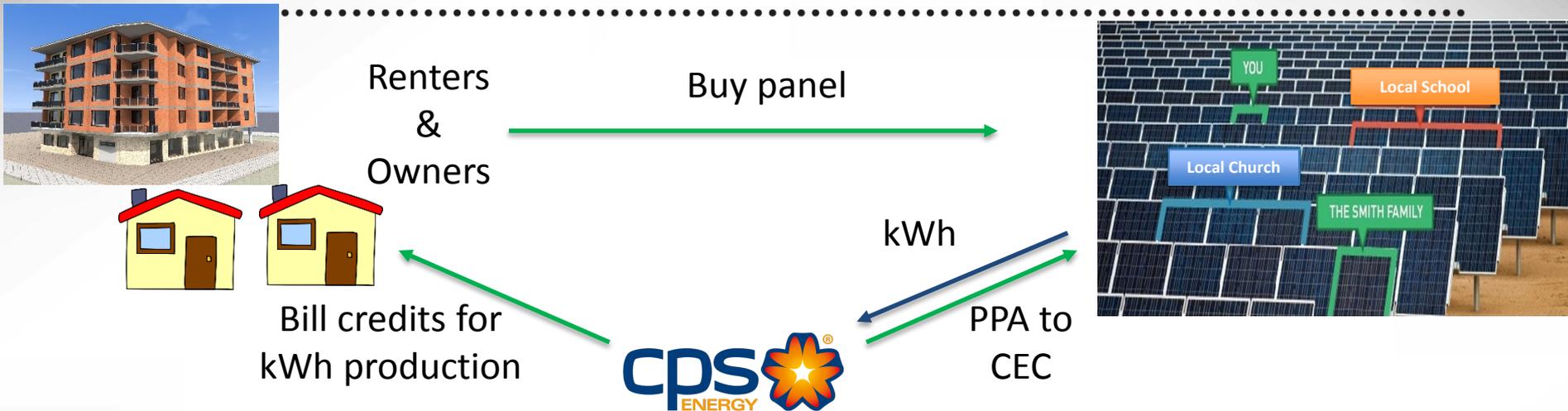
# OBJECTIVES OF PILOT PROGRAM

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- **Offer additional solar options to customers**
  - Traditional rebate model does not work for all customers
- **Eliminate barriers to solar adoption**
  - Eliminate the need to have >\$9K cash
  - Provide solutions for poorly-situated or shaded roofs
  - Add options for multi-family housing, such as condos or apartment
- **Increased adoption of renewable energy**
  - Support of Vision 2020 goals for renewable energy
  - Diversify our generation portfolio beyond fossil fuels and nuclear fuel



# HOW IT WORKS



- Customer buys panel(s) for about \$200/each after ITC and CPS rebate
- Customer receives bill credit (about \$25 per panel per year) for power produced for 25 years
- Open to either owners or renters, commercial or residential customers
- Nothing on your roof; no roof required
- Customer pays no maintenance, insurance, etc.,
- Live anywhere in CPS Energy service area
- Sell or gift panels at any time

# PROJECT STATUS

---

- Construction at 45% overall completion
  - Fence, road, site prep, pile driving, racking, motors completed
  - Trenching, pads, modules in progress
  - Testing, acceptance, go-live expected mid to late August
- Sales currently >50% subscribed
  - Reservations on 597kW
  - Success with suburban city customers interested in renewable commitment
- Marketing full ramp-up scheduled for mid July



