OPALCO

Co-op Run. Community Powered.

In preparation for OPALCO's 2025 Cost of Service Study, OPALCO staff is planning on performing a Cost-of-Service Analysis and Rate Design in 2025. Brian Silverstein, Vince Dauciunas, and Staff have prepared the following materials to lay the foundation for the upcoming analysis.

2025 Rate Discussion

(Preliminary Slide Deck)

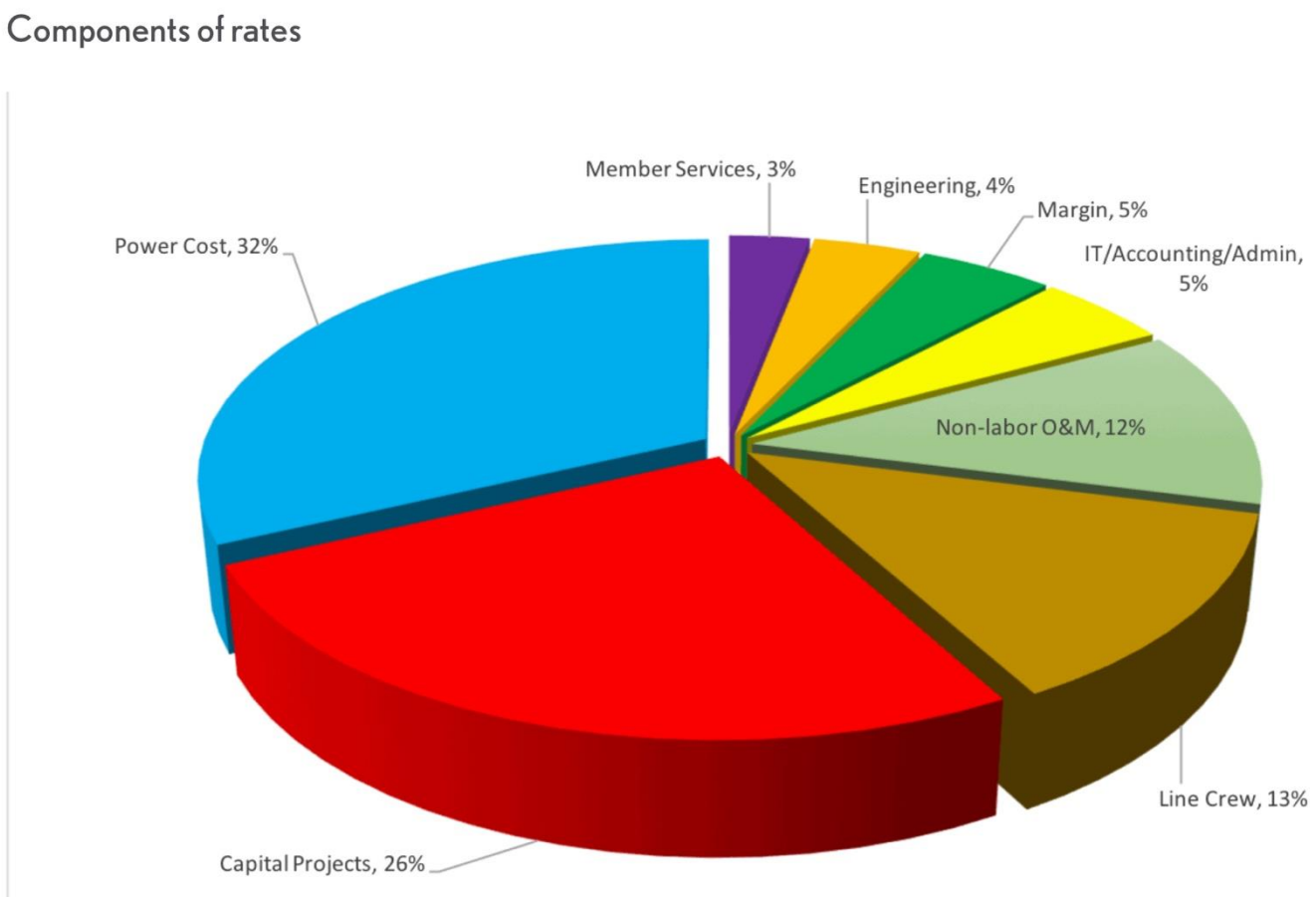
Residential Demand Based Rate Presentation

prepared by Brian Silverstein

Fixed Costs

- OPALCO Fixed Costs (not power) are about two-thirds of where the money goes
- About 2/3 of our Fixed Costs are recovered in the Energy Rates.
- Energy usage varies over year-to-year due to weather fluctuation. That leads to revenue shortage.
- This discussion is on what step we can take to prepare for a new rate design. For discussion this is focused on residential members.

Where does the OPALCO money go?



