Community Solar in TX
Municipal and State Energy Edge Forum
04/25/2024 (Slides R1 4/29/24)

Municipal & State Energy Edge Forum connects industry experts, attorneys, policy makers, consultants, governments, universities and organizations together to collaborate on today's most effective approaches for advancing clean energy. The goal of Municipal & State Energy Edge Forum is to create an environment that facilitates the policies, programs and projects for a sustainable energy future.

https://mseforum.com/

James Orenstein, Trinity River Community Solar Systems (TRCSS)
Co-founder, Executive Director & Design Engineer

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Intro & Definition

1) TRCSS: An early-stage startup nonprofit.

Mission Statement:

Trinity River Community Solar Systems (TRCSS) is a 501c3 non-profit created to develop & design renewable and sustainable energy resources for communities that cannot provide those resources on their own. Our focus includes those experiencing energy poverty in North Central Texas.

2) Community Solar:

Size: generally 100 kW to <10 MW

Participation: Buy-in or subscription

Geographic scope: Local?

NREL CS Database: TX

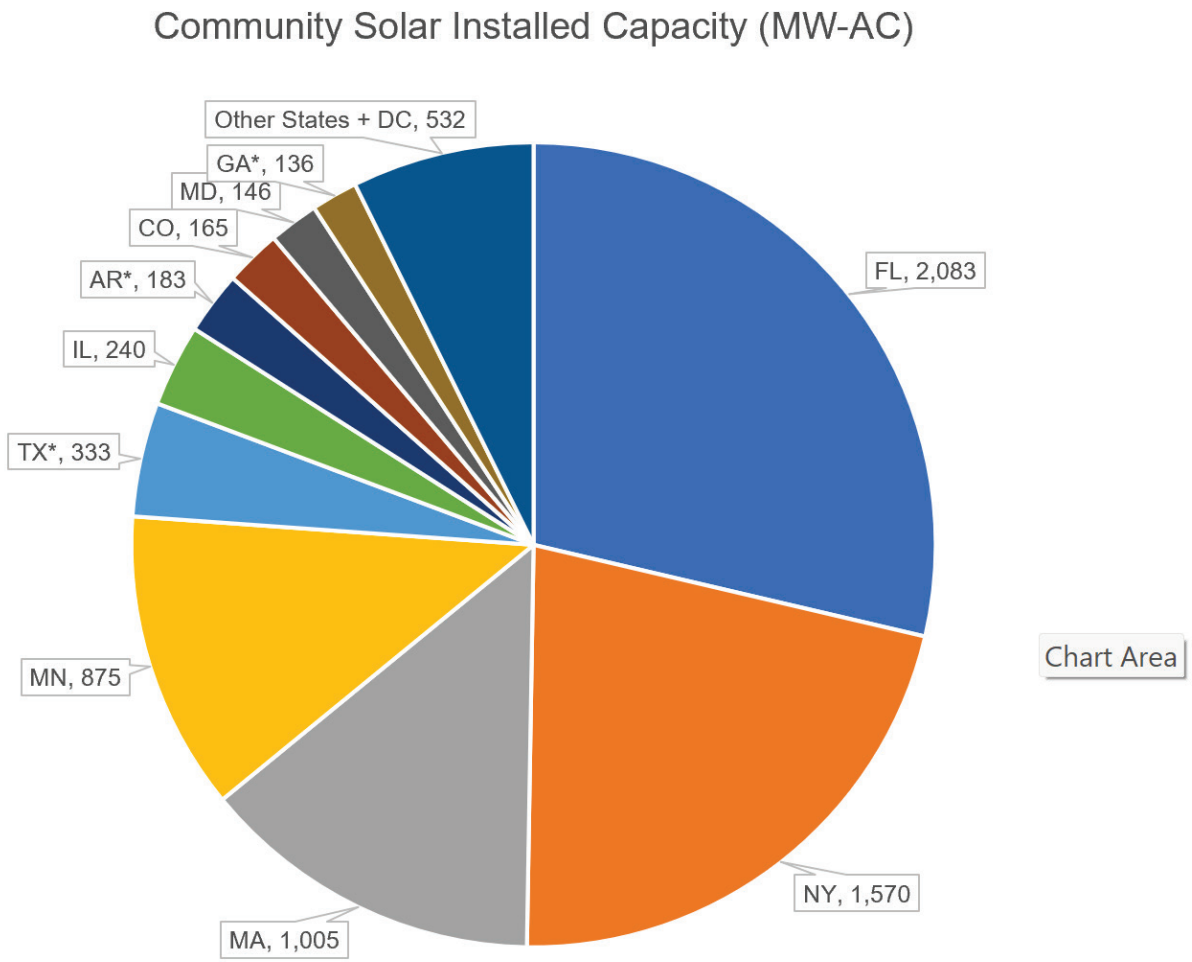
Project Name	City	State	Utility	Utility Type	Developer	System Size (MW-AC)	System Size (kW-AC)	Year of Interconnection
Roofless Solar	Orange Grove	TX	Nueces Electric Cooperative	Cooperative	Clean Energy Collective	0.70	700.00	2016
Roofless Solar	Adkins	TX	CPS Energy	Municipal	Clean Energy Collective	1.20	1200.00	2016
Farm To Market Solar	Sealy	TX	MP2 Energy LLC	Retail Power Marketer		1.50	1500.00	2016
Synergy Solar	Bedias	TX	Mid-South Electric Coop Assn	Cooperative	Turning Point Energy	1.98	1980.00	2016
Walnut Springs	Walnut Springs	TX	TriEagle Energy	Retail Power Marketer	Cypress Creek Renewables LLC	5.00	5000.00	2016
SWRE Community Solar Vernon	Vernon	TX	Southwest Rural Electric Association, Inc.	Cooperative		0.10	100.00	2017
Palmer Array	Austin	TX	Austin Energy	Municipal		0.19	185.00	2017
SunHub	Gonzales	TX	Guadalupe Valley Elec Coop Inc	Cooperative		2.00	2000.00	2017
