

Pricing Models of Interest for Utility-Driven Community Solar Programs

Utility Program Name	Pricing Model ⁱ	Rate or Billing Structure ⁱⁱ	Long-term Utility View	Competitive Impact, including Customer Monthly Bill
Tucson Electric Power, Bright Tucson Community Solar Program	Flat Rate: \$3/Month for 150 kWh	Term: 20 years from contract signing; Customers can cancel their program participation at any time; RECs: TEP owns them	Program premium allows TEP to raise money to build solar projects and use RECs to meet required RPS.	Pricing assumes most people will spend a few extra dollars to support solar. The current retail rate is about \$0.10/kWh, so asking customers to pay an extra 20% or \$0.12/kWh was considered a reasonable premium.
Tucson Electric Power, Hybrid Residential Community Solar Program	Flat Rate: \$17.50/Month per kW block	Term: 10 years; RECs: TEP owns them	Utility may not recover all costs, but aims for customer retention. The new Community Solar Rate was still under Arizona regulatory review in 1/2016.	Rate designed to be very similar to customer's bill; TEP subsidizes program as it provides customers with a solar option other than purchasing their own NEM system. Community solar program is much less of a cost shift than NEM.
Sacramento Municipal Utility District, Solar Shares Program (Revised)	Flat Rate: \$/kWh * number of kWh purchased that month. Customers can purchase solar energy in annual blocks of 500 kWh. The customer's monthly kWh purchase will be allocated as a percentage of annual PV generation based on the seasonal generation pattern of PV systems within SMUD's service area. Rate information (\$/kWh) for revised program will be available no later than	Customer's Price: Energy Cost Component + Delivery Service Cost Component <ul style="list-style-type: none"> • Energy Cost Component = average cost of energy from all SolarShares installations. This portion of the rate is fixed on the date the customer enrolls in the program. Energy cost component could decrease over time as more solar projects are added to the program. • Delivery Service Cost Component = Based on delivery costs normally 	If the SolarShares® allocation exceeds the customer's usage for a specific time-of-use period, the excess will appear on the bill as a dollar credit based on the value of the energy-only portion of the customer's standard rate during that period. If this dollar credit exceeds the customer's energy charges for the month the credit occurs, the remaining unused portion will be carried	To be determined once the \$/kWh rate is set.

	<p>1/1/2017 on the SMUD website.</p>	<p>included in the customer's standard rate. Charges are not fixed and may adjust with changes to the standard rates (e.g. Generation capacity, Ancillary services, Delivery services (transmission and distribution), Public goods, Fixed distribution facilities recovered in energy, Power factor adjustments, Program administration)</p> <p>Pricing information will be available no later than 1/1/2017 on the SMUD website.</p> <p>RECs: SMUD retires them on customer's behalf.</p>	<p>over to the succeeding month's energy charges until the credit is fully utilized.</p> <p>If the SolarShares® allocation over a 12-month period exceeds the customer's usage, SMUD will buy the unused portion back at the price the customer paid for the energy only portion of SolarShares® and will adjust down the customer's allowed share for the next 12-month period.</p>	
<p>Pacific Gas & Electric, Green Tariff Shared Renewables Program (GTSR)</p>	<p>Flat Rate: \$/kWh</p> <p>The new GT and ECR electric rate schedules are available in Advice Letter 4639-E-A.</p>	<p>Green Tariff (GT): Subscribe 50% or 100% of their electricity from a pool of small and mid-sized solar projects created for this program in PG&E's service territory.</p> <p>Enhanced Community Renewables (ECR): Make a separate agreement with a solar developer to buy subscription rights for a selected portion of a local solar project's output.</p> <p>Term: Customers can un-enroll and change participation levels at any time. Can't re-enroll or make other participation level changes for 12 months after un-enrolling.</p> <p>RECs: PG&E retires them on the customer's behalf.</p>	<p>GT rate is based on portfolio of projects; ECR rate is based on customer's agreement with the developer.</p> <p>Utility must recover all costs from customers participating in the GTSR program.</p>	<p>The program is expected to have an initial 2-4 cent per kWh premium that may diminish over time if PG&E's overall generation costs increase.</p> <p>Program is in response to SB 43.</p>