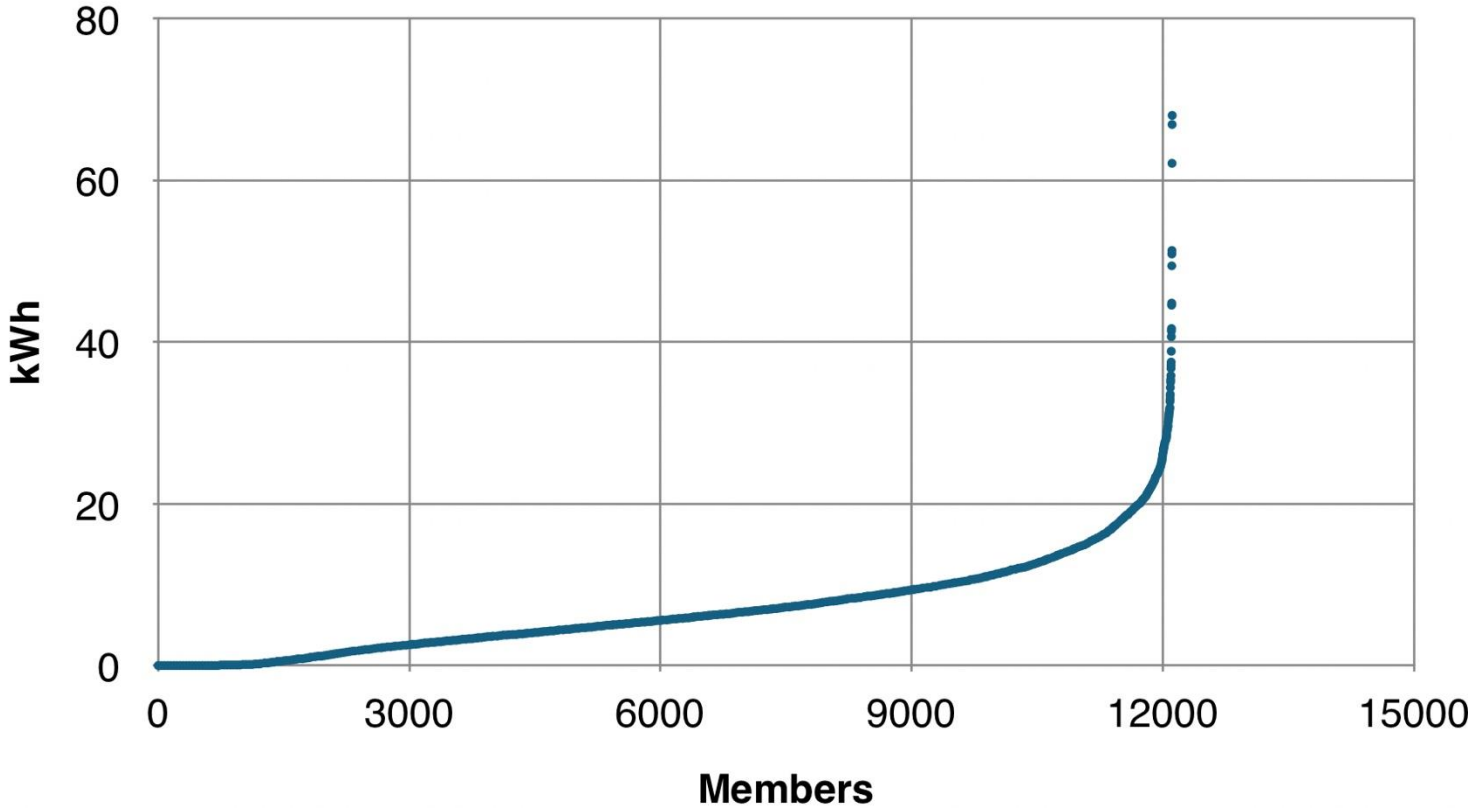
Solutions

1. Remove Fixed Costs from the Energy Charge and only recover power costs ($/kWh)
2. And either
   - Every member pays the same Service Access Charge **to cover all Fixed Costs**

   OR
   - Every member pays
     - The same Service Access Charge covering a **portion** of the Fixed Costs.
     - **And** a Demand Rate ($/kW). Four Coops in WA, OR and ID have a Demand rate for some residential members. There are many ways to construct it.

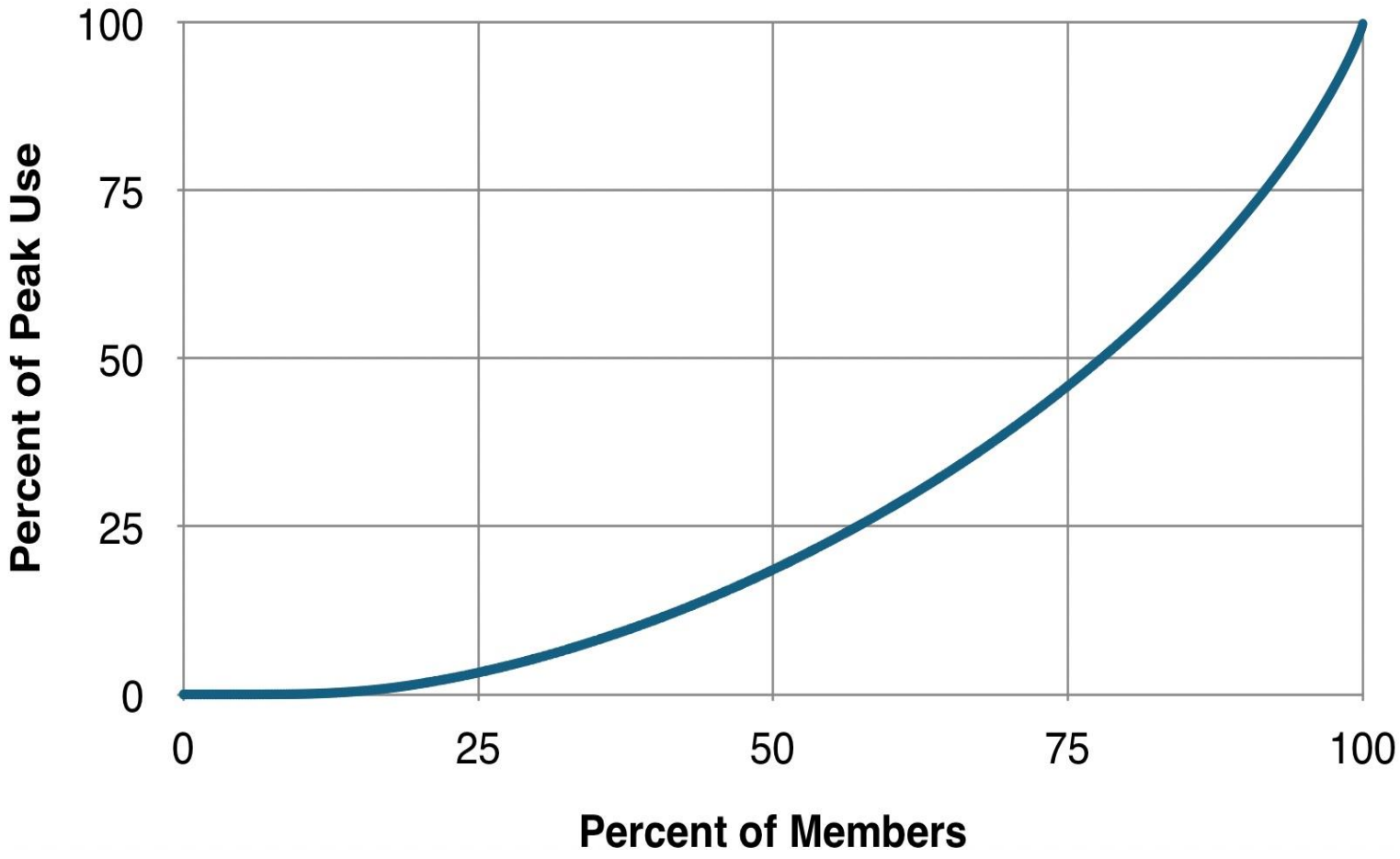
     AND/OR
     - Time of Use/Generation and/or Demand

