Nonprofit Utilities Tool Box

Produced by the North Central Texas Council of Governments (NCTCOG) and the State Energy Conservation Office (SECO)

Nonprofit utilities in Texas (Municipally Owned Utilities and Electric Cooperatives) are uniquely positioned to advance solar in their service regions due to a permissive regulatory environment, their ability to swiftly deploy innovative services, their responsiveness to customer demand, and their alignment with local energy or environmental policy goals. In fact, Texas nonprofit utilities are some of the state's first solar movers and have been actively pursuing innovative solar efforts such as CPS Energy's Solar Host San Antonio pilot program, Mid-South Synergy's community solar installations, and Austin Energy's efforts to offer solar to low-income populations.

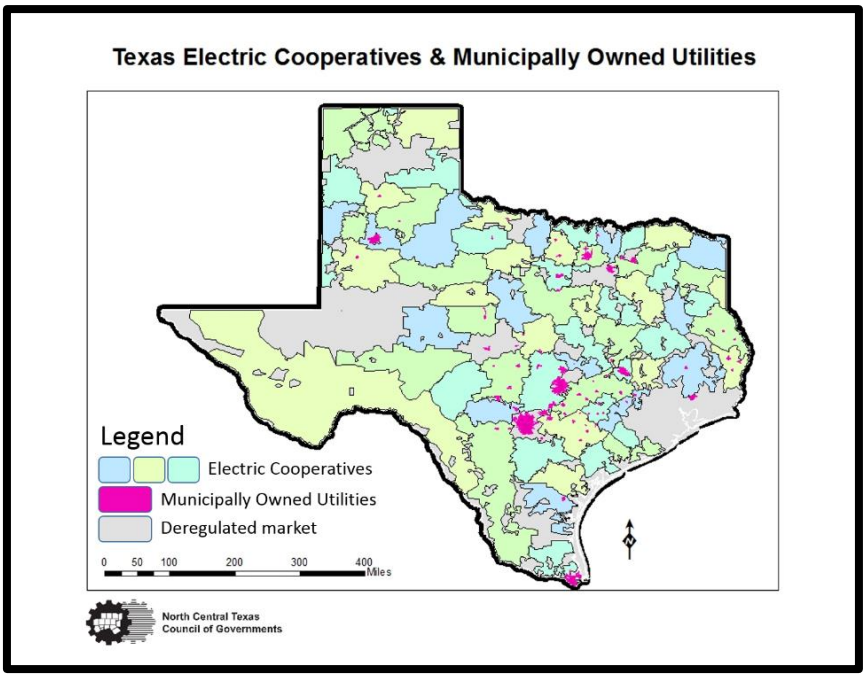
These, and other Texas, municipally owned utilities (munis) and electric cooperatives (co-ops) are developing solar because it makes sense. Texas is blessed with an abundance of solar radiance. The cost of solar energy is approaching (and in some cases has met!) cost parity with other energy sources due to falling hardware costs and incentives. Because of these geographic and economic reasons, Texas munis and co-ops are primed to help their customers benefit from cost-competitive and reliable solar electricity.

Below are resources to better understand **utilities' motivations for pursuing solar, types of solar projects, regulatory requirements and means of financing solar**. Additionally, guidelines for nonprofit utilities to develop community solar projects, case studies, and other resources to help Texas utilities expand solar can be found at www.gosolartexas.org

The Case for Solar

- **Economics:** Solar costs are falling. In fact, in some cases it's possible to contract solar electricity at lower rates than conventional sources (per kWh), such as the City of Georgetown (link to video clip or case study with Georgetown). Additionally fixed solar electricity rates will be attractive to businesses operating within a utility's service area.
- **Customer Demand:** Commercial and residential customers across the state are asking for solar energy now.
- **Environmentally sound energy regulations:** As new federal regulations to reduce emissions from energy production take effect, solar stands to become even more cost-effective since it already is a clean energy source
- **Compliance with Senate Bill 898:** Senate Bill 898 requires munis in nonattainment areas to set goals to reduce their electrical consumption by five percent each year for ten years, beginning in September 2011.

