

Distributed Generation/ Interconnect Rate Changes

Prepared for:



April 2021



Presentation Objectives

- Definitions and Terms
- PEC's Rate Policy
- Cost of Service Overview
- Cost of Service Study Results – Interconnect Rate

Definitions and Terms

- **Cost of Service Study (COSS):** Analysis conducted to determine the adequacy of cost recovery methods currently employed and determine whether adjustments are necessary.
- **Delivered Energy:** The total energy (kWh) delivered to a Member during a billing cycle through the Cooperative's Delivery System.
- **Received Energy:** The surplus energy generated by a DG system with an Interconnection Agreement received by the Cooperative's Delivery System during a billing cycle.
- **Net Energy:** Delivered Energy minus Received Energy.
- **Fixed Costs:** Costs that do not vary with usage. For example, this may include some types of distribution costs, customer service, meters, etc.
- **Peak Demand:** The maximum demand during a specific time period (e.g., a year, season, month, or day).
- **Time-of-Use Rate:** A rate that prices electricity according to the season or time of day that it is used to more closely reflects the actual cost of providing electricity.
- **Four (4) Coincident Peak (4CP)** – The average of the monthly 15-minute demand for each of the months of June, July, August and September at the same time as the greatest ERCOT system 15-minute demand for the months of June, July, August and September.

PEC's Rate Policy

PEC's Rate Policy Objectives

- Equitable Rates
- Accurate Price Signals
- Rate Stability
- Full Cost Recovery

[Link to PEC Rate Policy](#)

Rate Policy PEDERNALES ELECTRIC COOPERATIVE, INC.

1. Purpose:

1.1. Pedernales Electric Cooperative, Inc. ("PEC" or "Cooperative"), in its mission is committed to provide safe, reliable and low-cost energy solutions for the benefit of our members. The Tariff and Business Rules for Electric Service ("Tariff") as approved by the Cooperative's Board of Directors ("Board") details the Cooperative's Rates. The purpose of the Rate Policy ("Policy") is to provide structure and guidance to design and manage the Cooperative's Rates.

2. Scope:

- 2.1. This Policy governs the design process of the Cooperative's Rates.
- 2.2. This Policy governs the planning, management, reporting, and oversight of the processes to manage the Cooperative's Rates.
- 2.3. This Policy governs the interactions with the annual budget cycle and the enterprise risk management process.

3. Definitions:

The definitions below are commonly utilized by power industry professionals. The definitions are meant to clarify this Policy and may not align with other uses of the terms.

- 3.1. Cost of Service Study – a study that identifies all costs associated with providing service to a member and/or member class.
- 3.2. Price Signals – information conveyed to members through the establishment or adjustment of member Rates, which provides transparency to the member regarding the Cooperative's cost to serve or provide services.
- 3.3. Rate(s) – any compensation, tariff, charge, fare, rental, or classification that is directly or indirectly demanded, observed, charged, or collected by the Cooperative for any service, product, or commodity and any rule, practice, or contract affecting the compensation, tariff, charge, fare, toll, rental, or classification.
- 3.4. Rate Plan – a Board approved plan that is updated annually and defines how the Cooperative anticipates recovering its costs.

4. Policy Statement and Implementation:

The Rate design process will be guided by the following objectives and in accordance with any applicable federal or state law as to Rates:

