



# LES's Solar Program Portfolio

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# LES Solar Program Portfolio – 2013

Net-metering program; originally launched in 2007

Solar installation by individual customer, limited to 100 kW

Energy production offset consumption at Retail Rate, earned Renewable Avoided Cost (4.7 ¢/kWh) for net generation/month

Included one-time capacity payment of \$500/kW for 55% of DC nameplate rating (\$275/kW<sub>DC</sub>)





# The Challenge...

**Could LES provide additional incentives and opportunities for potential solar customers without placing an undue burden on the entire customer base?**

Methodology:

- 1) Identify true value of distributed solar in order to develop a reference for measuring incentives
- 2) Revisit current net-metering rate to see how it could better support customer-owned generation
- 3) Try to develop a way for customers “without a roof” to contribute to a solar program



# Value of Solar Study – Scope

Quantify true system benefits/costs of distributed solar photovoltaics, including:

- Energy
- Transmission Capacity
- Transmission Losses
- Generation Capacity
- Distribution Capacity
- Distribution Losses
- Environmental

Full study presentation available at [www.les.com](http://www.les.com)



## Value of Solar Study – Conclusions

Analysis showed about 3.7 ¢/kWh to be fair energy value for customer installed, distributed photovoltaic solar, assuming:

- 20 year feed-in-tariff type, fixed rate
- No related capacity payment

Assuming 2.2% annual escalation as opposed to fixed rate, solar rate ranged from 3.1 ¢/kWh in 2014 to 4.7 ¢/kWh in 2033

Relative to 3.1 ¢/kWh, LES's 2014 net-metering rates appeared to provide a valuable incentive to solar customers:

- 9.95¢/kWh summer, 5.73¢/kWh winter for net consumption
- 4.7¢/kWh for net generation
- Additional one-time capacity payment of \$275/kWDC



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# Renewable Rates – Structure

Reduced net-metering limit from 100 kW to 25 kW:

- Consistent with State Statute
- Better aligned with the size of typical installations

Developed new Renewable Generation Rate for installations between 25 kW and 100 kW:

- Includes dedicated metering for larger scale generation
- Provides a structure that better accommodates multiple participants
- Applies fixed customer charges that include full distribution system component, more accurately reflecting system impacts

# Renewable Rates – Energy Payment

Customer load offset by generation continues to effectively earn the Retail Rate for energy

Instead of Renewable Avoided Cost (4.7 ¢/kWh), excess generation earns energy rate based on tiered structure:

Program Level	Total Customer Renewables	Energy Payment (\$/kW <sub>AC</sub> )
Tier I	< 1 MW	Residential Retail Rate
Tier II	1 MW – 2 MW	½ Residential Retail Rate
Tier III	> 2MW	TBD

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Rate guaranteed at least 10 years, regardless of program level



# Renewable Rates – Capacity Payment

Increased generation capacity value from  $\$500/\text{kW}_{\text{AC}}$  to  $\$1,000/\text{kW}_{\text{AC}}$

- Based on overnight construction cost of conventional combustion turbine

Applying  $\$1,000/\text{kW}_{\text{AC}}$  to modeled solar output increased payment from  $\$275/\text{kW}_{\text{DC}}$  to:

- $\$375/\text{kW}_{\text{DC}}$  for predominantly southern facing
- $\$475/\text{kW}_{\text{DC}}$  for predominantly western facing
- $\$475/\text{kW}_{\text{DC}}$  for “tracking” installations
- $\$0/\text{kW}_{\text{DC}}$  for other orientations



# Renewable Rates – Summary

Revised rates provide value to renewable customers:

- Pay higher capacity payment for beneficial systems
- Pay Residential Retail Rate for net-generation under Tier I, with reasonable price certainty for first 10 years

While at the same time minimizing impact to customer base:

- Capacity payment represents reasonable value for peak contribution, does not constitute incentive
- Tiered structure prevents uncontrolled financial impacts by managing total cost of incentivized energy payments
- Assigns representative customer charge to “generation only” installations