El Paso Electric Community Solar	El Paso	TX	El Paso Electric Co.	Investor Owned	El Paso Electric Community Solar - Eastside Campus	3.00	3000.00	2017
BEC Community Solar	Leakey	TX	Bandera Electric Coop, Inc	Cooperative		1.90	1900.00	2018
CoServ Solar Station	Krugerville	TX	Co-Serv Electric	Cooperative		2.00	2000.00	2018
La Loma	Austin	TX	Austin Energy	Municipal		2.60	2600.00	2018
Go Local Solar Texas Dakota Solar Park	Meridian	TX	Green Mountain Energy	Retail Power Marketer		5.00	5000.00	2018
Go Local Solar Texas Gable Solar Park	Wallis	TX	Green Mountain Energy	Retail Power Marketer		10.00	10000.00	2018
Cooperative Solar Program	Austin	TX	Pedernales Electric Coop, Inc	Cooperative	Renewable Energy Systems	12.98	12984.62	2018
Big Sun Community Solar	San Antonio	TX	CPS Energy	Municipal	Go Smart Solar	5.00	5000.00	2019
United Community Solar plant	Clifton	TX	United Electric Coop Service Inc - (TX)	Cooperative		9.90	9900.00	2019
Oberon Solar Farm	Odessa	TX	Chariot Energy	Retail Power Marketer	174 Power Global Retail Texas, LLC	30.00	30000.00	2020
Erath	Stephenville	TX	United Electric Coop Service Inc - (TX)	Cooperative	Navisun	10.00	10000.00	2021
Go Local Solar Texas Green Mountain Azure Solar Park	McAllen	TX	Green Mountain Energy	Retail Power Marketer	Azure Solar LLC	228.40	228400.00	2021

Ref: Sharing the Sun Community Solar Project Data (December 2023)

This database represents a list of community solar projects identified through various sources as of Dec 2023. In addition, this dataset updated the low-income (LI) and low- and moderate-income (LMI) provisions for both complete and pending projects, based on the most recent program data we collected as of March 2024.

https://data.nrel.gov/submissions/233

NREL CS Database: State Summary



Ref: Sharing the Sun Community Solar Project Data (December 2023)

NCSP Goals

The National Community Solar Partnership's goal is to enable community solar systems to power the equivalent of five million households by 2025 and create $1 billion in energy savings for subscribers. This target represents a 700% increase in community solar deployment, growing from 3 GW of community solar in 2020 to 20 GW in 2025.

