Approval to Amend Tariff and Business Rules – Interconnect Rate

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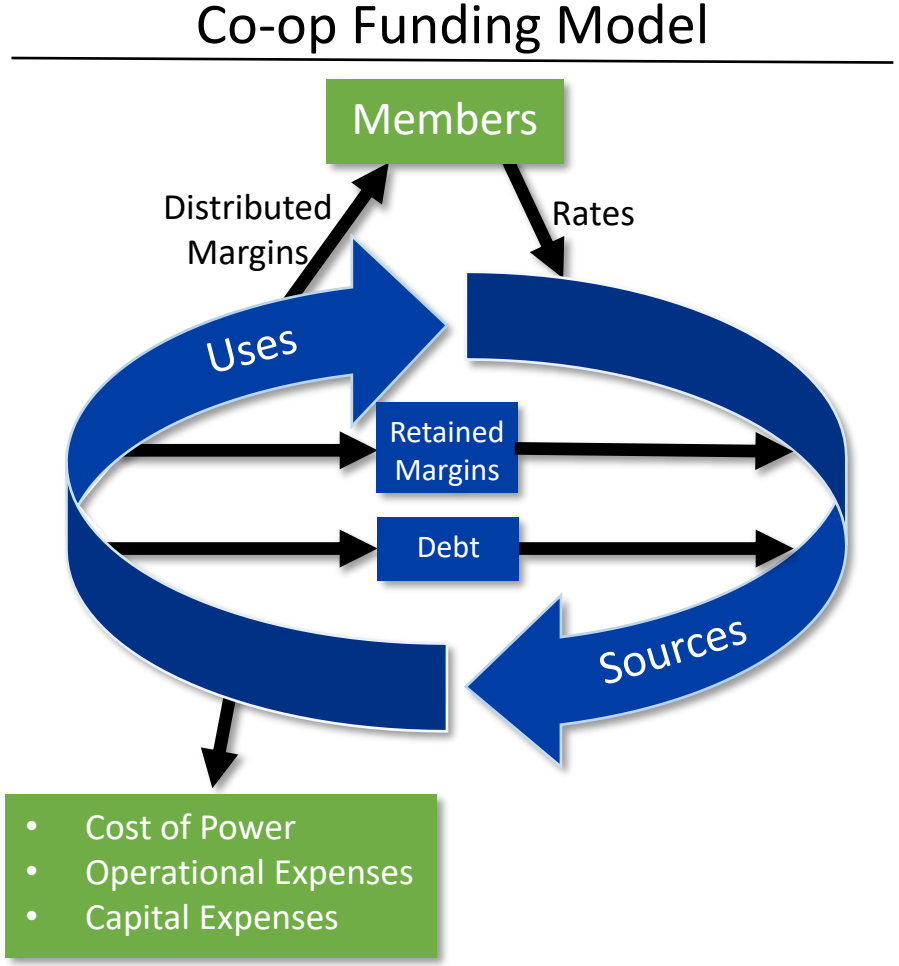
Co-op Model and Rate Design

Mission: Deliver low-cost, reliable, and safe energy for our members/customers

- Co-op model
  - PEC owned by the members/customers and all activities for the benefit of members
  - Over time member rates and fees provide the only source of funding and any margins not retained to fund PEC activities must ultimately be returned to the members
- Closed loop nature of funding means rates must be set based on actual cash costs incurred or cash benefits received otherwise subsidies between member classes are created
- Under the current solar rate structure, the cooperative has not been recovering the full cost to serve solar members, which has resulted in a shortfall of over $1.3 million per year



Solar Interconnect Rate Changes

BACKGROUND

- **April 2016** - Board approved interconnection rates for systems below 50 kW
  - At inception, limitations in the billing system, metering software and infrastructure greatly limited rate design options
- **November 2020** – In public session, PEC staff presented proposed rate changes for discussion
- **December 2020** - In public session, the Board approved a new rate design intended to reduce cost recovery inequities. Approved 12 months prior to approved effective date.
- **April 2021** - In public session, In response to member comments regarding changes to interconnection rates and fees, the PEC Board voted that no changes to the interconnect rates be made at this time. PEC staff was directed to hold meetings with members for their input. The board also asked staff to research other possible changes to ensure an equitable and sustainable rate, and to present a proposal at its July meeting
- **May – June 2021**
  - PEC held three virtual meetings with members, after work hours to ensure availability, to answer questions and discuss concerns and receive feedback
  - PEC staff met with solar installers and other stakeholders multiple times to discuss concerns and receive feedback

Solar Interconnect Rate Changes

BACKGROUND

- **May – June 2021 (cont.)** –
  - PEC provided a rate impact calculator integrated with member's historic billing
  - PEC provided a dedicated email address, DGInquiry@peci.com to field questions and feedback
  - PEC staff received and compiled significant feedback to provide to the PEC Board of Directors
  - PEC staff researched other possible rate changes to ensure an equitable and sustainable rate
- **July 2021** – In public session, taking into account member feedback, the Board rescinded the previously approved rate changes and requested a new rate design proposal that meets the requirements set out in Board Resolution #2021-312
- **October 2021** – In open session, PEC staff presented the 2022 rate plan that included guiding principles for the interconnect rate

- PEC procured consulting services to perform a value of solar study to determine an actual value per kW of solar from members.

