



July 8, 2024 | City of Denton | Value of Solar

DENTON MUNICIPAL ELECTRIC VALUE OF SOLAR STUDY



OBJECTIVES

- Methodologies
- Avoided Cost Findings
- Societal Benefits Findings
- Policy Driven Incentives Findings
- Summary of Findings
- Bill Impacts – Average Residential vs. Solar
- Staff Recommendation
- Questions



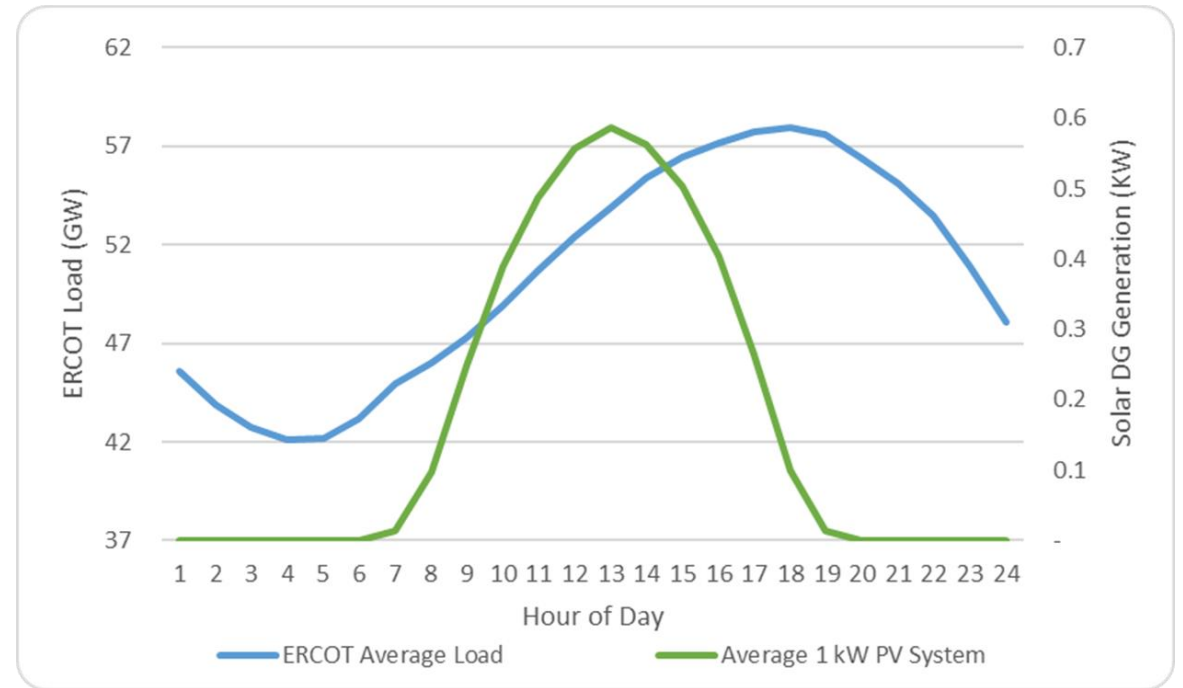
Avoided Cost	Societal Benefits	Policy Driven Incentives
Cost DME avoids by not having to generate or purchase power	Theoretical benefits to society of rooftop solar, including avoidance of GHGs and other emissions associated with fossil fuels	Can be considered to encourage the adoption of rooftop solar
Energy Costs: DME's Solar PPAs	DME is 100% Renewable	Local, State, and Federal Policies can be leveraged
Energy Costs: ERCOT market based pricing	No Fed or State Market for GHGs although there have been some proxies developed; \$0.01 to \$0.08 per kWh depending on the study source	City Policy drove the goal for DME to be 100% Renewable
Capacity Costs: Building new equipment to meet load		DME incentivized rooftop solar growth through aggressive rebate and net billing programs over the last 14 years

VALUE OF SOLAR METHODOLOGY

Represents energy purchased from a customer that is valued above the Avoided Cost based on the utility's policies

AVOIDED COST FINDINGS

Avoided Cost Component	Avoided Cost: ERCOT Mkt (\$/kWh)	Avoided Cost: DME Solar PPAs (\$/kWh)
ERCOT Energy	\$0.0524	N/A
ERCOT Ancillary	\$0.0044	N/A
Solar PPA	N/A	\$0.0244
ERCOT Transmission	\$0.0135	\$0.0135
Generation Capacity	\$0.0000	\$0.0000
Distribution Capacity	<u>\$0.0000</u>	<u>\$0.0000</u>
Avoided Cost for Solar DG	\$0.0702	\$0.0379