Nonprofit Utilities and the Texas Electricity Market



Texas nonprofit utilities play a sizable role in the state's electricity market. They cover more than 75 percent of the state's land mass and provide electricity to 31 percent of residential customers and to 26 percent of commercial customers.

Regulatory requirements for munis and co-ops are permissive. For the most part, these utilities are self-governed, and are subject to no regulatory oversight from the Public Utility Commission of Texas (PUCT) or from the Electric Reliability Council of Texas (ERCOT). Because of this, they can act quickly and innovate in new ways. This puts nonprofit utilities at an advantage for advancing solar in their service areas and responding to customer demand.

Nonprofit utilities and the deregulated market

Unlike much of the Texas power market, munis and co-ops are excluded from deregulation, meaning that they can remain vertically integrated and are not required to participate in competitive retail markets. Because of this, their electricity rates are often stable and relatively low compared to rates in the deregulated market.[i] Munis and co-ops have the option to "opt-into" competition if they choose; however, only one co-op, Nueces Electric Cooperative, has opted into competition to date.[ii]

Regulatory Requirements for Distributed Generation

Although regulatory requirements for nonprofit utilities are few, utilities should be aware of interconnection and registration requirements associated with distributed generation (DG).

Interconnection standards

Every distributed generation resource added to the ERCOT grid requires an interconnection agreement. Munis and co-ops should be aware of additional county and city permit regulations and building codes that may affect DG system when developing the interconnection agreement.[iii] Utilities typically develop interconnection agreements prior to the construction of a solar array with the distributed service provider. This agreement also accounts for the transferring of the power benefits and is usually negotiated through a power sales agreement between the project owner and the utility or host.