Value of Solar Study

To determine the appropriate value of the energy generated by our members a Value of Solar Study was completed

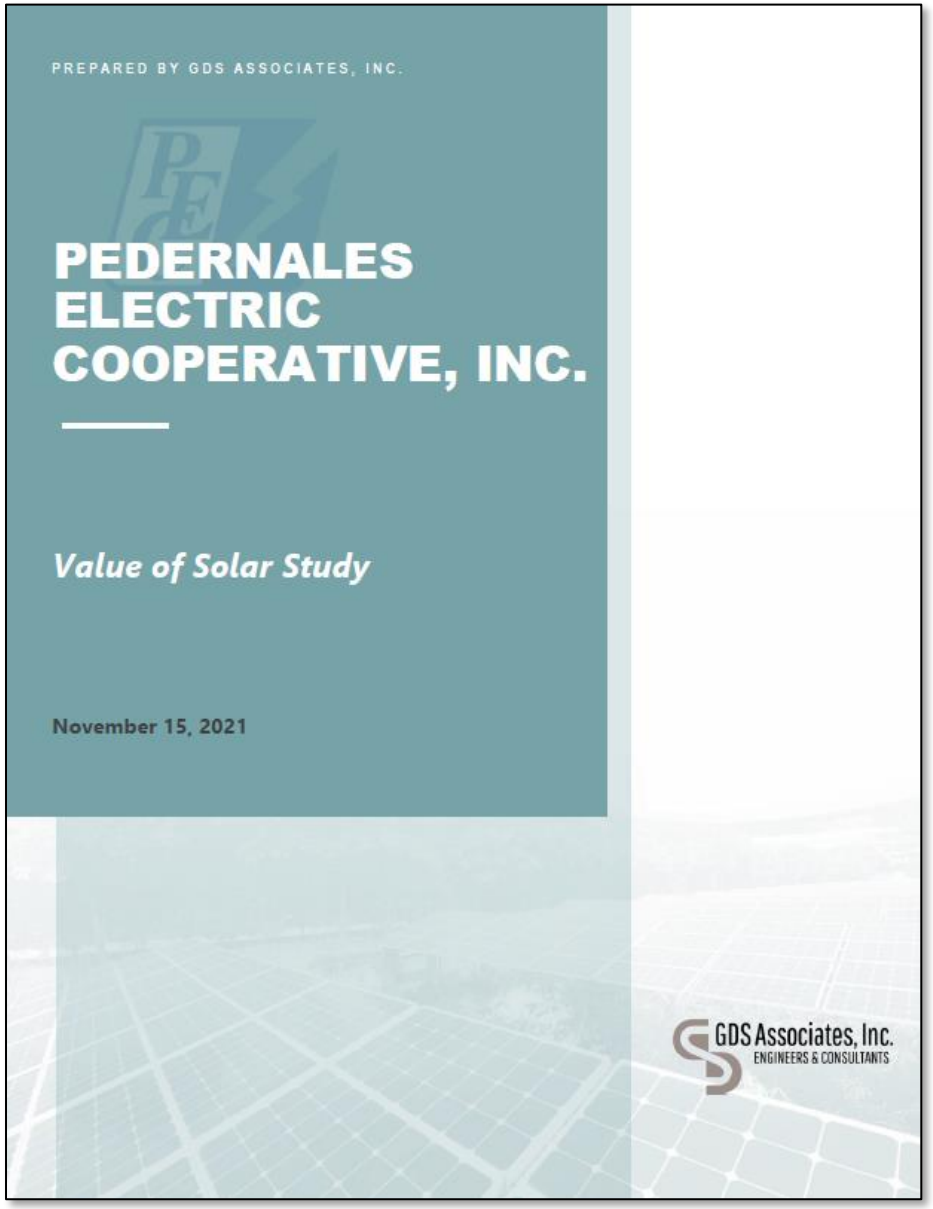
August 2021 - PEC issued an open and public RFP

- Awarded to GDS Associates, Inc.