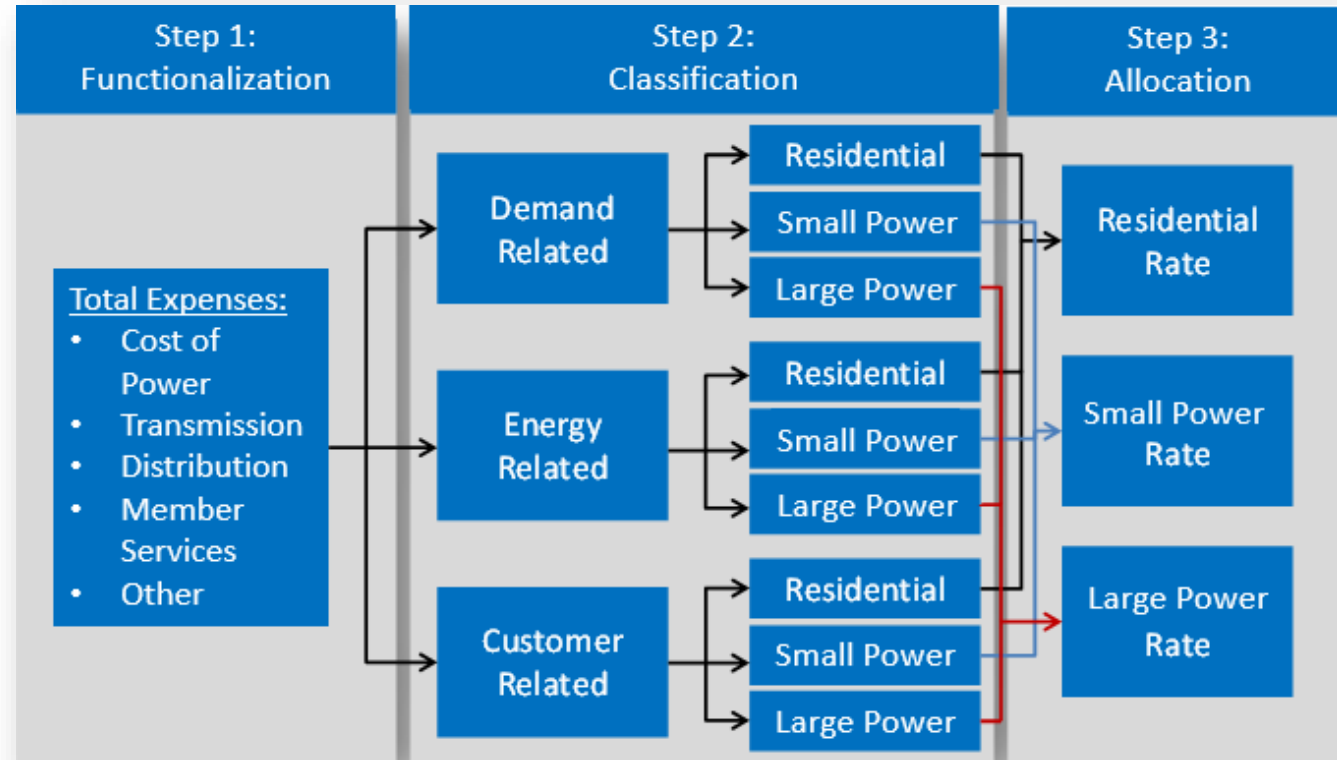
4.1. Defined Objectives

- 4.1.1. Equitable Rates – Costs will be allocated to members in a just and reasonable, equitable, non-discriminatory manner as supported by the Cost of Service Study.
- 4.1.2. Accurate Price Signals – Rates will strive to send accurate Price Signals to members, as metering infrastructure and billing software allows.
- 4.1.3. Stability – Rates will be designed to recover the Cooperative's costs, while limiting the impact of short term cost increases and decreases to member's rates.