# GO SOLAR



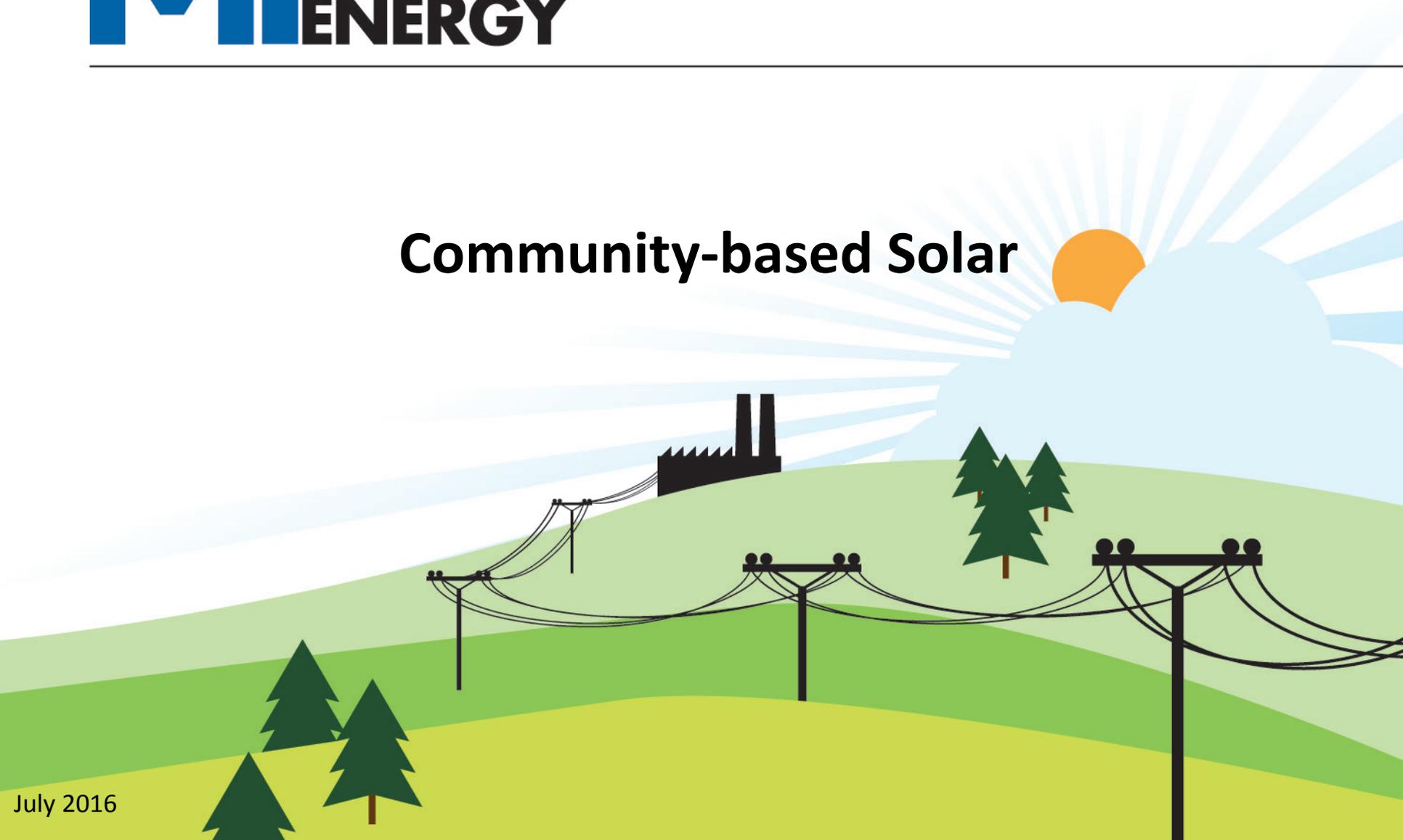
## **Maura Yates**

*Vice President of  
Sustainable Solutions*

**MP2 Energy**



# Community-based Solar



## COMMUNITY SOLAR OFFERS

### Cypress Solar Texas Programs

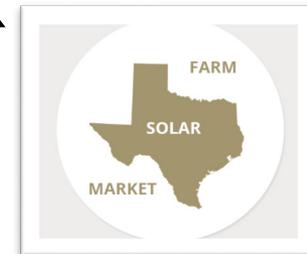
Location: North Load Zone



*Two Community Solar Programs*

### Farm to Market Solar Energy

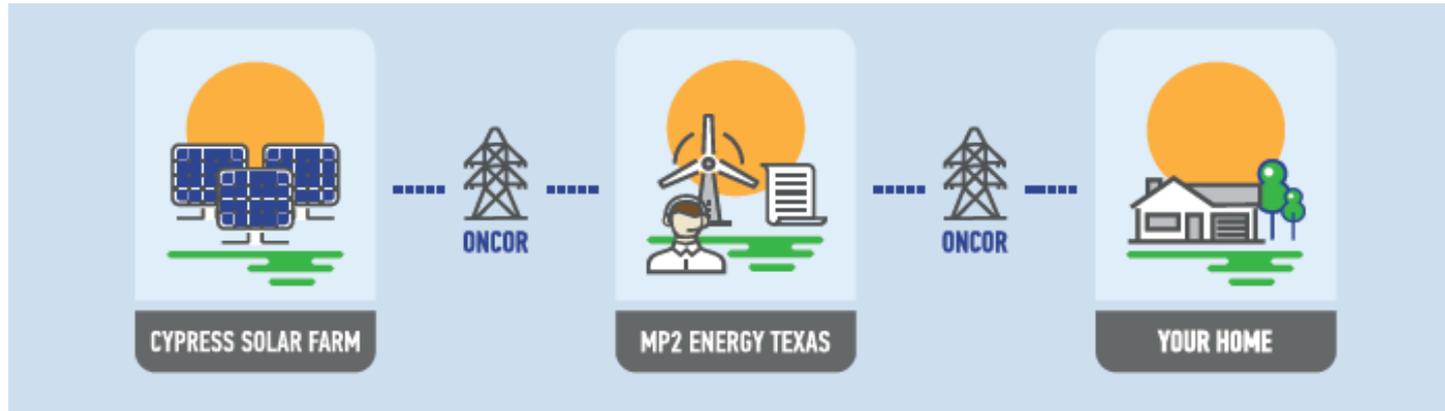
Location: Houston Load Zone



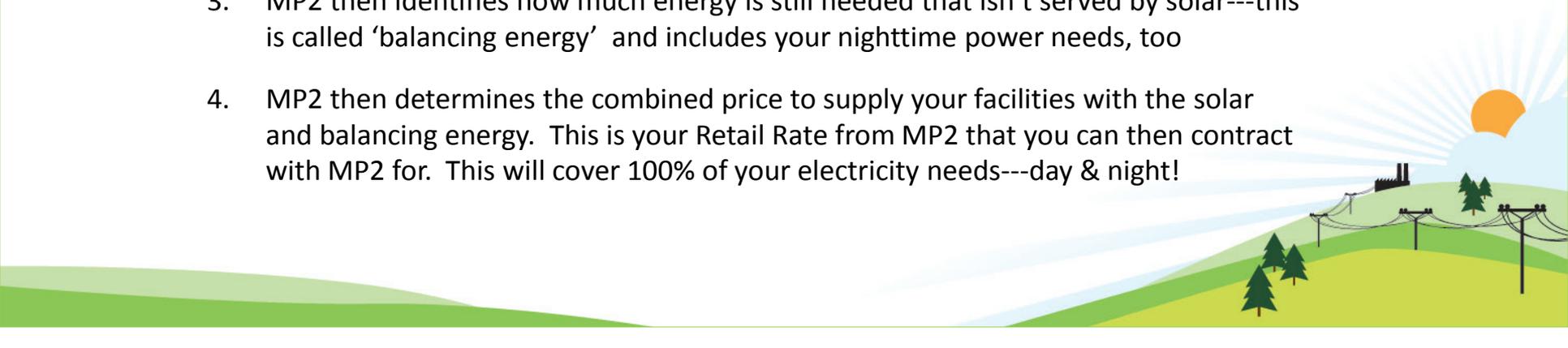
Check out our video on Community Solar!  
<https://fast.wistia.net/embed/iframe/90nym6esjb?popover=true>



## HOW DOES IT WORK?



1. Reach out to MP2 Energy and let us know you're interested in going solar
2. MP2 & solar developer enter into a contract to purchase the solar energy---this meets your daytime power needs
3. MP2 then identifies how much energy is still needed that isn't served by solar---this is called 'balancing energy' and includes your nighttime power needs, too
4. MP2 then determines the combined price to supply your facilities with the solar and balancing energy. This is your Retail Rate from MP2 that you can then contract with MP2 for. This will cover 100% of your electricity needs---day & night!

