

# **City of Scottsbluff, Nebraska**

**Monday, August 29, 2016**

**Regular Meeting**

## **Item Public Inp1**

**Council to receive a presentation from NPPD and consider action on the Solar Project.**

**Staff Contact: Nathan Johnson, City Manager**

# Scottsbluff Community Solar Project

Scottsbluff City Council Meeting  
August 29, 2016

Tim Arlt - Retail General Manager



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# ☰ Scottsbluff Community Solar Review

- NPPD Board Approved Community Solar Rate Schedule
- Solar Developer (Mesner Development Corporation LLC) has hired a solar installer (GenPro)
- USDA REAP Grants and State Incentives for Renewables
- Waiting for Environmental Phase I results
- Project size opportunity
- Agreements

# Community Solar Program Parameters

- **Eligibility** - Most Retail Customers within Community, including City / Village accounts
  - Exclusion include Lighting accounts and customers with their own generation
- **Participation Level** - Solar Energy Shares
  - Minimum: 1 Solar Energy Share - equal to 150 kWh/month of solar energy
  - Maximum: Number of solar energy shares purchased equal to 80% of 1-year annual consumption
    - Example: Average residential customer with 1,000 kWh/month usage could buy up to 5 solar energy shares - 750 kWh
  - NPPD reserves the right to limit the maximum for commercial and industrial customers
- **Program Length**
  - Minimum: One month - customer can exit program at anytime
  - Maximum: Term length of Power Purchase Agreement (PPA)
- **Enrollment Fee** - \$50 refundable on 3-year anniversary date
- **Portability** - Solar participation transferrable within community for enrolled customer. Participation terminated upon relocation out of community without a community solar project

# Community Solar Program – Rate & Billing

- Customer continues to take service under their standard retail rate schedule, and is charged for their total monthly usage at such rate
- For Solar Energy Shares purchased, the cost of solar energy replaces the generation cost included in the bundled retail rate schedule
  - **Solar Energy Charge:** Pass-through at Power Purchase Agreement (PPA) Price between NPPD and developer
    - Fixed price or escalating price, dependent upon the PPA
    - Likely will be different rate for each community
  - **Base Energy Credit:** 5.8 cents/kWh credit reflecting the average cost of generation included in the current residential rate
    - Credit rate will be updated each time standard residential rate is changed
    - Same rate applies to all communities
  - Lease Payment and Gross Revenue Tax apply to both of the above, while rate discounts do not apply

# Scottsbluff Community Solar Opportunity

- Solar Developer applied for Rural Energy for America Program (REAP) Grant for Project
  - Unsuccessful in landing REAP Grant
  - The project will be resubmitted annual for potential REAP grant
- No State incentives for renewables are available at this time
- Both of these item impact PPA Cost
- Developer/Installer indicated that they can get 150 kW AC project on the proposed site
  - Likely drive the cost of the PPA downward
- Would City consider expanding project to 150 kW AC?
  - New City risk analysis @ 150 kW AC (attached)

**Scottsbluff PV Solar Risk analysis - (Estimate)**  
**(PV Solar PPA - NPPD Retail Avoided Cost)**

		year	2017	2021	2026	2031	2036
For <b>100 kW</b> PV Solar project - singel axis tracking	PV Solar	kWh/yr	227,760	223,239	217,713	212,325	207,069
Annual panel degredation	0.5%						
<b>PPA proposal</b>	0.0%	esc/year					
Mesner PPA	<b>\$0.075</b>	/kWh	\$ 0.075	\$ 0.075	\$ 0.075	\$ 0.075	\$ 0.075
Base Energy Credit Escalation	0.5%	esc/year					
<b>Base Energy Credit</b>	<b>\$0.058</b>	/kWh	\$ 0.058	\$ 0.059	\$ 0.061	\$ 0.062	\$ 0.064
<b>Difference (PPA proposal - Base Energy Credit)</b>							
Mesner PPA - Base Energy Credit			\$ 0.017	\$ 0.016	\$ 0.015	\$ 0.013	\$ 0.012
<b>Annual cost</b>							
Total Annual PPA - Base Energy Credit cost Dollars			\$ 3,871.92	\$ 3,617.87	\$ 3,203.04	\$ 2,798.52	\$ 2,404.05
If zero subscriptions to the Community Solar are allotted.							
kW	Cap Factor	kWh					
100	0.26	227,760	NPPD PPA Cost: \$ 17,082.00	\$ 16,826.63	\$ 16,410.15	\$ 16,003.98	\$ 15,607.86

\* Capacity factor comes from NREL PV watts calculator for single axis AC rated system



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**Scottsbluff PV Solar Risk analysis - (Estimate)**  
**(PV Solar PPA - NPPD Retail Avoided Cost)**

		year	2017	2021	2026	2031	2036	
For <b>150 kW</b> PV Solar project - singel axis tracking	PV Solar kWh/yr		341,640	334,858	326,570	318,487	310,604	
Annual panel degradation	0.5%							
<b>PPA proposal</b>	0.0%	esc/year						
Mesner PPA	<b>\$0.075</b> /kWh		\$ 0.075	\$ 0.075	\$ 0.075	\$ 0.075	\$ 0.075	
Base Energy Credit Escalation	0.5%	esc/year						
<b>Base Energy Credit</b>	<b>\$0.058</b> /kWh		\$ 0.058	\$ 0.059	\$ 0.061	\$ 0.062	\$ 0.064	
<b>Difference (PPA proposal - Base Energy Credit)</b>								
Mesner PPA - Base Energy Credit			\$ 0.017	\$ 0.016	\$ 0.015	\$ 0.013	\$ 0.012	
<b>Annual cost</b>								
Total Annual PPA - Base Energy Credit cost Dollars			\$ 5,807.88	\$ 5,426.80	\$ 4,804.56	\$ 4,197.78	\$ 3,606.08	
If zero subscriptions to the Community Solar are allotted.								
kW	Cap Factor	kWh						
150	0.26	341,640	NPPD PPA Cost:	\$ 25,623.00	\$ 25,239.94	\$ 24,615.22	\$ 24,005.97	\$ 23,411.79
* Capacity factor comes from NREL PV watts calculator for single axis AC rated system								



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# Community Solar Program Agreements

- **NPPD / Developer Power Purchase Agreement (PPA)**
  - Stipulates term, security, price of energy, etc. NPPD / Developer Power Purchase Agreement (PPA)
- **NPPD / Developer Generation Interconnection Agreement (GIA)**
  - Stipulates the terms of the interconnection between generator and NPPD facilities
- **NPPD / Community Solar Agreement**
  - Necessary to minimize cost shifting to non-participating Retail customers/ communities
  - Stipulate the level of which the community and end-use customers have priority to solar shares . City can assign solar shares to City Accounts.
  - Any remaining unsubscribed shares would be a line item on the City of Scottsbluff bill. The difference between the Base Energy Credit as defined in the Community Solar Energy Rider Rate Schedule and the cost of the solar energy as defined as the PPA price
- **NPPD / City of Scottsbluff - Professional Retail Operation (PRO) Agreement Extension**
  - Necessary to tie the terms of the Community Solar Agreement together with the Pro agreement so neither the City or NPPD is out of alignment with either agreement.
- **NPPD / End-use Customer Community Solar Service Agreement**
  - Stipulates the terms and conditions the end-use customer accepts as a community solar shares participant
    - Eligibility, participation level, program length, enrollment, portability, price, etc.

# Questions?



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