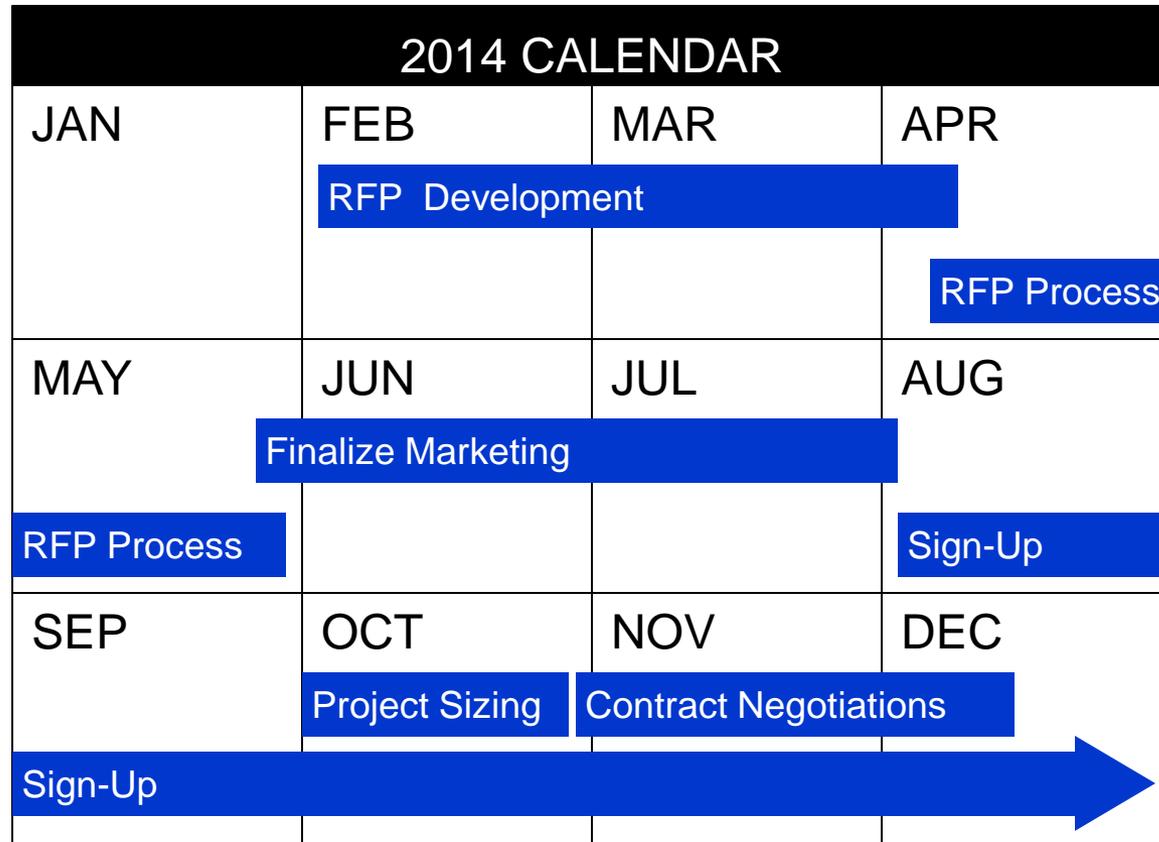
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# Community Solar Project Timeline



Commercial Operation Date (COD) no later than 12/31/2015





# Community Solar RFP – Base Proposal

Fixed, 20 year Power Purchase Agreement (PPA) for solar photovoltaic (PV) energy

Predefined sizes at Terry Bundy Generating Station (TBGS):

- 100 kW<sub>DC</sub>
- 250 kW<sub>DC</sub>
- 500 kW<sub>DC</sub>
- 1,000 kW<sub>DC</sub>
- 1,500 kW<sub>DC</sub>
- 2,000 kW<sub>DC</sub>

Optional one-time payment at COD based on renewable rates:

- \$375/kW<sub>DC</sub> for predominantly southern facing
- \$475/kW<sub>DC</sub> for predominantly western facing or tracking



# Community Solar RFP – Alternate Proposal

20 year Power Purchase Agreement (PPA) for solar photovoltaic energy with 2.5% annual escalation

No predefined sizes or location, although LES preferred:

- Maximum of 10,000 kW<sub>DC</sub>
- Location in or around Lincoln, NE



# Community Solar RFP – Evaluation

Received 14 responses encompassing 78 different proposals due to allowed variations in pricing structure, size, and location

Evaluation included technical and economic analysis, accounting for:

- Respondent capabilities and experience
- Any costs omitted from the proposal
- Any LES system upgrade costs required to support the project
- Losses incurred to transmit energy from the project site to the LES distribution substation

Based on this analysis, LES named short list of nine respondents with the most technically and economically viable proposals

The logo for LES SunShares features the word "LES" in a bold, orange, italicized sans-serif font. To its right is a stylized sun icon with orange rays, followed by the word "SunShares" in a bold, orange, sans-serif font. A thin orange horizontal line is positioned below the entire logo.