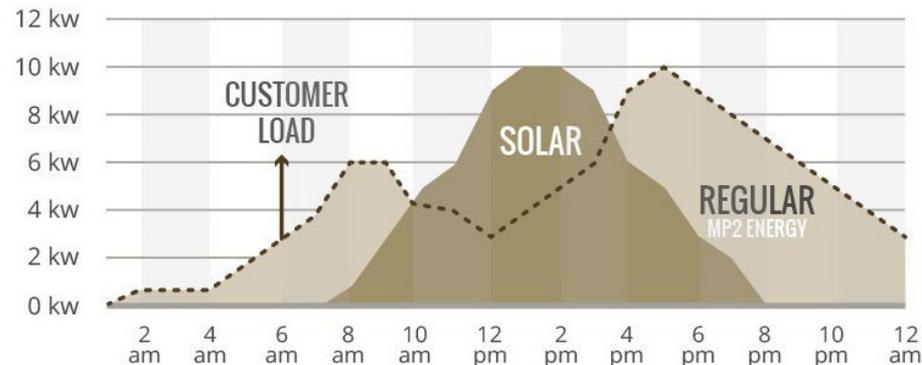


## WHY DO COMMUNITY SOLAR?

### THINGS TO REMEMBER:

- **IT'S EASY:**
  - You will contract for Community Solar with MP2 the exact same way you do for your regular retail supply!
  - MP2 uses our standard retail contracts, so no extra paperwork
  - MP2 assigns and transfers all RECs to the customer
- **Residential plans are available, too!** Find a solution that community members can engage in, too!
- **Economic Development opportunity for the community**
- **You can visit the solar site any time you want!**

1 Day Example:  
Single Customer Energy Consumption by Source



## CYPRESS SOLAR TEXAS OVERVIEW

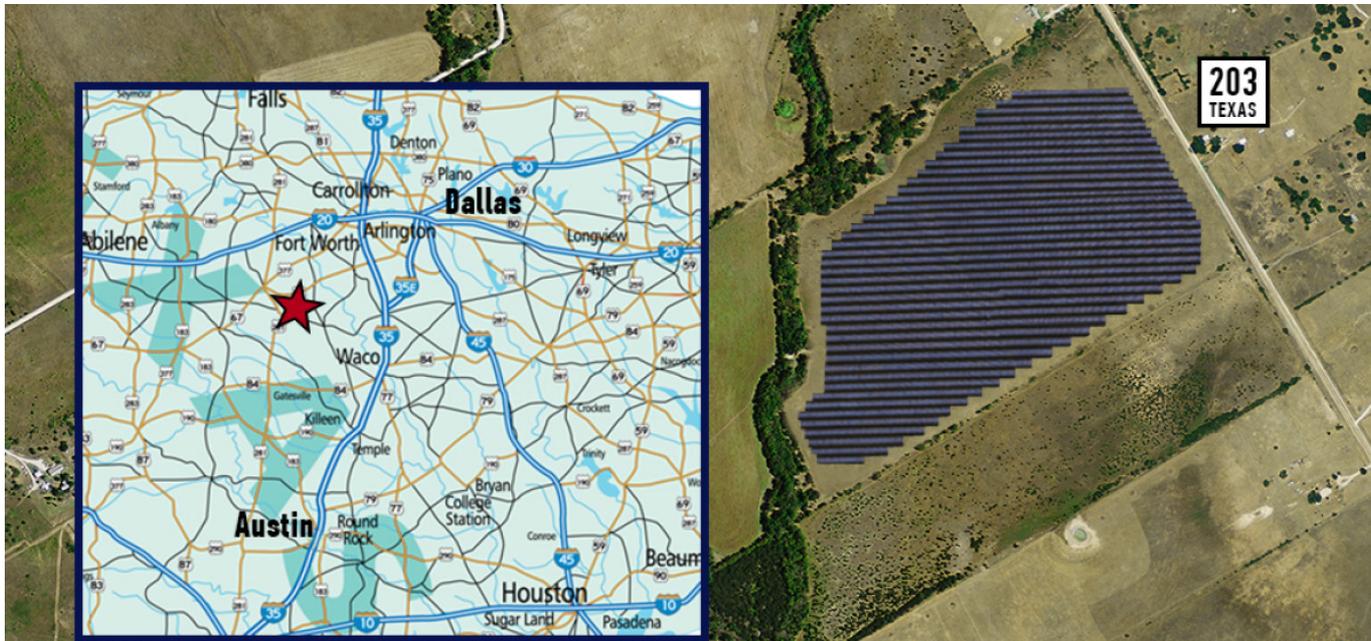


### Cypress Solar Texas Program

Walnut Springs, Texas

Online: est. August 2016

Retail Hedge Terms: 1 month- 120 month



## Cypress Solar Texas Program Offers

### Rate Details – Cypress Creek

<b>Term</b>	60-65 mos
<b>Size</b>	5-10 MW (~2.5-5k homes/project)
<b>TDSP Eligibility</b>	North Load Zone (AEP, Oncor)
<b>Solar Online</b>	August 2016
<b>Other notes</b>	Opportunity to develop “Custom” projects in the North Load Zone---build a solar project and name it what you want!