This target supports the overall Partnership goals to:

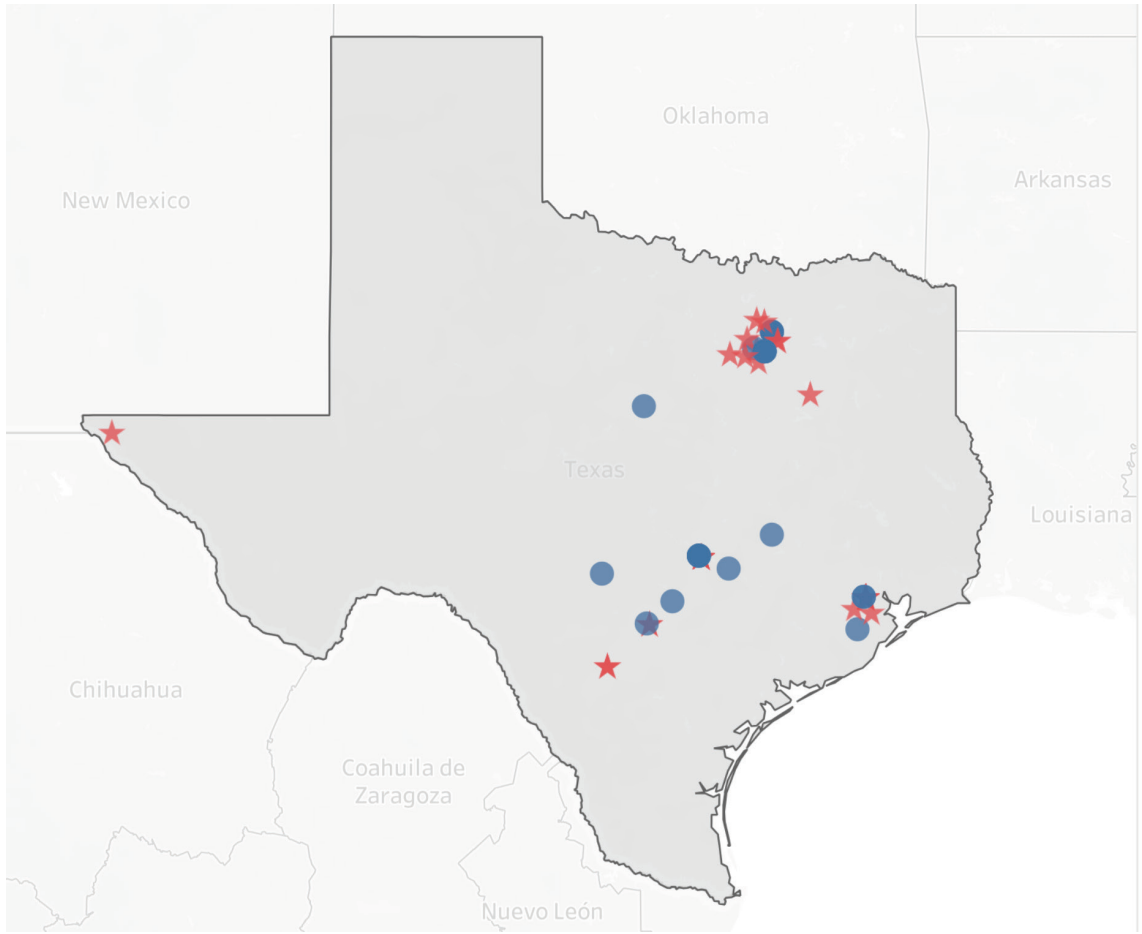
- Make community solar **accessible** to every U.S. household;
- Ensure community solar is **affordable** for every U.S. household; and
- Enable communities to realize additional **meaningful benefits** and value streams from community solar installations.