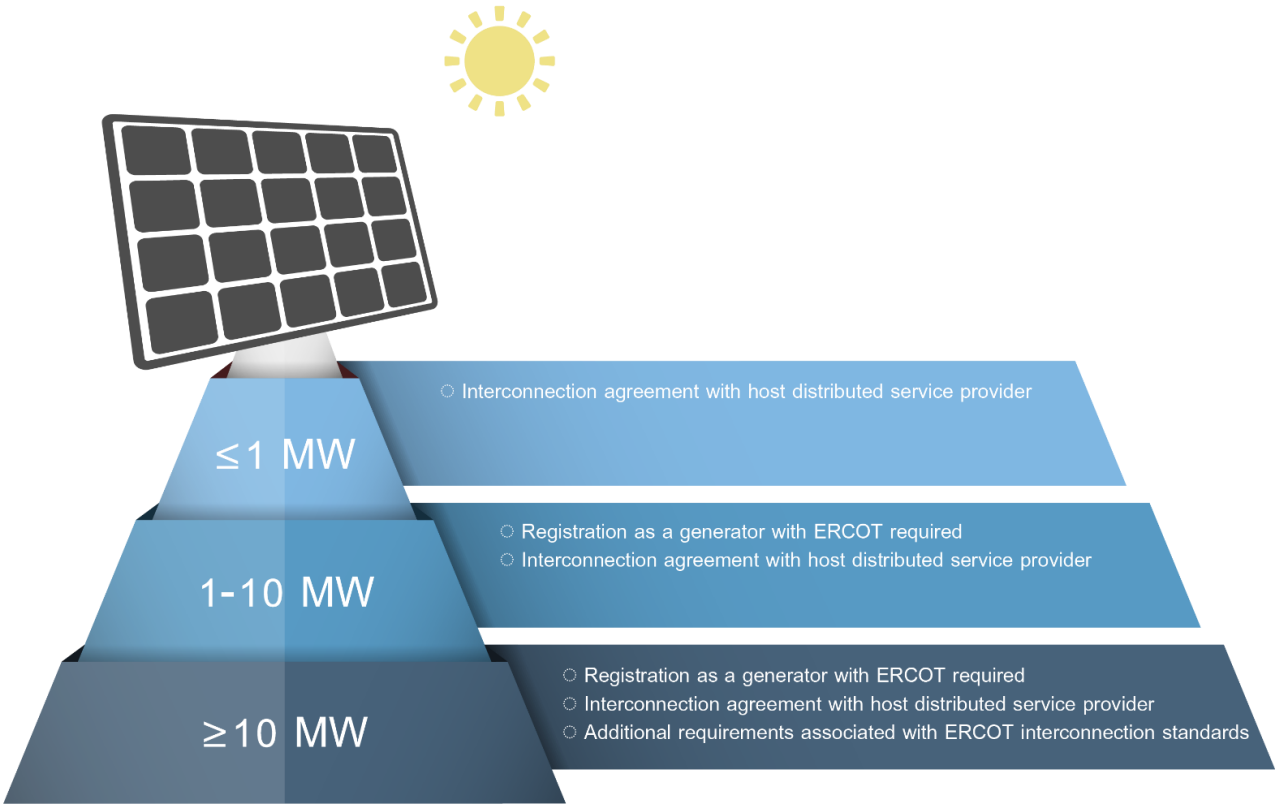
Registration requirements

A DG resource of one megawatt (MW) or greater is required to be registered with ERCOT in accordance with Section 16.5 of ERCOT Nodal Protocols. If the DG Resource is ≥ one MW and will supply net power onto the ERCOT System, the owner of the DG resource should complete the following actions:iv

- Complete interconnection requirements with host Distribution Service Provider (DSP).
- Submit the Resource Entity Registration Form to ERCOT
- If metering is ERCOT-polled (meaning ERCOT reads the meter), complete the design and installation of an ERCOT Polled Settlement meter. Refer to the Settlement Metering Operating Guide for more information.
- If metering is read by the Transmission/Distribution Service Provider (TDSP), not ERCOT-polled, then the Resource Entity contacts the TDSP to request copy of a completed TDSP Read Generation Registration Form and submit to ERCOT along with the Distributed Resource Registration Form.
- Submit the Distributed Resource Registration Form to ERCOT. Designate a registered load serving entity to serve the generation facility during "net load" conditions.
- Designate and acknowledge a Qualified Scheduling Entity to financially settle with ERCOT in advance of injecting power onto the ERCOT System.

If a DG resource of ≥ ten MW is going to supply net power to the grid, ERCOT requires a more regimented interconnection process in addition to registration requirements. While the PUCT requires no regulatory actions from munis and co-ops, PUCT resources regulating electric service providers can and have been used by nonprofit utilities to guide decision making when developing a distributed generation resource. The sections below, from Chapter 25. Substantive Rules Applicable to Electric Service Providers, may be useful when considering the development of a community solar program:v

- Section 25.109 – Registration of Power Generation Companies and Self Generators
- Section 25.211 – Interconnection of On-Site Distributed Generation (DG)
- Section 25.213 – Metering for Distributed Renewable Generation and Certain Qualifying Facilities
- Section 25.217 – Distributed Renewable Generation



Potential solar offerings

Utilities can make solar accessible to their customers by encouraging customers to install rooftop systems via financial incentives or by selling customers solar electricity generated from a utility-scale solar system. Many variations of these two options are in use in Texas. Utilities, for example, incentive commercial and residential rooftop installations with rebates and loans. On the other hand, many utilities choose to retain control of solar generation and offer solar to their customers via a community solar or power purchase agreement arrangement. Each solar offer is described below.

Rooftop Solar Financial Incentives

Rebates

Rebates are a form of financial incentive where customers are refunded a portion of their investment after the system has been approved and constructed. Rebate amounts will be based on the number of watts installed. For instance, CPS Energy (serving the San Antonio area) provides rebates that range from $.80/W to $1.20/W.[vi]

Loans

To offset initial up-front costs rooftop PV installations, some utilities will offer customers loans. Pedernales Electric Cooperative offers such loans to assist customers with financing, with a repayment period of ten years.[vii]

Financial Tools for Utility-scale PV system

To retain control of distributed generation and its revenue base, utilities may decide to sell customers solar power from a utility-scale solar system instead of incentivizing rooftop solar installations. Utility-scale DG solar projects are becoming popular across Texas and are beginning to be built as community solar projects (link to community solar). Many options exist to finance and develop utility-scale DG projects such as Power Purchase Agreements, USDA funding, the Federal Investment Tax Credit, and accelerated asset depreciation.