Full study, with all accompanying materials, data and equations, have been posted publicly on the pec.coop webpage in the following locations

- Board meeting materials
- Document center

Independent review of the full study was completed by the Perryman Group and is posted in the Document center



Value of Solar Study

VALUE OF SOLAR STUDY OVERVIEW

1. Identify Costs that may be avoided by a member having a DG installation
2. Use publicly available, industry accepted data for all calculations
   - All ERCOT data was sourced from ERCOT data downloads
     - Historic energy prices
     - Historic ancillary service prices
   - All transmission access fee data was sourced from the Public Utility Commission of Texas (PUCT)
   - Solar generation data was sourced from PV Watts data from the National Renewable Energy Labs (NREL) (Widely accepted industry standard dataset)
3. As PEC is a member owned nonprofit electric cooperative, we used only direct costs that may be offset by a member having DG.

Value of Solar Study

All non zero values shown represent actual cash savings to PEC. Where no cash savings to PEC exists no value was assigned

Item	2018	2019	2020	3-Year Average	Notes
Avoided Energy Costs	$ 56.85	$ 88.78	$ 41.31	**$ 62.31**	Avoided Energy Costs Per kW year
Avoided Ancillary Services Costs	$ 2.49	$ 5.36	$ 1.66	**$ 3.17**	Avoided Ancillary Service Costs Per kW year
Avoided Transmission Costs	$ 18.14	$ 18.14	$ 19.61	**$ 18.63**	Avoided Transmission Costs Per kW year
Avoided Capacity or Demand Costs	$ -	$ -	$ -	**$ -**	Avoided Capacity/Demand Costs Per kW year
Avoided Distribution Costs	$ -	$ -	$ -	**$ -**	Avoided Distribution Costs Per kW year
Avoided Regulatory Costs	$ -	$ -	$ -	**$ -**	Avoided Regulatory Costs Per kW year
Value of Distributed Generation	**$ 77.48**	**$ 112.28**	**$ 62.58**	**$ 84.11**	**Avoided Costs Per kW year**

Generation Capacity or Demand Costs

ERCOT is an energy only market so there are no demand costs

Regulatory Costs

PEC does not incur any direct cash charges for environmental attributes

Perryman Group independent review agreed that all values shown above are appropriate

Value of Solar Study

Distribution Costs

PEC costs to maintain, operate, and build the distribution system are based on the peak load on the PEC system

PEC system has had its highest peak usage in the winter time historically. When it is dark and cold outside.