Residential Peak Hour Use – 1/12/2024



- 723 accounts used no energy that day and the net 289 were only up to 0.1 kWh
- At the far end there are 300 accounts above 20kWh

Portion of Members Residential Contributing to Peaks



- **The first 25% of members provided only 3% of the total peak.**
- The next 50% provided 43%.
- The next 25% provided 54%.

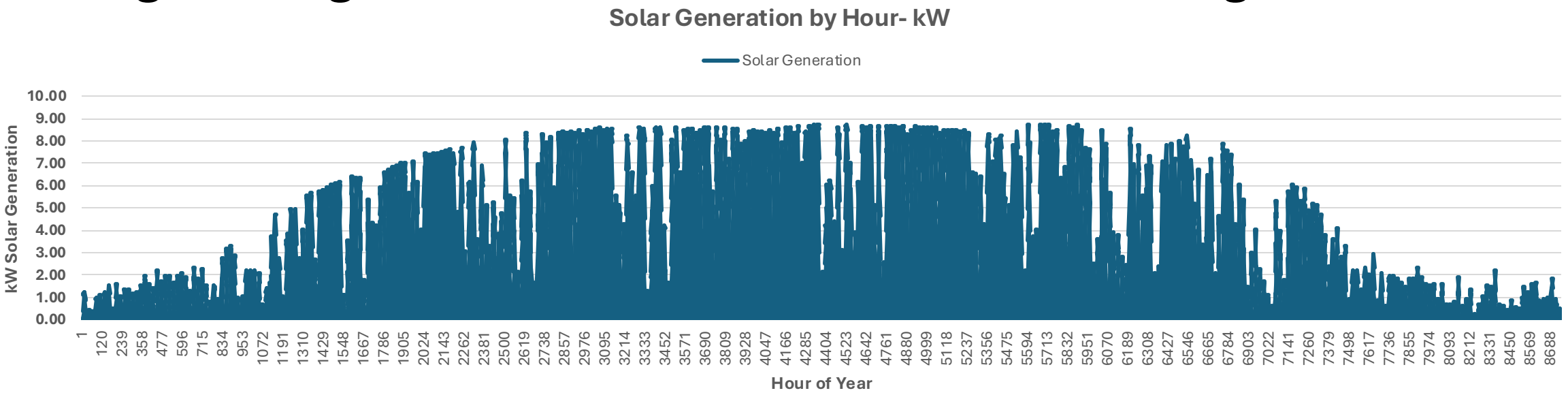
Next Steps

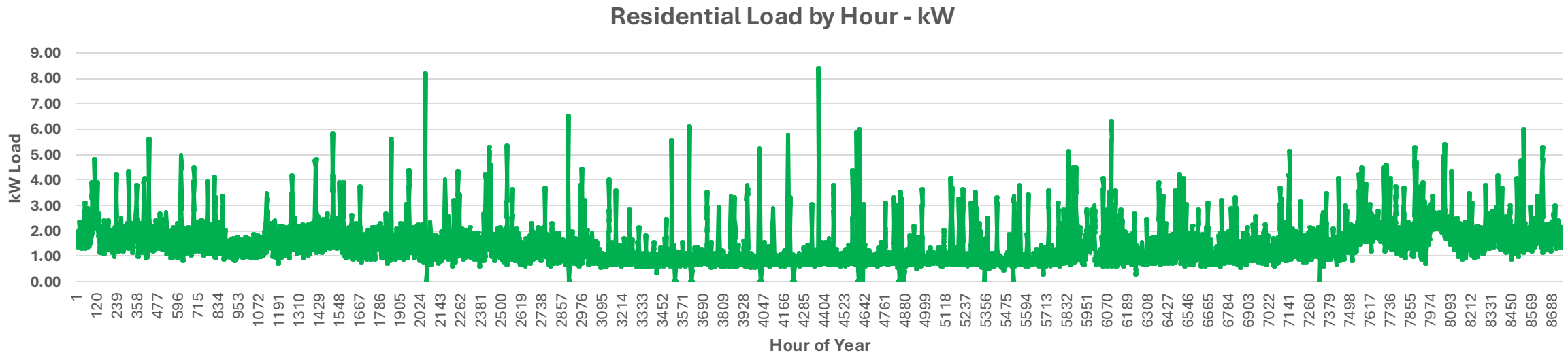
- Analyze residential peak usage over a year
- Talk with utilities who are addressing this issue
- Present alternatives to the Board.
- Phase-in/Implementation Schedule

Residential Solar Interconnect Analysis

prepared by Vince Dauciunas

Usage average residence and 10kW solar member generator





#1		w/o 12kW solar kWh		Power Cost
Month	From Grid	To Grid	Total	$
Jan	-1357	0	-1357	$172.91
Feb	-1059	0	-1059	$134.87
Mar	-1161	0	-1161	$147.86
Apr	-1064	0	-1064	$135.55
May	-733	0	-733	$93.33
Jun	-642	0	-642	$81.77
Jul	-698	0	-698	$88.99
Aug	-714	0	-714	$90.91
Sep	-891	0	-891	$113.46
Oct	-948	0	-948	$120.75
Nov	-1325	0	-1325	$168.75
Dec	-1410	0	-1410	$179.65
Total	-12000	0	-12000	$1,528.80
Hours	8760	0	8760	