Represents an increase from **3 GW to 20 GW** of community solar capacity

$1 billion in savings reflects an average **bill reduction of 20%**

NCSP: Texas Partners & Comparison

Texas Organizations Map: Organization Supports NCSP Target ★



CA: 222 Members
NY: 154
DC: 153
MA: 113
CO: 109
TX: 102

Total: 2033 Members

https://ncsp.solarinyourcommunity.org/main/groups/39758/lounge/members

https://www.energy.gov/communitysolar/national-community-solar-partners

NCSP Initiatives: https://www.energy.gov/communitysolar/national-community-solar-partnership-initiatives

TECHNICAL ASSISTANCE

The National Community Solar Partnership is increasing its investment in technical expertise and capacity building to accelerate community solar development that provides meaningful benefits for subscribers such as reduced energy bills, increased resilience, and workforce development. Technical assistance is provided on a rolling basis to any organization or individual that has registered as a partner.

STATES COLLABORATIVE

Currently, there is no federal legislation to support community solar. Instead, states can choose to develop and administer their own community solar policies and programs. While 22 states and the District of Columbia have enabled community solar through mandates, enabling legislation or incentives, expansion of existing programs or development of new programs could have a dramatic impact on access to community solar. In February 2022, the National Community Solar Partnership launched a States Collaborative to engage, convene, and support states to unlock state-level barriers to community solar deployment. Currently, 17 states and territories officially joined the Collaborative, with an additional 15 states and territories also participating.

COMMUNITY POWER ACCELERATOR

Equitable access to project funding is one of the most persistent barriers to community solar development. To get smaller community solar projects deployed, especially in underserved communities, developers need expertise, capacity, and access to predevelopment funds to prepare materials for funding applications. The Community Power Accelerator (formerly known as the Credit-Ready Solar Initiative) provides the resources and network of lending institutions, philanthropic organizations, and community solar developers to support a more efficient and equitable distribution of the capital needed to develop community solar that delivers meaningful benefits to subscribers and their communities. The Community Power Accelerator Learning Lab will also help small developers and those new to community solar gain a deep understanding of project development and operations, with a particular focus on project funding.

CLEAN ENERGY CONNECTOR

There are significant costs to developers associated with customer acquisition and management of low- to moderate-income community solar subscribers, which can impact the household savings passed to subscribers. The National Community Solar Partnership, in partnership with the U.S. Department of Health and Human Services, has developed a tool that will connect recipients of federally-managed, low-income energy programs with available community solar subscriptions that have strong consumer protections and verified savings. This tool can both increase household savings and access for program participants and make it easier for developers to connect with potential subscribers.

EDUCATION AND OUTREACH

Broad awareness and understanding of community solar and its benefits remain limited. It can be challenging for state leaders, utilities, and developers to communicate and navigate the wide range of community solar business models and program benefits. This challenge can be exacerbated in communities with histories of predatory energy providers. The National Community Solar Partnership is supporting a community solar promotion initiative to elevate and amplify market influencers, highlight the meaningful benefits of equitable community solar, and recognize community solar products that provide benefits in line with program targets and the Justice40 initiative.

Note: TRCSS is receiving Technical Assistance through the CPA Learning Lab TA Program, including regarding Energy Trading.

Texas Solar Energy Society Resources: https://txses.org/solar-resources/

Roadmap for scaling community solar in Texas

Based on our findings, we believe that in the absence of top-down policy in Texas, the unique characteristics and capabilities of CBOs will be essential in forming the bottom-up activation pathways that overcome the barriers to development of CSS in Texas. The findings in this report can also serve as a useful example to states wanting to build a market-driven, bottom-up scalable approach to CSS development. Our roadmap (next page) encompasses three key strategies for activating community solar in Texas:

(1) Statewide Coalition Building. To build successful cross-sector partnerships and a supportive policy ecosystem, groups within Texas could organize with each other by recognizing and broadening their overlapping missions.

(2) Market-Specific Community Activation and Technical Assistance. Resources are needed to educate and activate 1) community-based organizations, 2) technical organizations like utilities and community solar developers, and 3) diverse bases of subscribers for CSS projects.

(3) Regional Knowledge and Resource Building. Regional groups of bridging organizations have unique capacity in local siting-related functions, given the need for groups that can translate technical policies, such as zoning or interconnection, to lay audiences and perform them with local or regional interests in mind.