FIGURE 4-15 NCP SOLAR COINCIDENCE FACTOR EXAMPLE – JOHNSON CITY, TX

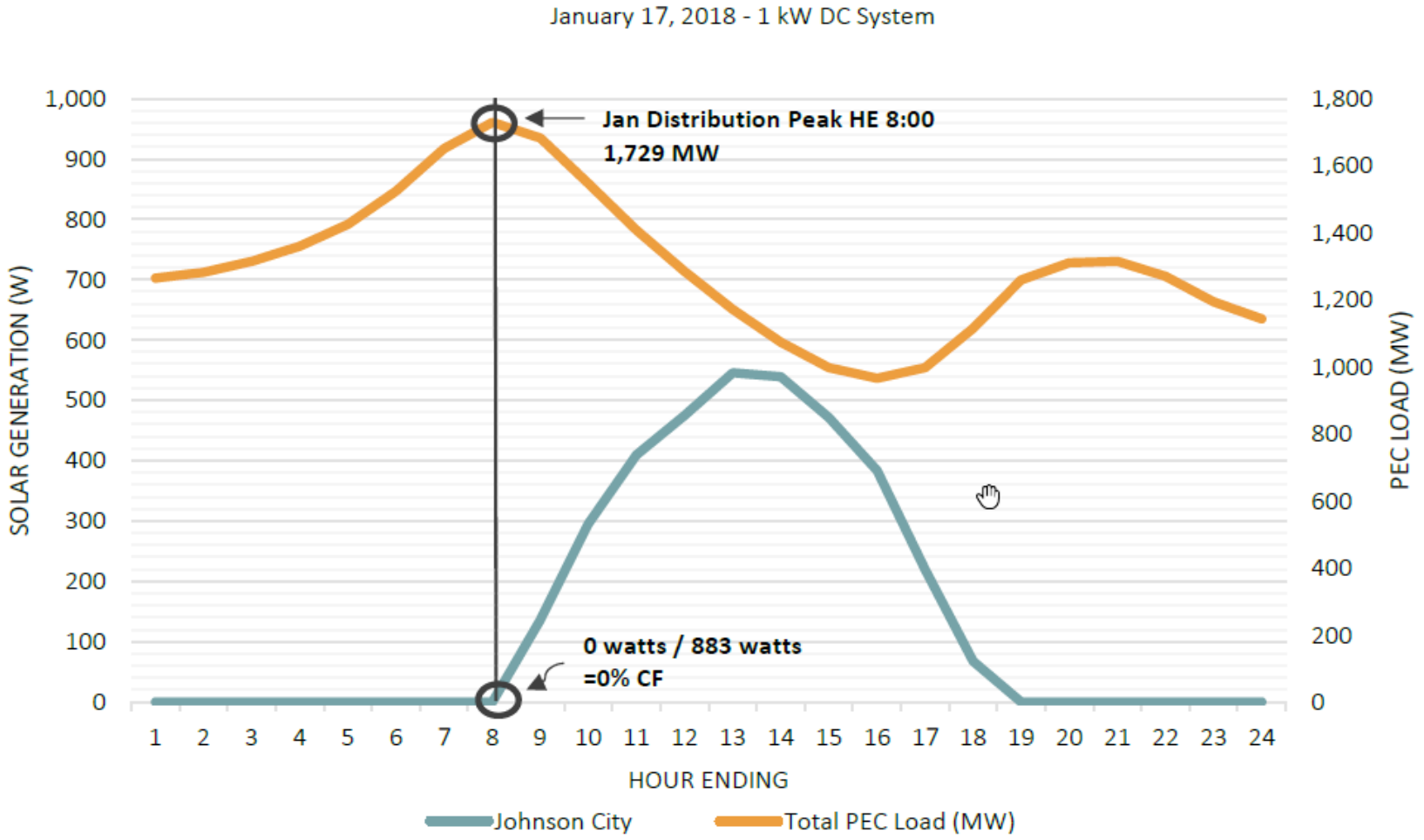


Figure shown on page 52 of the Value of Solar Study

Value of Solar Study

Transmission Costs

PEC costs to access the statewide Transmission system are calculated using PEC's system peak at the time of the ERCOT summer system peaks (4CP)

The ERCOT system sets it 4CPs during sunny late afternoon when AC is on at most companies/retail and homes