#2	w/12kW solar kWh			Power Cost
Month	From Grid	To Grid	Total	$
Jan	-1151	7	-1145	$146.14
Feb	-798	114	-684	$92.56
Mar	-697	617	-80	$39.41
Apr	-577	740	163	$14.26
May	-321	1279	958	-$61.42
Jun	-248	1519	1271	-$89.92
Jul	-314	1356	1043	-$68.53
Aug	-332	1208	876	-$54.34
Sep	-504	653	149	$11.96
Oct	-625	369	-256	$50.10
Nov	-1081	58	-1023	$133.08
Dec	-1273	0	-1272	$162.11
Total	-7920	7920	0	$375.40
Hours	6316	2402	8718	

#3	w/ 12kW solar kWh +24kWh battery			Power Cost
Month	From Grid	To Grid	Total	$
Jan	-1120.60	0.00	-1120.6	$142.77
Feb	-684.10	0.00	-684.1	$87.15
Mar	-226.60	131.02	-95.6	$18.39
Apr	-150.73	311.31	160.6	-$5.70
May	0.00	952.28	952.3	-$76.18
Jun	0.00	1274.72	1274.7	-$101.98
Jul	-4.16	1048.14	1044.0	-$83.32
Aug	0.00	880.13	880.1	-$70.41
Sep	-96.41	244.00	147.6	-$7.24
Oct	-292.14	52.57	-239.6	$33.01
Nov	-1023.06	0.00	-1023.1	$130.34
Dec	-1272.35	0.00	-1272.4	$162.10
Total	-4870.16	4894.16	**24.0**	$228.93
Hours	3240	1151	4391	

#1	12,000 kWh			
	BPA	Opalco		
	$504.00	**$1,703.88**	kWh	$1,528.80
			Fixed	$679.08
			Total	$2,207.88
		$679.08	fixed	40%
		$1,024.80	kWh	60%
		$1,703.88	opalco	100%

BPA	Opalco		
$332.63	**$721.85**	kWh	$375.40
		Fixed	$679.08
		Total	$1,054.48

BPA	Opalco		
$204.55	**$703.46**	kWh	$228.93
		Fixed	$679.08
		Total	$908.01

#2	7,920			
-$633.60	BPA	Opalco		
	$332.64	**$1,355.45**	kWh	$1,009.01
			Fixed	$679.08
			Total	$1,688.09
		$679.08	fixed	50%
		$676.37	kWh	50%
		$1,355.45	opalco	100%

#3	4,870			
-$391.52	BPA	Opalco		
	$204.54	**$1,094.98**	kWh	$620.44
			Fixed	$679.08
			Total	$1,299.52
		$679.08	fixed	62%
		$415.90	kWh	38%
		$1,094.98	opalco	100%

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Sep	-891	0	-891	$113.46
Oct	-948	0	-948	$120.75
Nov	-1325	0	-1325	$168.75
Dec	-1410	0	-1410	$179.65
Total	-12000	0	-12000	$1,528.80
Hours	8760	0	8760	

#1	12,000 kWh			
	BPA	Opalco		
	$504.00	$1,704	kWh	$1,529
			Fixed	$679
			Total	$2,208
		$679	fixed	40%
		$1,025	kWh	60%
		$1,704	opalco	100%

#2	w/12kW solar kWh			Power Cost
Month	From Grid	To Grid	Total	$
Jan	-1151	7	-1145	$146.14
Feb	-798	114	-684	$92.56
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$332.63	**$721.85**	kWh	$375.40
		Fixed	$679.08
		Total	$1,054.48

#2	**7,920**			
-$633.60	BPA	Opalco		
	$332.64	**$1,355**	kWh	$1,009
			Fixed	$679
			Total	$1,688
		$679	fixed	50%
		$676	kWh	50%
		$1,355	opalco	100%

#3	w/ 12kW solar kWh +24kWh battery			Power Cost
Month	From Grid	To Grid	Total	$
Jan	-1120.60	0.00	-1120.6	$142.77
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		Fixed	$679.08
		Total	$908.01