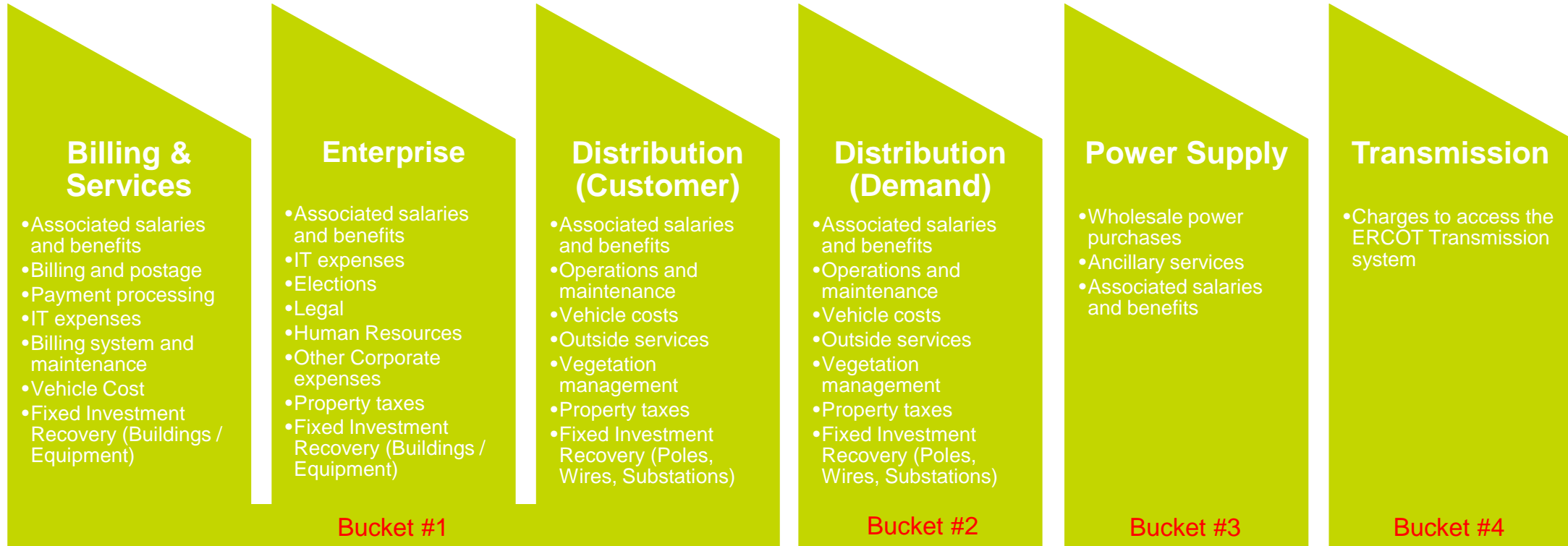
Cost of Service Study (COSS) Overview

COSS Process Overview

- Step 1: Determine total cost
- Step 2: Determine how the expense is incurred
 - Customer/Member Related
 - Energy Related
 - Demand Related
- Step 3: Determine what rate class incurred the expense or portion of the expense
 - Residential, Small Power, Large Power, Industrial, Interconnected
- Step 4: Ensure the current rate design recovers expense or design a rate that does



PEC's Cost Components for Interconnect Members



Charge used to recover →	Service Availability	Delivery	Base Power	Transmission Cost of Service
How PEC incurs cost →	fixed	demand (kW)	energy (kWh), varies	4CP demand (KW)
How PEC bills cost →	fixed	energy (kWh)	energy (kWh), flat	energy (kWh)

Cost of Service Study Results Interconnect Rate

Results of Cost of Service Study – Interconnect Rates

- The 2020 COSS results show the total cost to serve a Residential member on Net Metering Rate is under-recovered by ~17%; based on historic values
- Average of ~\$13.35 per month for average consumer under-recovery
- Under recovery in the Service Availability, Delivery and Base Power rate components
- Over recovery in the Transmission Cost rate component

		Cost of Service	Revenues Existing Rates	Delta	
Bucket #1	Customer Costs	\$ 1,312,733	\$ 1,062,721	\$ 250,012	19%
	Monthly Cost Per Consumer	\$27	\$22	\$5	
Bucket #2	Distribution Costs	\$ 1,081,555	\$ 700,710	\$ 380,845	35%
	Monthly Cost Per Consumer	\$22	\$14	\$8	
Bucket #3	Wholesale Power Costs	\$ 1,244,948	\$ 1,149,763	\$ 95,185	8%
	Monthly Cost Per Consumer	\$25	\$23	\$2	
Bucket #4	Transmission Costs	\$ 254,825	\$ 324,517	\$ (69,692)	-27%
	Monthly Cost Per Consumer	\$5	\$7	(\$1)	
	Average Cost per kWh	\$0.04186	\$0.02712		
	Average Cost per kWh	\$0.04818	\$0.04450		
	Average Cost per kWh	\$0.00986	\$0.01256		
	Total	\$ 3,894,061	\$ 3,237,711	\$ 656,350	17%