FIGURE 4-8 4-CP SOLAR COINCIDENCE FACTOR EXAMPLE – JOHNSON CITY, TX

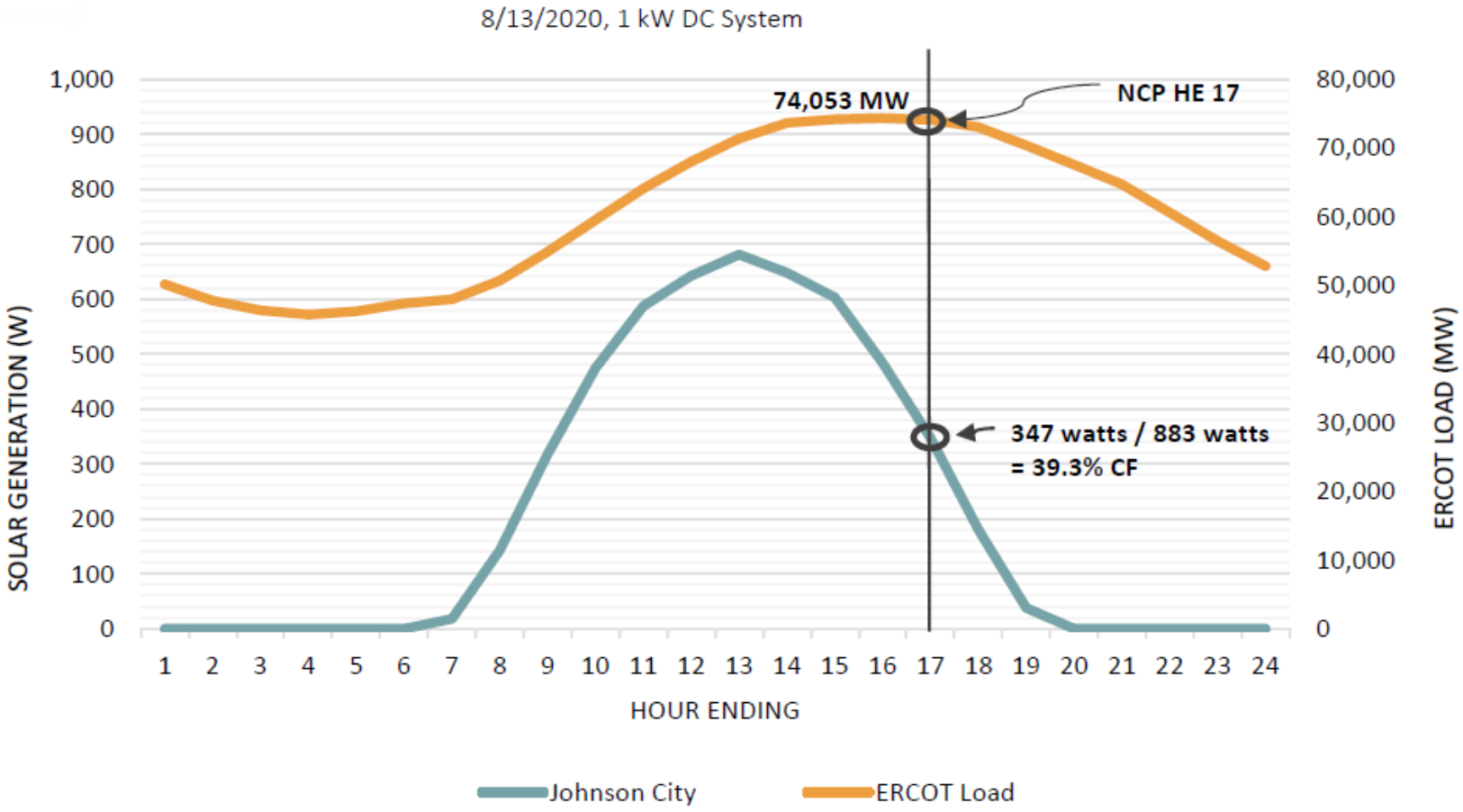


Figure shown on page 40 of the Value of Solar Study

Value of Solar Study

Energy and Ancillary Service Costs

PEC purchases energy and ancillary services from ERCOT.

Energy and ancillary service prices fluctuate but have been higher historically on hot sunny days