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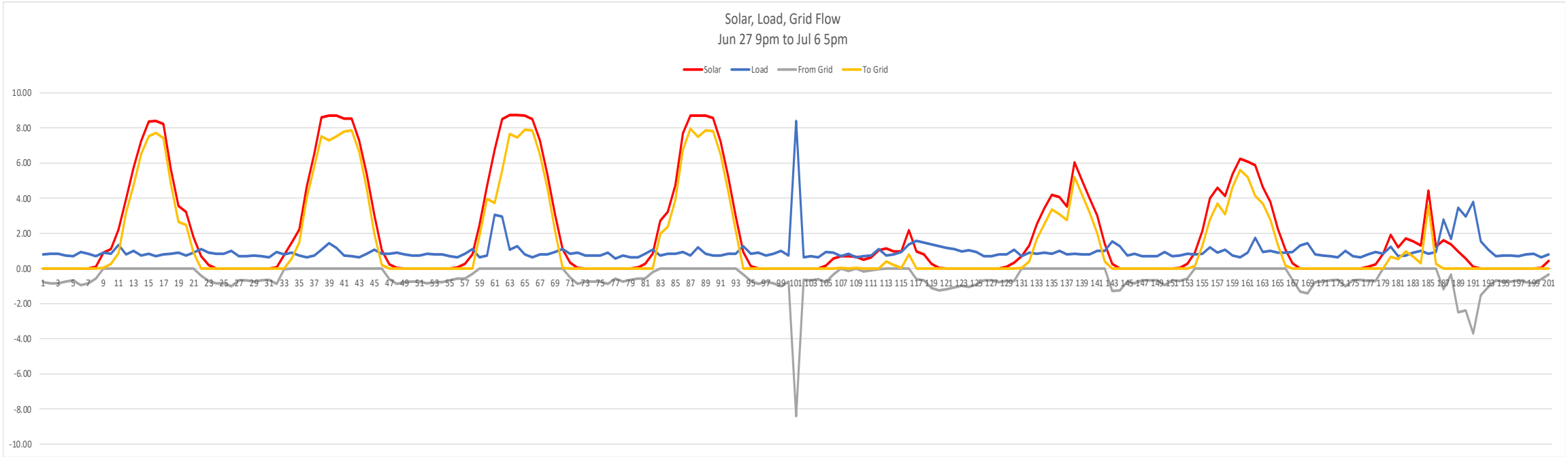
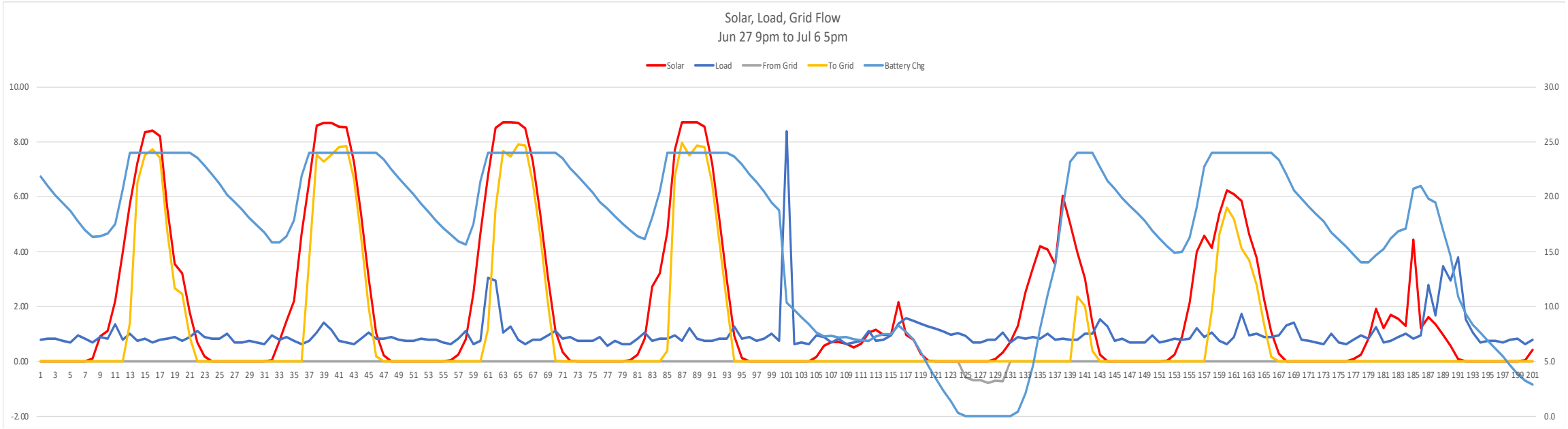
-$391.52	BPA	Opalco		
	$204.54	**$1,095**	kWh	$620
			Fixed	$679
			Total	$1,300
		$679	fixed	62%
		$416	kWh	38%
		$1,095	opalco	100%


Solar, Load, Grid Flow
Jun 27 9pm to Jul 6 5pm
Solar
Load
From Grid
To Grid
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
-10.00


Solar, Load, Grid Flow
Jun 27 9pm to Jul 6 5pm
Solar
Load
From Grid
To Grid
Battery Chg
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
30.0
25.0
20.0
15.0
10.0
5.0
0.0

Example: Residential Load 12,000kWh, Solar Gen 12,000kWh, No Battery

(Olynpia sets Net Metering @ Full Retail !)

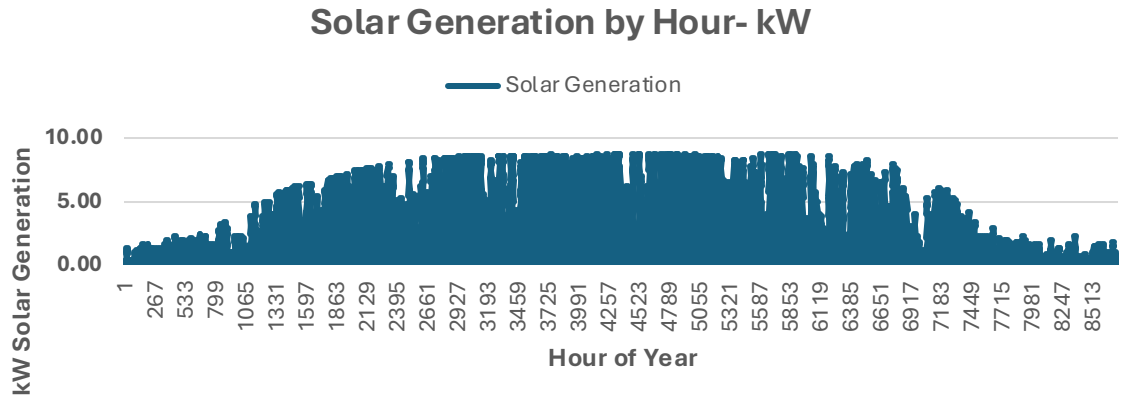
Comparison of Tariff Variations

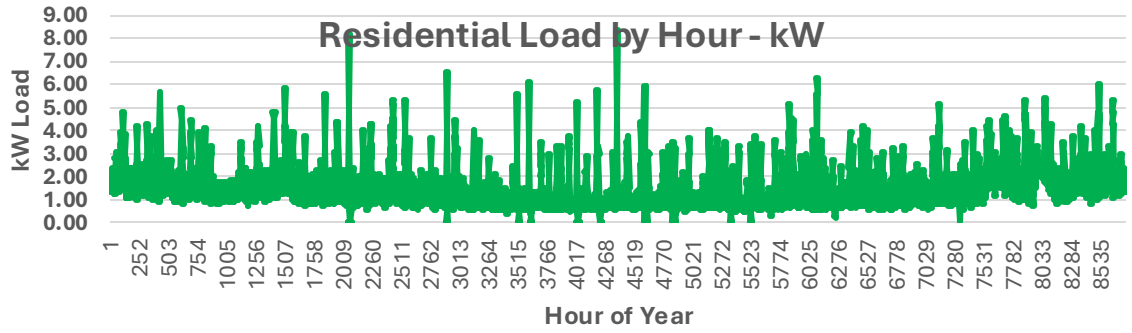
Current		w/o solar	% of total	with solar	% of total
Fixed Fee	$56.00	**$672.00**	31%	**$672.00**	100%
$/kWh	$0.1274	**$1,528.80**	69%	**$0.00**	0%
$/kWh TOU	$0.00	$0.00	0%	$0.00	0%
$/kW Demand	$0.00	$0.00	0%	$0.00	0%
Total		**$2,200.80**	100%	**$672.00**	100%