SOCIETAL BENEFITS FINDINGS

- Proxy Range:
 - \$14.88 to \$190 per ton depending on the study.
 - Equivalent to \$0.01 to \$0.08 per kWh.
- DME purchases 100% renewable power.
 - The DME cost of carbon is already being mitigated with DME's power supply strategy of 100% renewables.
 - DG does not offer any additional value in this context.
- Recommendations:
 - Recommend the Societal Benefit for solar DG for DME be set to \$0.00/kWh.
 - City Council may make the policy decision to include societal benefits in the Value of Solar rate.

POLICY DRIVEN INCENTIVES FINDINGS

- Federal Policies: Inflation Reduction Act
- State Policies: Property tax exemption
- City of Denton and DME Policies do not require local solar
- Recommendations:
 - No requirement for local renewable generation.
 - Recommend the Incentive for solar DG for DME be set to \$0.00/kWh.
- Options to support local renewables, outside of the Value of Solar:
 - Streamline the installation process, permits, and inspections.
 - Waive application or connection fees.
 - Provide grants or rebates to customers.
 - Provide low-cost loans for installation.

SUMMARY OF FINDINGS

- **Avoided Costs:**
 - Range of \$0.0379 to \$0.0702 per kWh is reasonable.
 - DME’s current Renewable Cost Adjustment (RCA) at \$0.0381 per kWh is reasonable.
- **Societal Benefits:**
 - Policy Decision for City Council (to incentivize solar DG).
 - Current DME carbon emissions are neutralized by 100% renewable energy.
- **Policy Driven Incentives:**
 - Policy Decision for City Council (to incentivize solar DG).
 - Current adopted policies do not require local solar generation.

Components	Avoided Cost: ERCOT Mkt (\$/kWh)	Avoided Cost: DME Solar PPAs (\$/kWh)
Avoided Cost	\$0.0702	\$0.0379
Societal Benefits	\$0.0000	\$0.0000
Policy Driven Incentives	<u>\$0.0000</u>	<u>\$0.0000</u>
Total	\$0.0702	\$0.0379

BILL IMPACTS

Average Residential Customer (2023)	Units	Non-Solar Customer	Net Billing Customer	Avoided Cost: DME PPA	Avoided Cost: ERCOT Mkt
Usage					
Bi-Directional Net Energy Used	kWh	1,365	1,365	1,365	1,365
Bi-Directional Net Energy Sold	kWh	N/A	(390)	(390)	(390)
Rates					
Bi-Directional Net Energy Used	\$/kWh	\$0.06840	\$0.06840	\$0.06840	\$0.06840
Bi-Directional Net Energy Sold	\$/kWh	N/A	\$0.06840	\$0.03790	\$0.07020
ECA/TCRF	\$/kWh	\$0.05820	\$0.05820	\$0.05820	\$0.05820
RCA	\$/kWh	N/A	\$0.03810	N/A	N/A
Facility Charge	\$/month	\$8.67	\$8.67	\$8.67	\$8.67
Monthly Bill					
Bi-Directional Net Energy Used	\$	\$93.37	\$93.37	\$93.37	\$93.37
Bi-Directional Net Energy Sold	\$	N/A	(\$26.68)	(\$14.78)	(\$27.38)
ECA/TCRF	\$	\$79.44	\$79.44	\$79.44	\$79.44
RCA	\$	NA	(\$14.86)	N/A	N/A
Facility Charge	\$	<u>\$8.67</u>	<u>\$8.67</u>	<u>\$8.67</u>	<u>\$8.67</u>
Total Monthly Bill		\$181.48	\$139.94	\$166.70	\$154.10
Annual Savings from Current				\$463,069	\$236,040

STAFF RECOMMENDATIONS

- Recommendations:

1. Implementing the Avoided Cost Method based on DME Solar PPAs rate of \$0.0379/kWh effective 10/1/2024.
2. Transfer estimated annual savings of \$463,069 to GreenSense Incentives program. GreenSense budget will increase from \$1 million to \$1.46 million.



QUESTIONS?

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