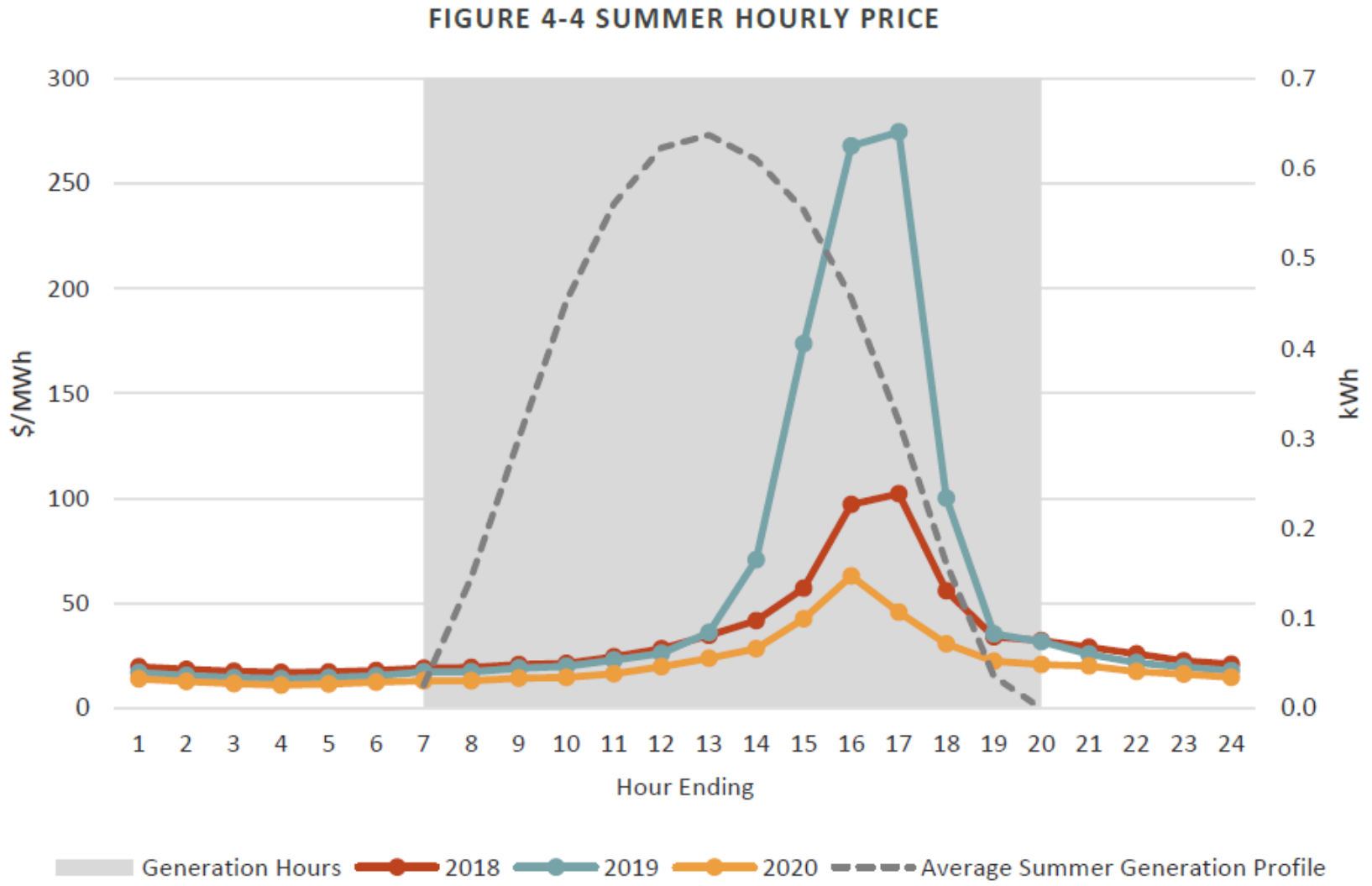


Figure shown on page 34 of the Value of Solar Study

Solar Interconnect Rate Changes

RATE DESIGN RECOMMENDATION

- All line items on the bill will be identical to a non-interconnect system member with a single line item addition that is a credit for excess generation that flows back onto the PEC distribution system
- A member will be charged for all energy delivered to the members meter
  - Same as all other members
- A member will offset their usage behind the meter similar to a member that is practicing energy efficiency or other behind the meter actions
  - Same as current practice
  - **A member will see no difference for the value they receive from solar energy that is consumed at the members location**

Solar Interconnect Rate Changes

RATE DESIGN RECOMMENDATION

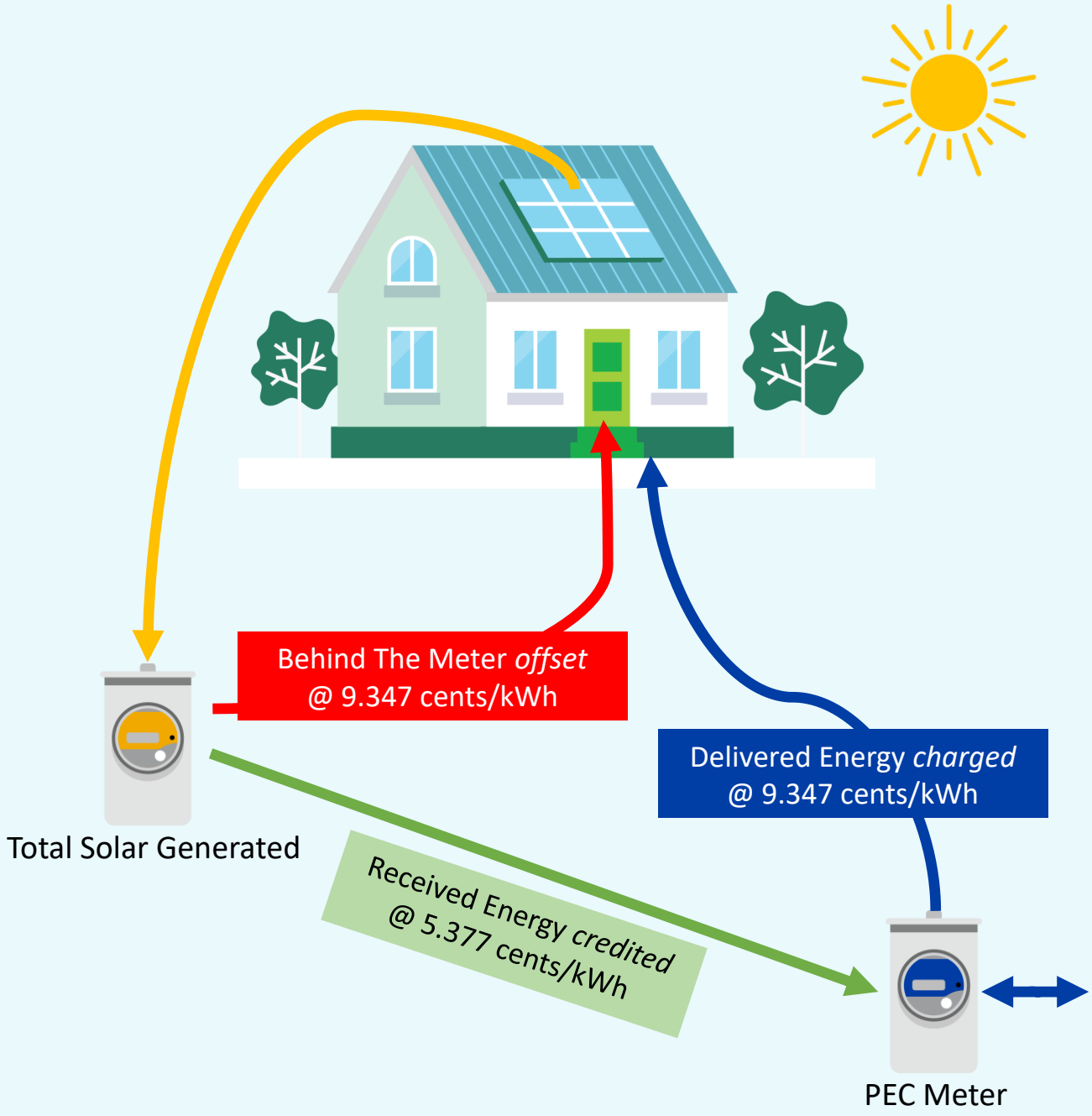
- A member will be credited for all energy received back onto the PEC distribution system at the members meter
  - Credit amount will be adjusted on an annual basis updating values for most recent three year
- PEC will update value of solar study at the same time as the Cost of Service Study (next update in 2023)
- All member credits will roll to the member's next bill indefinitely
  - Credit dollars may be transferred between members accounts if a member has multiple accounts but not to a different member
  - Credit dollars are refundable at time a member forfeits their membership
    - Same as current practice