Demand		w/o solar	% of total	with solar	% of total
Fixed Fee	$56.00	**$672.00**	31%	**$672.00**	85%
$/kWh	$0.1155	**$1,385.70**	63%	**$0.00**	0%
$/kWh TOU	$0.00	$0.00	0%	$0.00	0%
$/kW Demand	$2.00	**$143.10**	7%	**$123.15**	15%
Total		**$2,200.80**	100%	**$795.15**	100%

TOU		w/o solar	% of total	with solar	
Fixed Fee	$56.00	**$672.00**	31%	**$672.00**	47%
$/kWh TOU off	$0.0682	**$382.50**	17%	**-$485.83**	-34%
$/kWh TOU on	$0.1793	**$1,146.30**	52%	**$1,243.76**	87%
$/kW Demand	$0.00	$0.00	0%	$0.00	0%
Total		**$2,200.80**	100%	**$1,429.93**	100%

TOU + Demand		w/o solar	% of total	with solar	% of total
Fixed Fee	$56.00	**$672.00**	31%	**$672.00**	48%
$/kWh TOU off	$0.0682	**$382.50**	17%	**-$485.83**	-35%
$/kWh TOU on	$0.1569	**$1,003.20**	46%	**$1,091.03**	78%
$/kW Demand	$2.00	**$143.10**	7%	**$123.15**	9%
Total		**$2,200.80**	100%	**$1,400.35**	100%





Staff Additional Considerations

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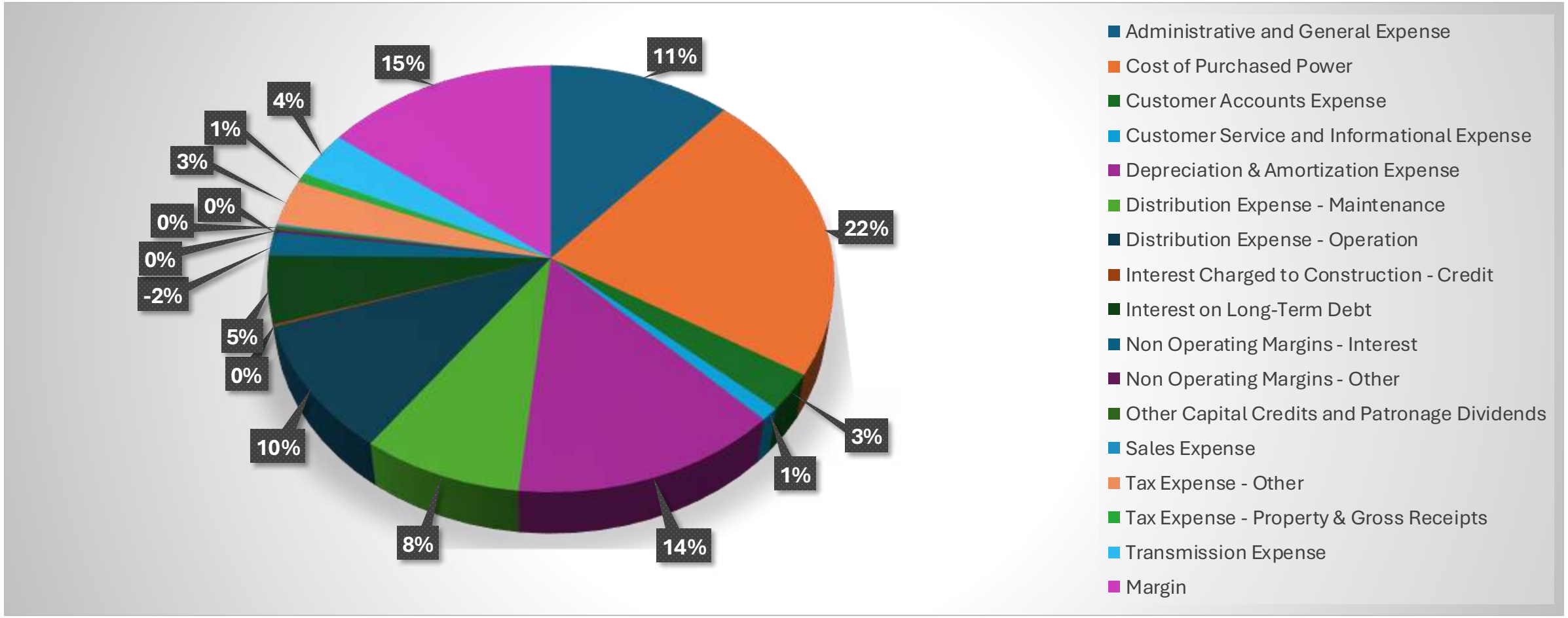
Co-op Run. Community Powered.

2025 COSA/Rate Design Background

- Principles
  - Meet Revenue Requirements
  - Align revenue collection with Cost of Service
  - Consider consumer classes for cost allocations
  - System specific considerations
  - No rate class should subsidize another
  - Meets cooperative's strategic directives
  - KISS principle of simplicity