Power Purchase Agreements

A power purchase agreement (PPA) is a contract to buy electricity generated by a utility-scale system or sell excess electricity to a power provider. Use of a PPA is relatively risk-free as the developer will be responsible for financing, contracting, operating, and maintaining the system, while the utility's principle obligation is to purchase all generated power at the negotiated price. PPAs are common and are being used by CPS Energy and Austin Energy's community solar programs.

USDA Rural Energy Affordability Program

The US Department of Agriculture (USDA) provides grants to utilities in rural communities to help finance renewable energy projects, including solar. Grants range from $2,500 to $500,000, and can cover up to 25 percent of the project cost. More information can be found here.

USDA Energy Efficiency Conservation Loan Program

The Energy Efficiency and Conservation Loan Program (EECLP) provides loans to finance energy efficiency and conservation projects for commercial, industrial, and residential consumers. With the EECLP, eligible utilities, including existing Rural Utilities Service borrowers can borrow money tied to Treasury rates of interest and re-lend the money to develop new and diverse energy service products within their service territories. For instance, borrowers could set up on-bill financing programs whereby customers in their service territories implement energy efficiency measures behind the meter and repay the loan to the distribution utility through their electric bills. More information can be found here.

USDA Rural Cooperative Development Grant Program

The objective of the Rural Cooperative Development Grant Program (RCDGP) is to improve the economic condition of rural areas by assisting nonprofits and businesses in the startup, expansion or operational improvement of rural cooperatives and other mutually-owned businesses through Cooperative Development Centers. Grants are awarded through a national competition, with a maximum award amount of $200,000. More information can be found here.

Federal Investment Tax Credits

Tax credits reduce the cost of installing a solar system and ultimately make the electricity more affordable. Use of tax credits require an adequate tax appetite and are not available to nonprofits. For nonprofit utilities, the Investment Tax Credits (ITC) is typically monetized by a for-profit subsidiary, a financing entity, or through a PPA. The ITC has been extended through the end of 2019 and there is no limit to the maximum tax credit. For more information, see the US Department of Energy's fact sheet or the Database of State Incentives for Renewables and Efficiency (DSIRE) program overview. To claim the investment credit, please see directions provided by the Internal Revenue Service (IRS) on how to complete Form 3648.

Modified Accelerated Cost-Recovery System

Modified Accelerated Cost-Recovery System (MACRS) is a beneficial tax program allowing for quicker asset depreciation for qualifying solar equipment. For more information, see the IRS resource on MACRS.

Database of State Incentives for Renewables and Efficiency

DSIRE is a comprehensive resource that provides information on incentives and policies that support renewable energy and energy efficiency in the United States. It is searchable by state. To learn more about policies and incentives in Texas, visit DSIRE.

Technical Assistance

Technical assistance is available from national and state resources:

Texas-Specific Resources

- Texas Public Power Association (TPPA)
- Texas Renewable Energies Industries Alliance
- Texas Solar Energy Society

National Resources

- National Rural Electric Cooperative Association Solar Utility Network Deployment Acceleration Project
- National Renewable Energy Laboratory Utility Solar Technical Assistance program

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i Testimony of the Texas Public Power Association (TPPA) to the Senate Business & Commerce Committee, July 2012
ii Texas Comptroller, The Energy Report 2008, Chapter 27-- Electricity
iii Public Utility Commission of Texas (PUCT); Distributed Generation Interconnection Manual, 2002
iv Electric Reliability Council of Texas (ERCOT);Registration and Qualifications: Resource Entities, July 2016
v Public Utility Commission of Texas (PUCT); Electric Substantive Rules, Chapter 25
vi CPS Energy, Solar PV System Program [Rebate] Application Process
vii Pedernales Electric Cooperative, PEC Empower Loans