# LES SunShares

Community-funded solar project

Voluntary “opt in” program, for as little as \$3/month

Monthly contributions made through LES bill, and participants can “opt out” at any time

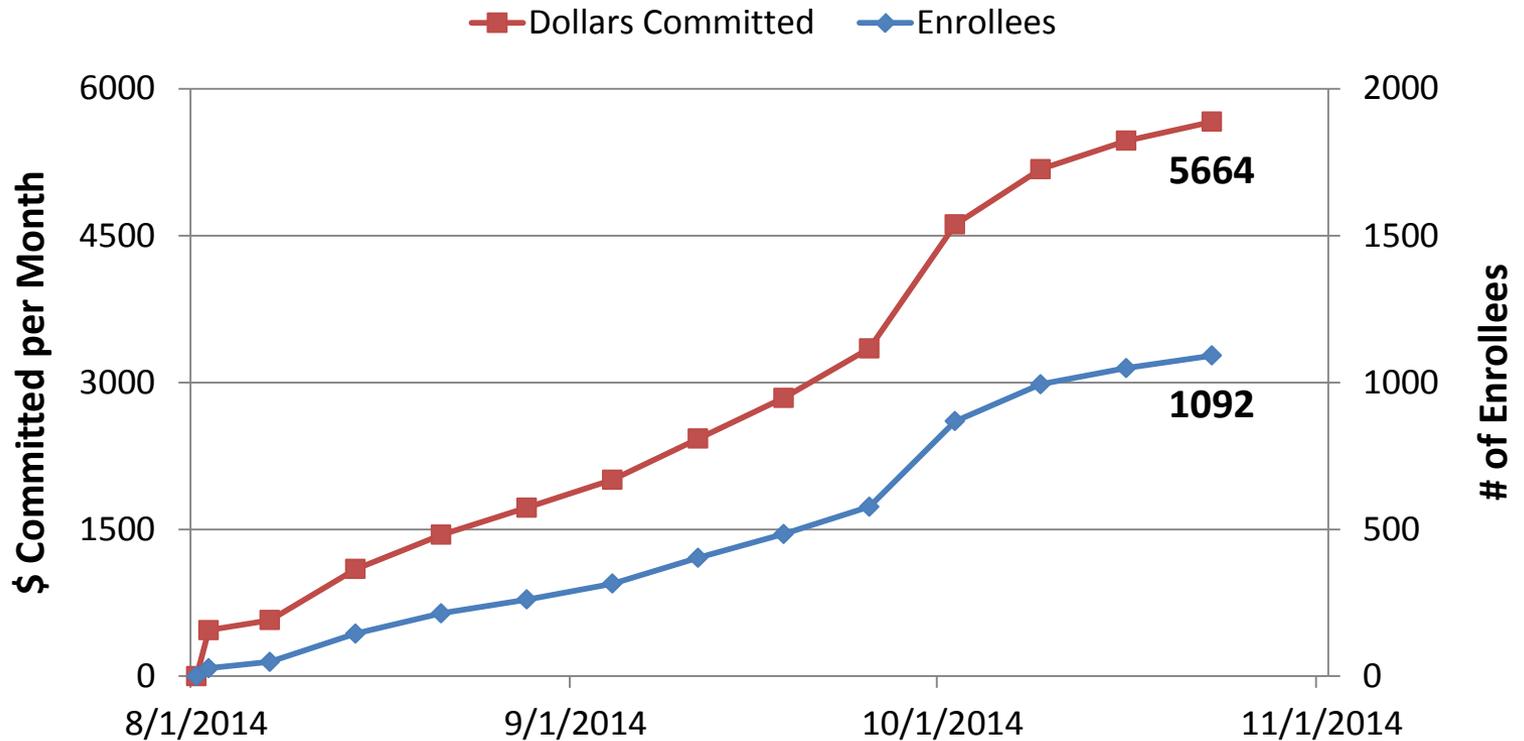
Allows LES customers to support local solar, even if:

- They don't own a roof
- Their roof is not optimally positioned for solar
- They don't have the upfront funds

Participants cover incremental cost beyond benefits, minimizing impact to non-participants

Community-funded solar project

## SunShares Enrollment





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# LES Solar Program Portfolio – 2014



## Net-Metering Rate

- 0 – 25 kW; customer-owned
- Offsets consumption at retail rate
- Incentivized rate for net generation; max exposure limited under tier system
- Fair one-time capacity payment



## Renewable Generation Rate

- 25 – 100 kW; customer or group-owned
- Incentivized rate for net generation; max exposure limited under tier system
- Fair one-time capacity payment



## LES SunShares Community Solar

- Allows participation “without a roof”
- Voluntary “opt in” program; little as \$3/mo.
- Participants cover costs beyond benefits



Thank you!