### Cypress Solar Texas

#### *Cypress Solar Texas is...*

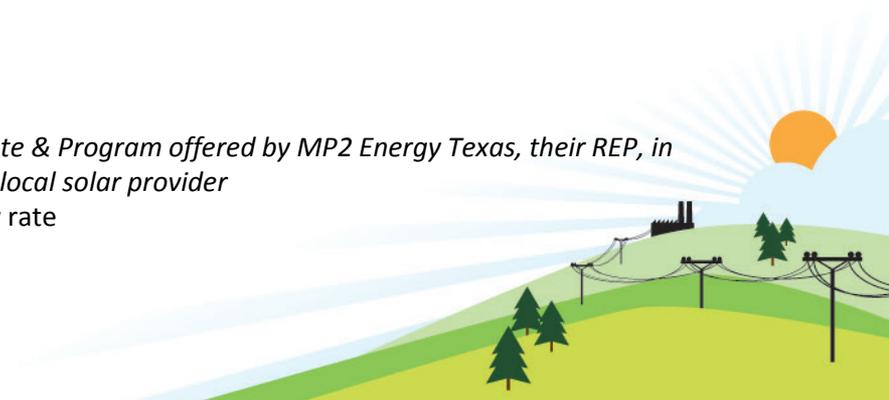
- *The Local Solar Provider company --- installer and leader in local solar*
- *Who MP2 Energy Texas has a contract with to buy/source their local solar for all Subscribers from*
- *Who MP2 Energy Texas has collaborated with to offer the **Cypress Solar Texas retail supply rate & program***



### Cypress Solar Texas PROGRAM

#### *Cypress Solar Texas Program...*

- *Is 100% Renewable Energy Retail Supply Rate & Program offered by MP2 Energy Texas, their REP, in collaboration with Cypress Solar Texas, the local solar provider*
- *60-65 month 100% renewable fixed energy rate*



# GO SOLAR



## Charles Lohrmann

*Editor of Texas Co-op  
Magazine*

Texas Electric  
Cooperatives

# TEC and Community Solar

Charles Lohrmann, Editor  
*Texas Co-op Power* magazine

# Electric Co-ops in Texas

- Long-term commitment to community and to members – 75-year history
- Member-owned and Member-directed
- Responsive to changing needs
- Solar projects follow member interests
- Significant variation across the state



# Co-op Goals for Solar Power in Texas

- Meet member needs and satisfy member interests
- Provide meaningful and consistent information about the reality of a solar installation
- Exploring options for community-scale solar farms or even utility-scale generation

# Solar Activity with Co-ops in Texas

- Approaching 3,000 member solar installations (growing)
- 6 community solar projects
- A range of smaller products that power an individual pump or another individual product.



# Surveys Show That Co-op Members Are Interested in Solar:

- To lower electric bills and save money
- To help the environment



# Co-op Goals with Solar

- Better manage load
- Offset peak loads in summer months
- Meet member needs and interests
- Help balance generation portfolio



# Distributed Generation

- Concerns about tying into the system
- Price to purchase energy
- Storage issues



# Community Solar: CoServ

CoServ Electric headquartered in Corinth, serves more than 160,000 members in 6 counties. Installed solar panels on truck barn in 2009 and launched a 2-MW community solar farm in 2015.