<p>CEC Solar Perks and NexAmp Solarize My Bill, National Grid and Eversource</p>	<p>Flat Rate: \$/kWh</p> <p>Multiple programs available in MA.</p>	<p>Term: 20 years</p> <p>RECs: Sold in open market. Community solar RECs classify as Class A SRECs so receive 100% of the SREC value.</p>	<p>Program not endorsed by the MA utilities; it is run completely by third parties. <i>The market has slowed since MA SREC market has reached capacity.</i></p> <p>Utility provides full NEM credit to the third party that owns the system. TPO provides a savings over original retail rate (specified in customer – third party contract) to the customer. CEC provides 5% savings. NextAmp provides a 15% credit. Other programs are less transparent.</p>	<p>Customers pay \$0 upfront.</p> <p>CEC: 5% savings compared to monthly bill for 20 years.</p> <p>NextAmp: 15% savings compared to monthly bill for 20 years.</p>
<p>Salt River Project, EarthWise Community Solar Project</p>	<p>Customers purchase community solar in 1 kW blocks (kW) and received monthly generation per block (kWh/block). Customer’s purchase the kWhs generated each month from the blocks they own.</p> <p>SRP customers can offset up to 50% of annual usage from a local solar plant. Customers’ past 12 months usage determines appropriate kW allocation. Customer qualifies for 1 kW for each 5,000 kWh of annual energy usage.</p>	<p>Term: Each block replaces an equivalent amount of traditional power at a fixed price for 5 years. Agreement can be transferred to new location if customer moves within SRP territory. Customers can cancel anytime but cannot re-enroll for 12 months after cancelling. Customers can add or drop kW block(s) once every 12 months.</p> <p>Customers pay per kWh for electricity generated by their block of the system. Residential customers pay \$0.099/kWh and commercial and school customers pay \$0.089/kWh.</p> <p>RECs: SRP owns them.</p>	<p>Since March 2015, the program has been closed to new enrollment. No information is currently available about the program redesign.</p>	<p>Program offers a savings for customers on Basic and EZ3 price plans. Time-of-Use price plan customers pay a slight premium.</p> <p>Average SRP customer uses 15,000 kWh annually so is eligible for a 3 kW system. Sample customer savings/loss program:</p> <ul style="list-style-type: none"> • Basic: \$5.03/yr. savings • EZ3: \$30.10/yr. savings • TOU: \$42.15/yr. premium
<p>Xcel Energy, Solar Connect</p>	<p>Flat rate program cost: Depends on the Garden Operator offer. Some projects are structured based on capacity purchases (\$/kW or</p>	<p>Term: 25 years, customer’s exit/transfer depends on their contract with the Garden Operator, which Xcel doesn’t have insight into. The Garden Operator</p>	<p>Colorado has an RFP every year for new PV systems. The most recent RFP awarded 29.5 MWs in contracts. Bidders were</p>	<p>Xcel does not know the true cost to customers because customers purchase project subscriptions directly from Garden Operators (private</p>

	<p>\$/panel upfront) while other projects are rate purchases (\$/kWh)</p> <p>Standard Bill Credit rate: Applicable retail rate in effect at the time of energy generation</p> <p>MN resident = \$0.147/kWh; CO resident = ~\$0.077/kWh</p> <p>Enhanced Bill Credit also includes Commission approved REC pricing.</p> <p>CO Bill Credits available here. MN Bill Credits available here.</p>	<p>can change their subscriptions as frequently as needed through the SRC Portal (CRM software system).</p> <p>RECs: In MN, the Garden Operator has the option to sell the RECs to Xcel, or keep it for their customers. If they sell it to Xcel, the customer's bill credit increases by about 2 cents. In Colorado, the RECs go to Xcel.</p>	<p>bidding negative REC prices to Xcel so their bid would get accepted. MN has an uncapped community solar program.</p> <p>In MN, projects have to have at least 5 subscribers, each with at least a 200W subscription and no subscriber owning more than 40% of the project; customer's share can't produce more than 120% of customer's historical usage; projects are capped at 1MW.</p> <p>In CO, projects must have at least 10 subscribers and no subscriber can own more than 40% of the project; customer's share can't produce more than 120% of customer's historical usage.</p>	<p>developers).</p> <p>CO developers are advertising a 10 year breakeven for upfront subscription purchases. MN developers are offering a solar services agreement with day 1 cash flow positive options.</p>
<p>Steele Waseca Electric Co-op, Sunna Project</p>	<p>Capacity purchase with companion benefits. Cost: \$170/ 410W panel; SWCE's 16-Hour Water Heater Program provides willing members with a 105-gallon electric water heater a no additional cost. Water heater is used for load shifting by the utility.</p>	<p>Monthly electric bill kWh credit for kWh produced by panels. IF credit exceeds monthly kWh usage, the unused credit rolls over to the next month.</p> <p>Term: 20 years; Subscription moves with customer within SWCE territory; if customer moves out of SWCE territory, they can transfer subscription to another member, sell subscription to another member or sell subscription back to SWCE. RECs: Owned by utility. Subscription: Maximum of 20 panels.</p>	<p>Uses solar coupled with HWHP to shift electric load to different points of the day.</p> <p>The costs associated with the solar array are paid for by those who enroll. SWCE's community solar eliminates the cost shifting that occurs with net metered renewable generation located out on SWCE's lines.</p>	<p>Customer compensation = Avoided cost * output of the panel</p>

NOTES: ⁱ A range of choices: a) Flat Rate \$/kWh or \$/block net estimated VNEM value; locked in (New TEP) b) Flat Rate with separate VNEM \$/kWh or \$/block + \$/kWh produced or \$/est. kWh produced c) Financed Purchase \$/share, includes financing cost (Solar Perks) d) Purchase with Companion Benefits (Steele-Waseca) e) Monthly Lease Payment with or without money down Note: Some of these will have a changeable portion of the customer bill (for example, relative to a changing distribution services (customer) charge). f) Rooftop TPO offer used as a benchmark g) rooftop self-financed purchase offer used as a benchmark. NOTE: Any of these may include periodic true-up for VNEM value if regulators require; any of the above may include a money-down (system buydown) payment.

ⁱⁱ Each may include different terms on length of program, exit or transfer rules, incentives available, REC ownership rules.