Texas Energy Poverty Research Institute: https://tepri.org/

TEPRI
Texas Energy Poverty Research Institute

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ENERGY EQUITY

As the United States transitions away from an energy supply dominated by fossil fuels to a more diverse fuel base, it is critical to ensure that this transition is “just” and that all communities have equitable access to affordable, clean energy. Past energy transitions have too often maintained social dynamics that resulted in social, economic, and health disadvantages for low-income communities and communities of color. If equity is not centered in the current transition to clean energy, there is potential to continue the same mistakes.

Energy equity is important because it recognizes that disadvantaged communities have been historically marginalized and overburdened by pollution, underinvestment in clean energy infrastructure, and lack of access to energy efficient housing and transportation. Putting energy equity at the center of TEPRI’s solutions development process aims to reverse these negative impacts.

TRCSS ASES Poster Presentation

Video Clip: TRCSS ASES Poster Presentation, starting at 0:56

https://youtu.be/QDIV3oFNqhU?si=SiGROaaiTQ7g0Cl2&t=56

Aggregated Community Solar + Storage Using Blockchain Transactive Energy

James Orenstein & Michael Fladmark, Trinity River Community Solar Systems (TRCSS), jorenstein@trcss.org & mjfladmark@trcss.org

Background

- Utility-scale solar in Texas is MASSIVE!
- No state policies encourage Community Solar in Texas, BUT nothing prevents it in deregulated areas.
- BUT why is Texas lagging other states in adopting Community Solar?

Questions

- What are the critical barriers to successfully adopting Community Solar in Texas?
- What are innovative solutions to address those barriers?
- What are lessons learned from other successful programs?

Methods: TRCSS is:

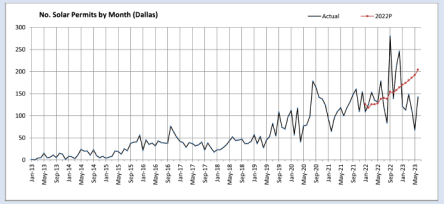
- Researching Blockchain Transactive Energy (BCTE) applications for Solar + Storage.
- Participating in the Texas ERCOT Aggregated DER (ADER) Pilot program as an aggregator of Community Solar projects.
- Working with other organizations through US Department of Energy (DOE) sponsored programs.

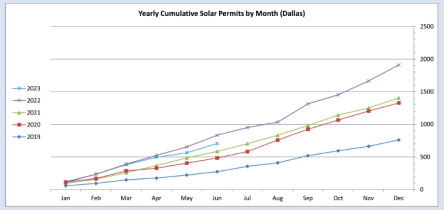
Key Conclusions

- Successful deployment of TRCSS' innovative solutions for Community Solar + Storage will significantly contribute to Greenhouse Gas reductions and Air Quality improvements.
- Our equity-based approach will provide benefits to consumers experiencing Energy Poverty.

Key Results: TRCSS is:

- Analyzing City of Dallas Solar Permitting data trends.





Oncor Distributed Generation Report: Year - Year Increase (%): 2022		
City	Facility* Count	Solar kW (AC)
Grand Total	42%	36%
FORT WORTH	42%	42%
DALLAS	29%	32%
ARLINGTON	41%	45%
ROUND ROCK	28%	27%
ODESSA	25%	24%
KILLEEN	53%	56%
PFLUGERVILLE	25%	27%
PLANO	33%	20%
GRAND PRAIRIE	33%	31%
MIDLAND	18%	17%

- In discussions with Powerledger to use their BCTE applications for Community Solar in Texas.
- Participating in the Public Utility Commission of Texas (PUCT) "Technical Requirements and Interconnection Processes for Distributed Energy Resources (DERs)" proceedings.