Results of Cost of Service Study – Interconnect Rates



- The current interconnect rate has issues due to both cost misalignment as well as under and over recovery issues.
- Interconnect members are not receiving proper price signals to receive the full costs and full benefits of an interconnect installation.
- These issues have been identified in previous studies as well
- Historically, PEC's billing and metering infrastructure did not have the capabilities to bill in-line with cost causation and benefit.
- PEC is upgrading both their billing and metering system to enable the recommended rate design.
- Members with interconnected distributed generation, while still a small percentage of total members, have been rapidly growing as shown below

Year End	2017	2018	2019	2020
Count	1,249	1,811	3,751	5,128
% Change		45%	107%	37%

Recommended Interconnect Rate

Service Availability Charge (SAC)

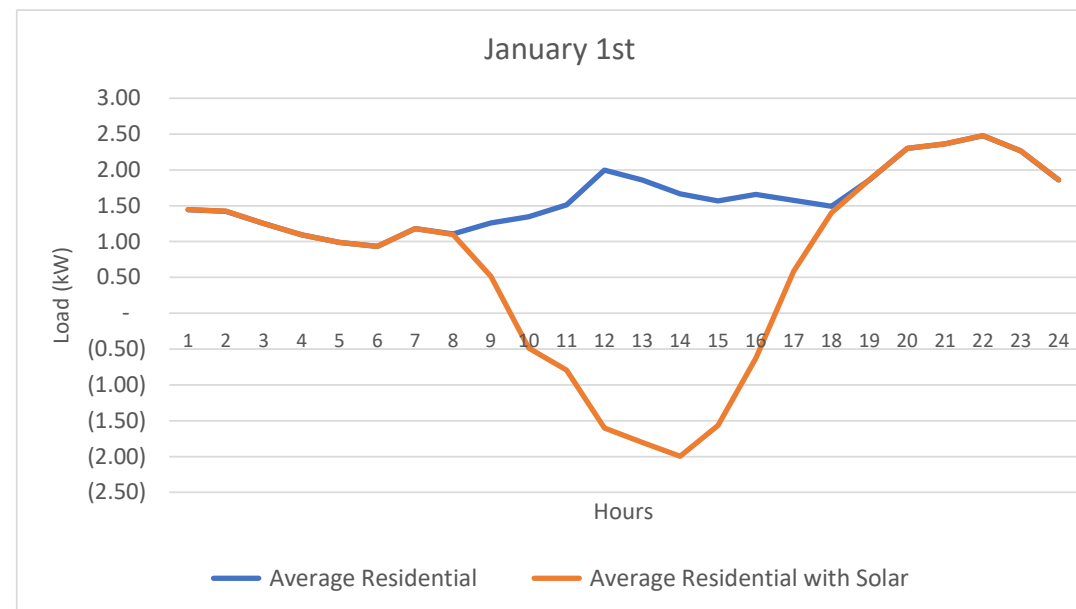
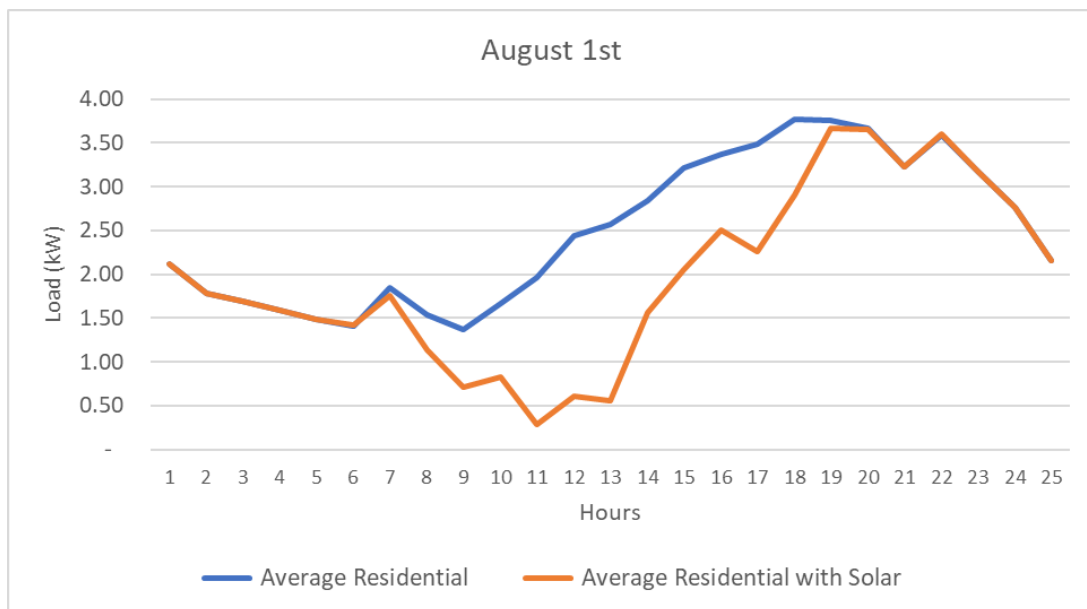
- No changes recommended
- Why?
 - While the table on slide 10 shows a 19% under-recovery, PEC finds it is appropriate to classify and collect these under-recovered costs in the distribution delivery (or distribution demand) bucket