# CoServ 2-MW Solar Farm

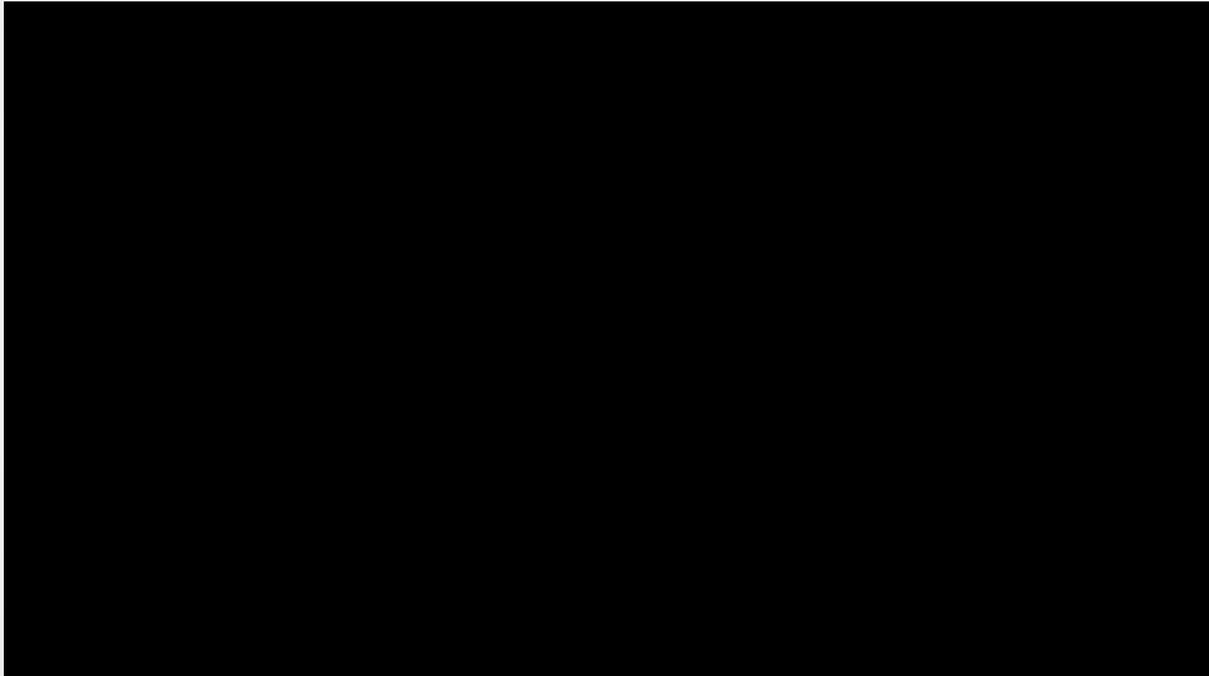
- Covers 16 acres
- 8,448 panels (315 W each)
- Power feeds directly into CoServ distribution
- 30 miles of wire



# For CoServ Members

- No upfront costs
- No contract
- No long-term lease
- No cancellation fee
- Comparable cost to standard rates

# Time-lapse of CoServ Solar Farm



Texas Electric Cooperatives

Your Touchstone Energy® Partner 

# Community Solar: Mid-South

Mid-South Synergy, headquartered in Navasota with offices in Montgomery and Huntsville, serving more than 21,000 members in 6 counties



Texas Electric Cooperatives

Your Touchstone Energy® Partner 

# Mid-South Synergy Bedias Project

- Residential customers purchase up to five 100-kWh blocks at set price per block per month.
- 997 kW capacity
- Price locked in for 5 years
- Benefits: Reduce carbon footprint; depend on guaranteed pricing



# Pedernales Electric Cooperative

- Empower Loan program to help members purchase solar capacity and battery technology
- Net metering for interconnection
- Hill Country Solar Tour
- For more information: [pec.coop](http://pec.coop)



# PEC's Hill Country Solar Tour

- Tour member-owned photovoltaic systems
- Saturday, October 1, 2016
- Partnership with Texas Solar Energy Society
- Solar installer fair: learn from local installers



# Solar Projects in Development

- Solar farms on subscription basis
- Solar capacity for lease to members
- Range of capacity from 100 kW to 1 MW
- Loan and rebate options help co-op members



# For more information

- National Rural Electric Cooperative Association: [nreca.coop](http://nreca.coop) (also contact individual electric co-ops)
- Texas Solar Energy Society: [txses.org](http://txses.org)
- Smart Electric Power Alliance; [solarelectricpower.org](http://solarelectricpower.org)
- *Texas Co-op Power* magazine: [Editor@texas-ec.org](mailto:Editor@texas-ec.org)