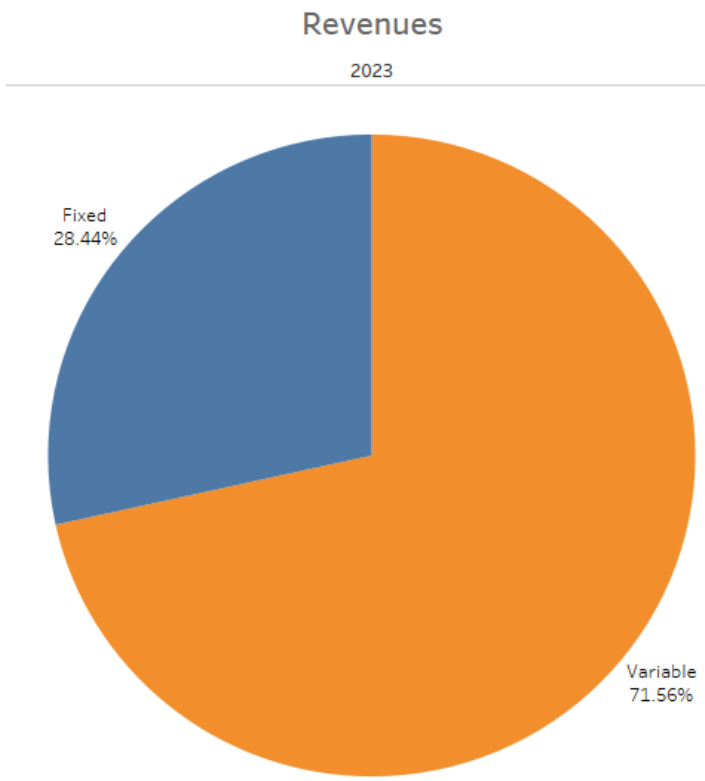
- Energy Charge Adjustment to collect weather anomalies

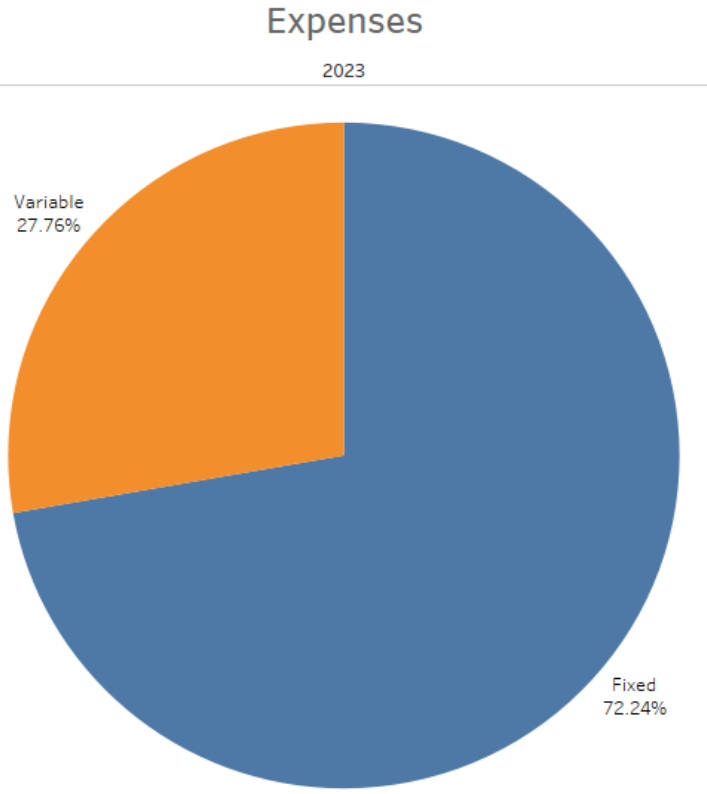
How does the OPALCO Revenue equate to our Cost of Service?



*data based on 2023

Revenue vs Expense Disparity





Considerations

- Margin is a budgeted necessity for capital
- BPA/Market Tier 2 Pricing
  - Anticipated to double or more in next few years
- Fuel switching back to wood/gas
- Not penalize all-electric services
- Seasonal variance
  - BPA hydro system output shape
  - Solar profile
- Solar disparity
  - Anticipation of curtailment in ~2030
  - Grid subsidy
  - Margin drop (lost revenue)

Rate Component Options: Fixed

- Intended to recover revenue associated with costs to operate agnostic to the volume of energy sold.
- 13,274 active residential services
- Service Access Charge as a flat rate to all services within the consumer class. Can have categories for further transparency.
    - Transmission and Distribution O&M, Member Services and Administration, Capital (Grid), Purchased Power (excluded variable component)
- Service Size as an additional charge that varies based on size of meter.
        - 200-Amp Service – 12,668 services
        - 400-Amp Service – 382 services
        - >400-Amp Service – 223 services