Recommended Interconnect Rate

Peak Demand Charge (Delivery)

- Changing from an energy based (kWh) charge to a demand based (kW) charge
- Why?
 - The table on slide 10 shows a 19% under-recovery in SAC that will be recovered through the demand charge as well as a 34% under-recovery in the current delivery charge.
 - The cost is incurred primarily due to meeting peak demand on the distribution system.
 - Aligning cost causation and the rate will limit winners and losers within the rate class

Interconnect Customer Typical Load Profiles



- Solar makes a small reduction to the distribution system peak demand. Solar energy while helpful from an energy perspective does not significantly reduce the need for the distribution system wires, poles, transformers, and substations and therefore those PEC assets and costs remain.
- If the PEC assets and costs remain and the delivery revenues decline, then the other PEC customers end up paying for the unrecovered system costs and subsidizing solar customers.

Recommended Interconnect Rate

Base Power Charge

- Changing from Flat Rate to Time-of-Use (TOU) Rate
- Why?
 - PEC incurs its costs for power in close alignment to the Time-of-Use rate structure
 - Interconnect members can receive appropriate benefits and costs from their distributed generation installations

Recommended Interconnect Rate

Transmission Cost of Service Charge

- Changing from an energy based (kWh) charge to a demand based (kW) charge
- Why?
 - PEC incurs its costs for transmission access by its demand during the Four Coincident Peaks, as previously defined.
 - Interconnect members can receive appropriate benefits and costs from their distributed generation installations

Recommended Interconnect Rate

Current Rates - (Residential Interconnect)

- Service Availability Charge \$22.50
- Delivery Charge (Distribution) \$0.02712/kWh
- Transmission Charge \$0.01356/kWh
- Base Power Charge – Flat \$0.0445/kWh
- Net Metering Credit – Flat – \$0.0445/kWh

Recommended Rates - (Residential Interconnect)

- Service Availability Charge \$22.50
- Delivery Charge (Distribution) \$5.15/kW
- Transmission Charge ~ \$5.00/kW
- Base Power Charge – TOU Varies
- Base Power Energy Credit – TOU Varies

Recommended Interconnect Rate

		Cost of Service	Revenues Proposed Rate	Delta	
Bucket #1	Customer Costs	\$ 1,312,733	\$ 1,062,721	\$ 250,012	19%
	Monthly Cost Per Consumer	\$27	\$22	\$5	
Bucket #2	Distribution Costs	\$ 1,081,555	\$ 1,367,585	\$ (286,030)	-26%
	Monthly Cost Per Consumer	\$22	\$28	-\$6	
	Average Cost per kWh	\$0.04186			
Bucket #3	Wholesale Power Costs	\$ 1,244,948	\$ 1,244,948	\$ -	0%
	Monthly Cost Per Consumer	\$25	Pass-through		
	Average Cost per kWh	\$0.04818	TOU Energy		
Bucket #4	Transmission Costs	\$ 254,825	\$ 254,825	\$ -	0%
	Monthly Cost Per Consumer	\$5	Pass-through		
	Average Cost per kWh	\$0.00986	4CP Demand		
Total		\$ 3,894,061	\$ 3,930,079	\$ (36,017)	-0.9%

} Non-Pass
Through
Charges

Rate recovers full
cost to serve
members

1898 
CO SM

PART OF BURNS  MCDONNELL