Solar Interconnect Rate

To understand how and what amounts an Interconnect Member will be charged the following must be clear:

An Interconnect Member has three buckets of kWhs as described below:

1. **DELIVERED ENERGY** – The total energy (kWhs) delivered to a Member during a billing cycle through the Cooperative's Delivery System.
2. **BEHIND THE METER ENERGY** – All energy (kWhs) generated and consumed by the Member that does not register on the Member's meter during a billing cycle.
3. **RECEIVED ENERGY** – The surplus energy (kWhs) generation be a DG system with an Interconnection Agreement received by the Cooperative's Delivery System during a billing cycle.



Solar Interconnect Rate Changes

Proposed rates – Simple, Sustainable, Fair

MEMBER A

Average Residential, Farm and Ranch

Monthly Billing Determinants	Value	Unit
Delivered Energy	1,212	kWh

Current Activity

Service Availability Charge				$22.50	$22.50
Delivery Charge	1,212	kWh	@	$0.028405	$34.43
Base Power Cost	1,212	kWh	@	$0.044500	$53.93
Transmission Cost of Service Charge	1,212	kWh	@	$0.013560	$16.43
Temporary Winter Storm Surcharge	1,212	kWh	@	$0.007000	$8.48

TOTAL AMOUNT DUE **$135.77**

MEMBER B

Solar Interconnect (~7kW DG)

Monthly Billing Determinants	Value	Unit
Delivered Energy	803	kWh
Received Energy	472	kWh

Current Activity

Service Availability Charge				$22.50	$22.50
Delivery Charge	803	kWh	@	$0.028405	$22.81
Base Power Cost	803	kWh	@	$0.044500	$35.73
Transmission Cost of Service Charge	803	kWh	@	$0.013560	$10.89
Temporary Winter Storm Surcharge	803	kWh	@	$0.007000	$5.62
Sustainable Power Credit	472	kWh	@	-$0.053770	($25.38)

TOTAL AMOUNT DUE **$72.17**

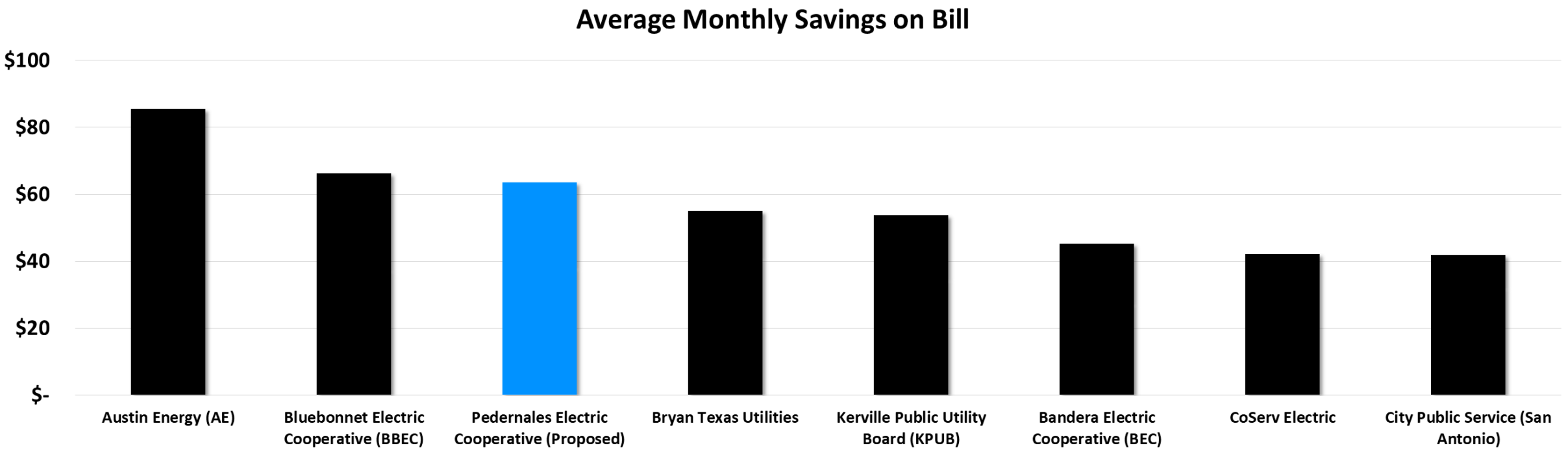
Behind the Meter DG, kWh	409
Behind the Meter DG, $/kWh	$0.093465
Member Savings, $	$38.23
Sustainable Power Credit, kWh	472
Sustainable Power Credit, $/kWh	$0.053770
Member Savings, $	$25.38
Average Monthly Savings	**$63.60**
Annual Member Savings	**$763.20**