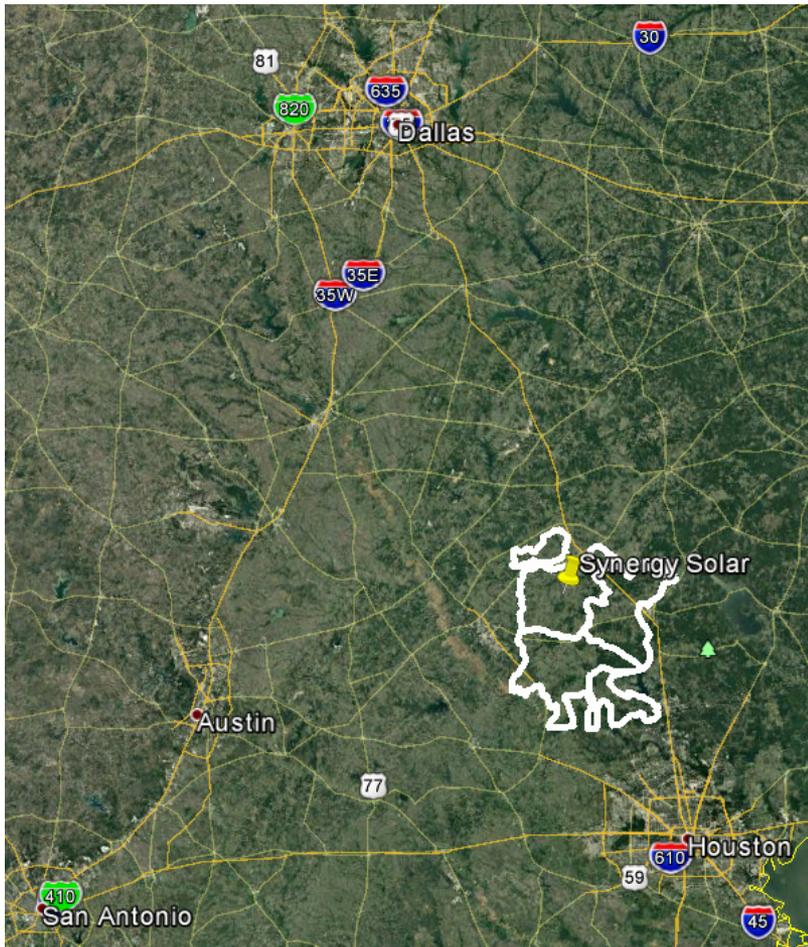




**Eric Cowey**  
*Distribution Engineer*  
Mid-South Synergy



A Touchstone Energy® Cooperative 

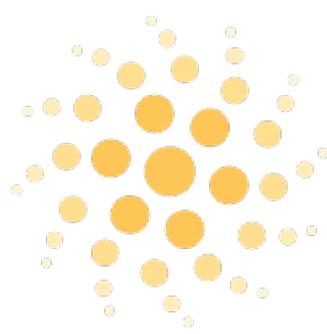


- ▶ Distribution Cooperative
- ▶ ~ 28,800 meters
- ▶ ~ 3,000 miles of line
- ▶ Service in 6 Counties
- ▶ ~ 130 Employees
- ▶ Multiple For-Profit Subsidiaries

# History

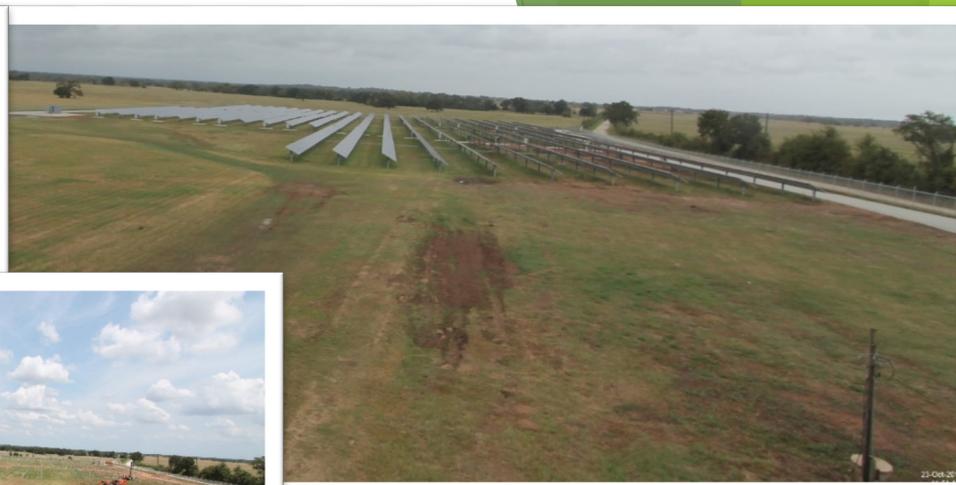
- ▶ Reviewed solar options for 3 years
- ▶ Viewed sites throughout the US
- ▶ Posed short survey at Annual Meeting
- ▶ Overwhelming interest and Board approved July 2014 to proceed
- ▶ Project 1 Started June 2015