Community Energy Trading in TX: Potential Revenue Streams for Helping Make Community Solar Sustainable: https://www.linkedin.com/pulse/community-energy-trading-tx-potential-

ASES -2022 ANNUAL CONFERENCE

Presented by: James Orenstein & Michael Fladmark
Trinity River Community Solar Systems, Inc

TRCSS is focusing on the Dallas Fort Worth Metroplex: https://www.linkedin.com/company/trinity-river-community-solar-systems-inc-trcss

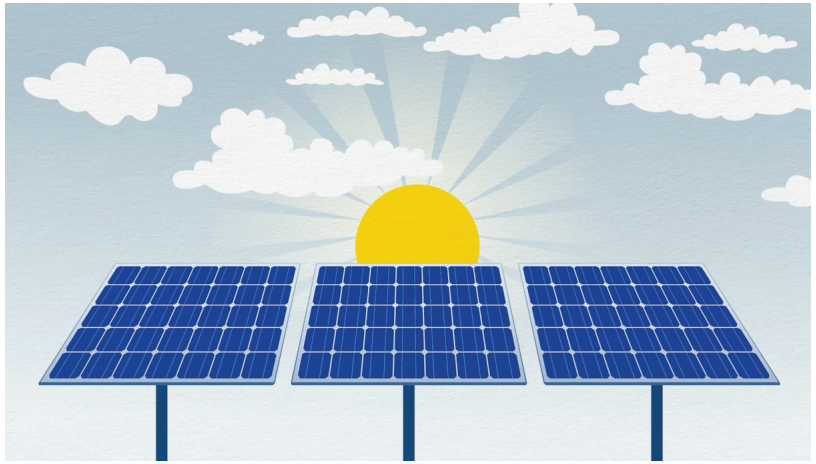

James

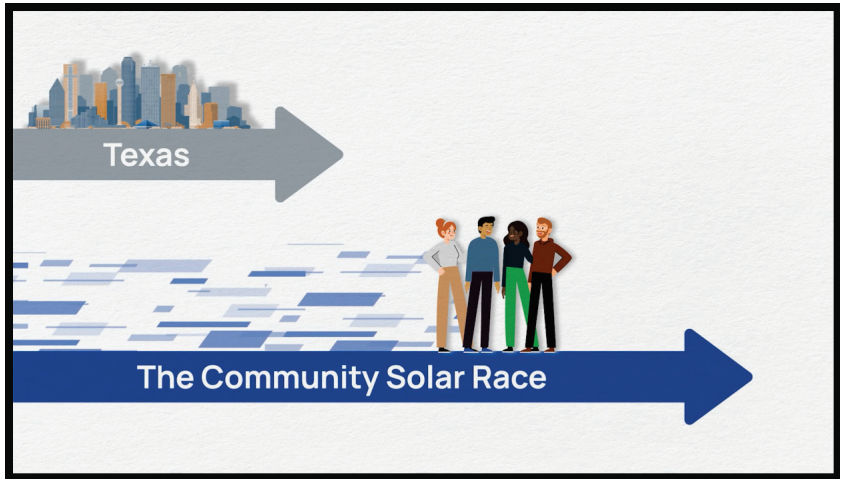

Michael

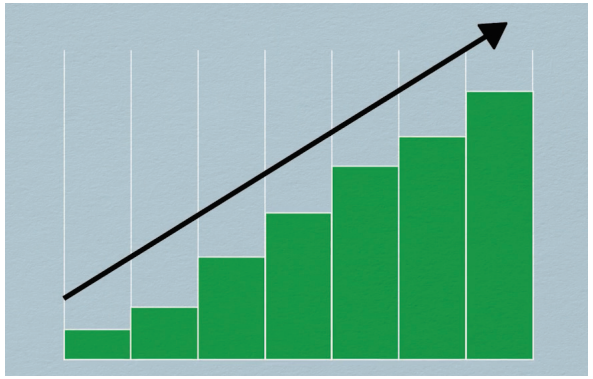
TRCSS Elevator Pitch

Video Clip: TRCSS Elevator Pitch (starting at 0:27)