Solar Interconnect Rate Changes

SIMPLE easy to understand single buy-back rate

SUSTAINABLE reduces most of the subsidy so that as solar usage increases an untenable burden is not placed on non-solar members

FAIR comparable to other utility buy-back rates and compensates rooftop solar generation at actual cash value to PEC members



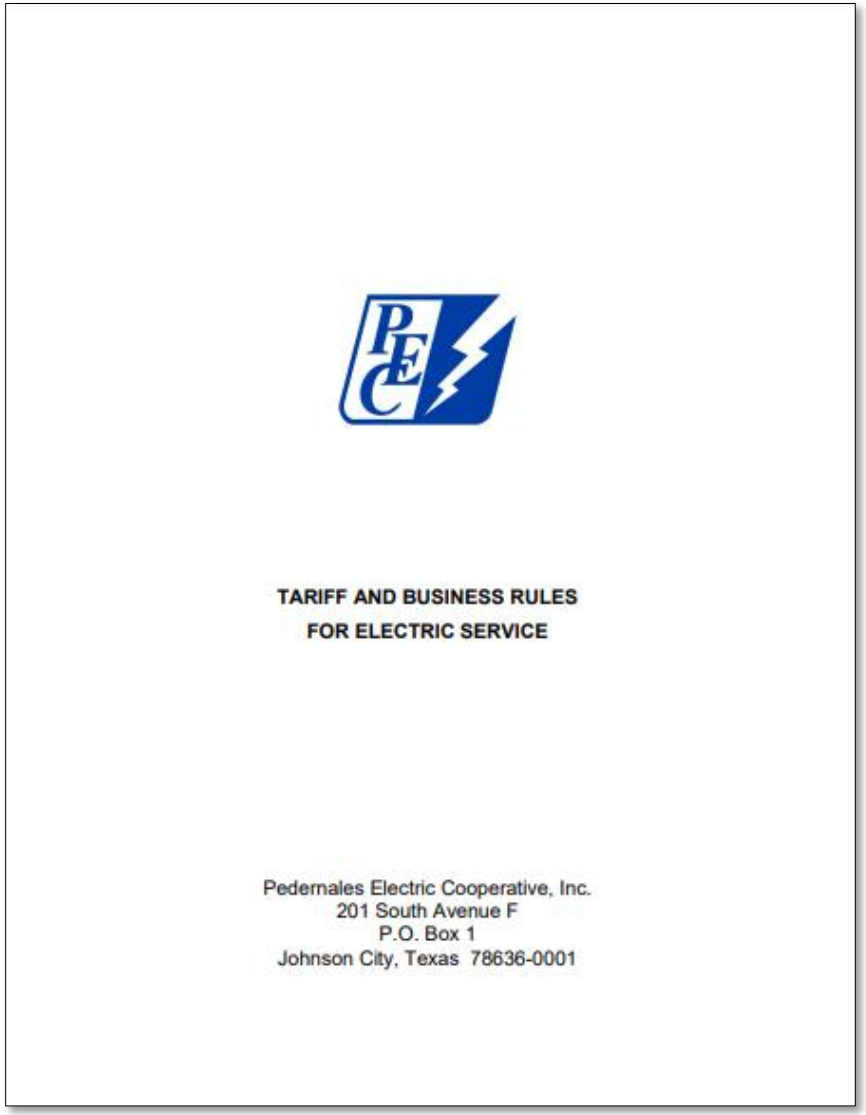
Solar Interconnect Rate Changes

PROPOSED IMPLEMENTATION TIMELINE

- No later than January 4th 2022 - Send correspondence to all affected members
- Proposed Rate effective date: March 1, 2022

TARIFF AMENDMENTS

- Sustainable Power Credit, Section 500.1.13
  Effective March 1, 2022
  - Replaces the Net Energy Credit line item
- Interconnect Rate, Section 500.3.1
  Effective March 1, 2022
  - Replaces the Interconnect Net Metering Rate



PEC Helpful Links and Rate Contact Information

PEC Document Center -

Includes Rate Policy, Cost of Service Studies, recent rate related Board items

https://www.pec.coop/about-us/your-cooperative/document-center/

PEC Rate Inquiry email addresses -

All Rate related questions - Rateinquiry@peci.com

Distributed Generation Rate specific questions - DGinquiry@peci.com

PEDERNALES ELECTRIC COOPERATIVE