# SYNERGY SOLAR

<b>Synergy Solar</b>	<b>Project 1</b>	<b>Project 2</b>
<u>Construction Dates:</u>	July 15 – Dec 15	Jan 16 – July 16
<u>Size:</u>	997 kW	997 kW
<u>Type:</u>	Single Axis Tracker	Single Axis Tracker
<u>Modules:</u>	(4240) 310W Hanwha Qcells	(4180) 315W Hanwha Qcells
<u>Inverters:</u>	(36) ABB Trio Inverters	(36) ABB Trio Inverters
<u>Step Up Transformer:</u>	1000 kVA 480V/24.9kV GY	1000 kVA 480V/24.9kV GY
<u>Land Used:</u>	~8 acres	~7.7 acres
<u>Production:</u>	1,570,091 kWh Since Sept 2015	508,472 kWh since May 2016



Project 1

**SYNERGY SOLAR**

[www.midsouthsynergy.com/synergysolar](http://www.midsouthsynergy.com/synergysolar)

Project 2



# SYNERGY SOLAR SUCCESS

- ▶ Project 1 was allocated into 100 kWh blocks for subscription purposes, and was fully subscribed before the first module was installed.
- ▶ Project 2 currently has 270 blocks subscribed and has not reached final completion.
- ▶ We limited our subscription to no more than 5 blocks per residential member and prevented commercial members from participating for the time being to help ensure all the residential members who want to participate have the option to subscribe.
- ▶ Currently we have ~320 members subscribing to ~1470 blocks, on average that is 4.5 blocks per member.

# LESSONS LEARNED

- ▶ Topo survey and drainage
- ▶ Consistent project management from contractor
- ▶ Third party Project Manager and Engineer
- ▶ Communication requirements between Financial, Legal, Management and Engineering Teams
- ▶ Time requirements and dedicated personnel
- ▶ G&T Coordination and export to Transmission Grid Option

# FUTURE PROJECTS

- ▶ Third phase on same site is possible
- ▶ Other Projects being considered:
  - ▶ Solar
  - ▶ Genset peak shaving
  - ▶ Battery Storage
  - ▶ Wind
  - ▶ Etc.
- ▶ All future work would have to meet board directive of win/win for the Cooperative and the Members, while offering the Member a simple option to participate.



## QUESTIONS

**Tom Feiler**

*Sr. VP of Business  
Development*

**Clean Energy  
Collective**

**Rick Luna**

*Sr. Manager of Product  
Development*

**CPS Energy**

**Maura Yates**

*Vice President of  
Sustainable Solutions*

**MP2 Energy**

**Charles Lohmann**

*Editor of Texas  
Co-op Magazine*

**Texas Electric  
Cooperatives**

**Eric Cowey**

*Distribution Engineer*

**Mid-South Synergy**



## Join Us!

# Summer Solar Webinar Series

### **Putting Underutilized Land to Work, 11:30 am Wednesday, July 27**

This webinar will focus on providing information to local governments including school districts, special districts, and business/industry sectors interested in going solar. Presentations will include topics such as solar applications on landfills, brownfields, wastewater treatment plants, and other facilities where Solar PV can be put to work for energy savings.

Visit [gosolartexas.org](http://gosolartexas.org) for webinar details



**Thank You!**

**Presentations, upcoming webinars and  
training opportunities posted at  
GoSolarTexas.org**

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