https://youtu.be/TlCVzOh5_k0?si=ur0jK_TZ6yUdRgfy&t=27



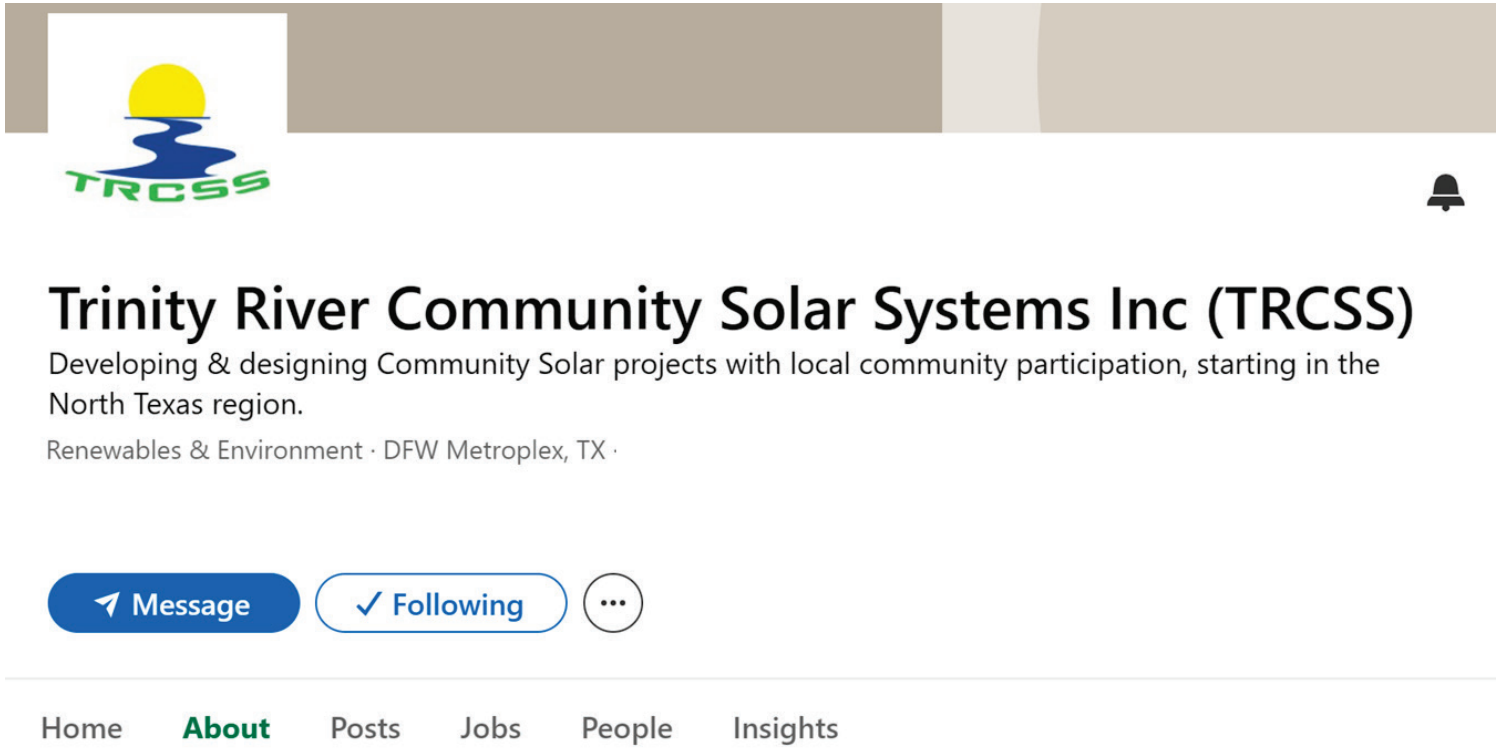




TRCSS References

LinkedIn Business Page:

https://www.linkedin.com/company/trinity-river-community-solar-systems-inc-trcss



TRCSS YouTube channel:
https://www.youtube.com/@TrinityRiverCSS

Potential Future Agenda Additions

i) NCSP: Developer Group
ii) NCSP: Low Income Subscriber Platform
iii) NCSP: Challenges
iv) NCSP: Learning Lab
v) Climate Action Plan Example: Dallas
vi) TX Muni Examples: Austin Energy & CPS
vii) TX Muni RFP: San Antonio/CPS
viii) TX Coop Examples: CoServ & Pedernales
ix) TX Deregulated Example: Houston Sunnyside
x) TRCSS: ERCOT ADER Energy Resources Council of Texas Aggregated Distributed Energy Resources Pilot Program)
xi) TRCSS: Energy Trading: MSE Forum presentation April 2024
???) Suggestions welcome!