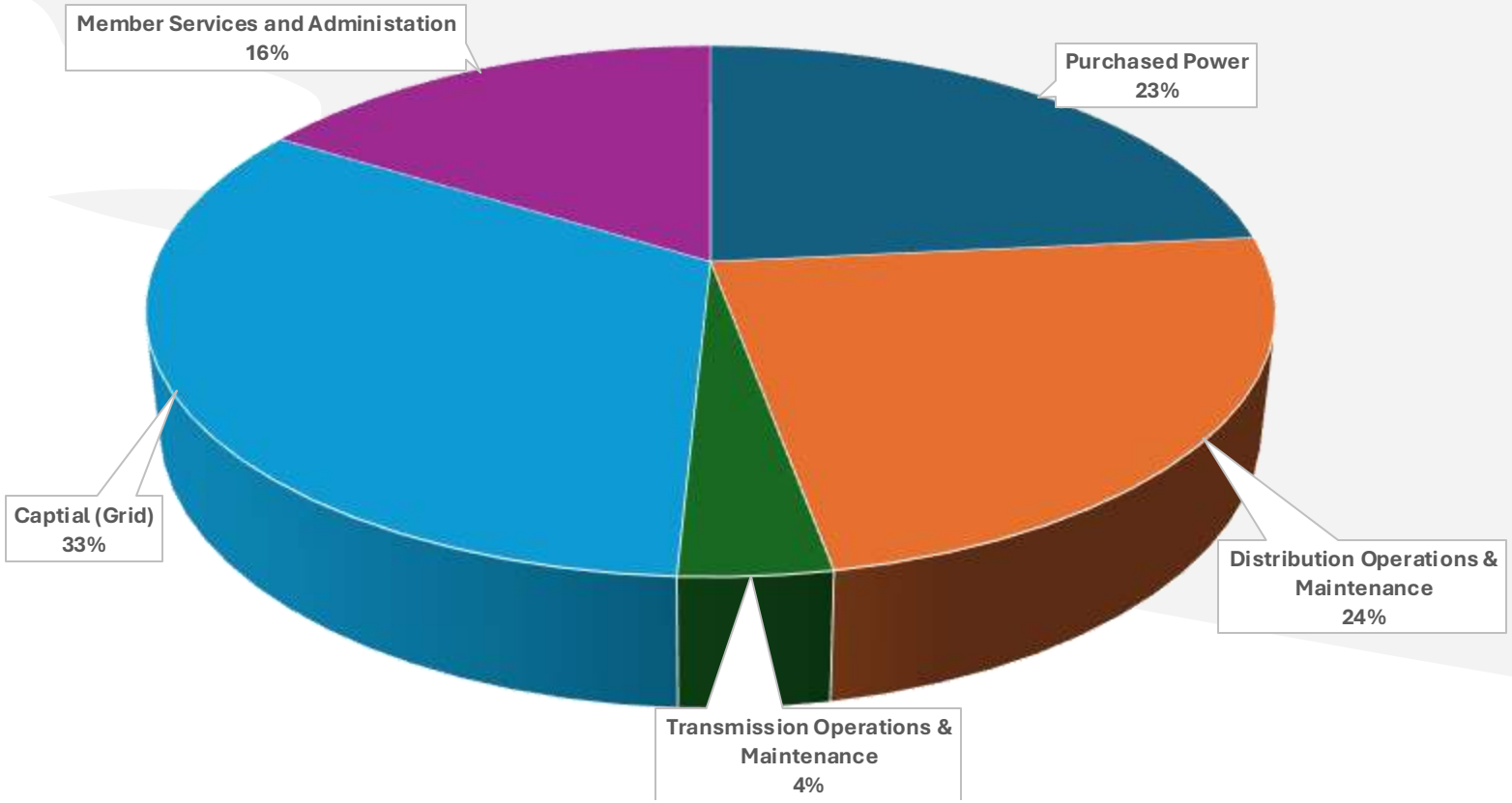
Rate Component Options: Energy

- Intended to recover revenue associated with volume on energy over the billing duration.
- Energy Block
  - Current implementation inclining block which was thought to incentivize conservation of energy.
- Time Varying
  - Time of Use/Generation (TOU/G)
    - Block 1: 6AM – 10AM
    - Block 2: 10AM – 3PM
    - Block 3: 3PM – 8PM
    - Block 4: 8PM – 6AM
- Seasonal (current implementation Summer vs. Winter)
  - Current implementation is to vary the energy block limits up from summer to winter.
  - Time shift for time varying rate can be added for seasonality since OPALCO morning and afternoon system peaks shift from winter to summer by approximately an hour.

Rate Component Options: Demand

- Non-coincidental per member Demand
  - Intended to recover revenue associated with capacity of system used
  - As seen in OPALCO large commercial tariff
  - Ratcheting 12 month rolling maximum
  - Monthly Reset
- Time-of-Demand
  - Intended to recover cost associated with power cost as system coincidental peak(s).
  - Demand at a prescribed time or for each TOU/G time block

Income Statement Categories

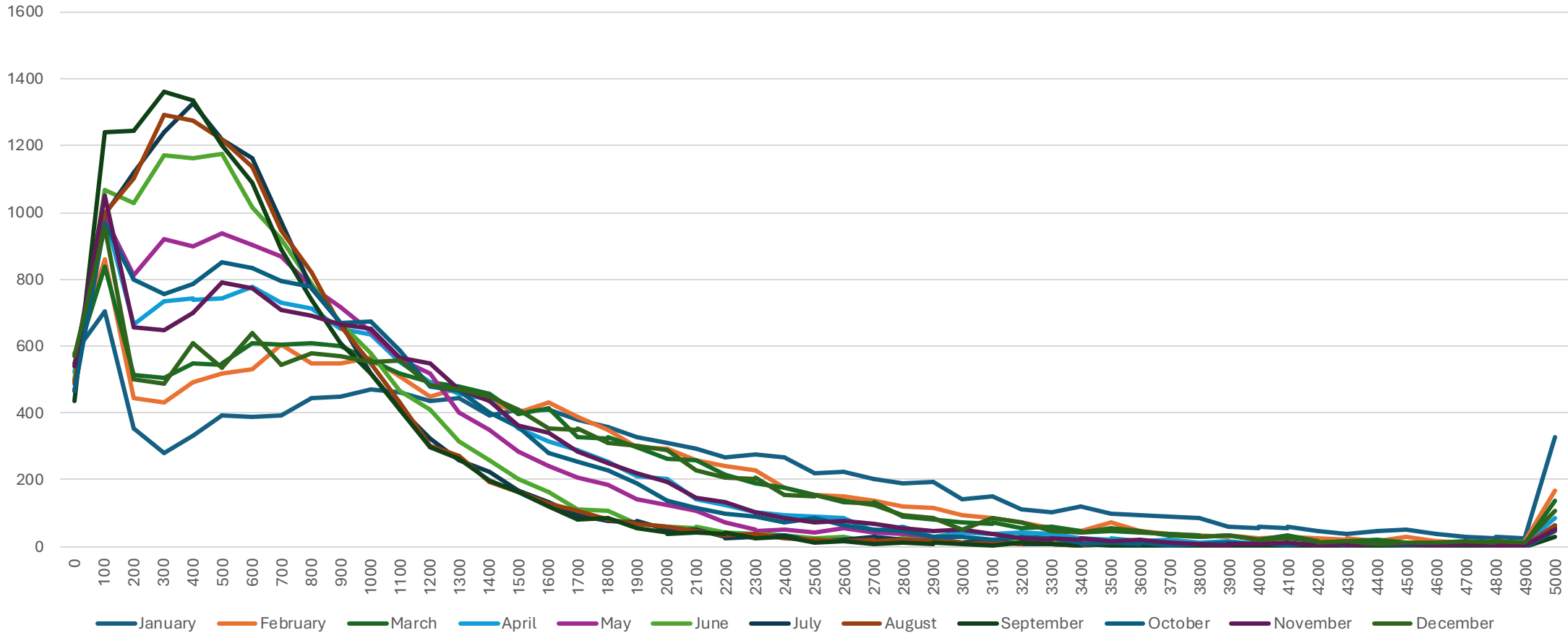


*data based on 2023

What rate components collect for each expense?

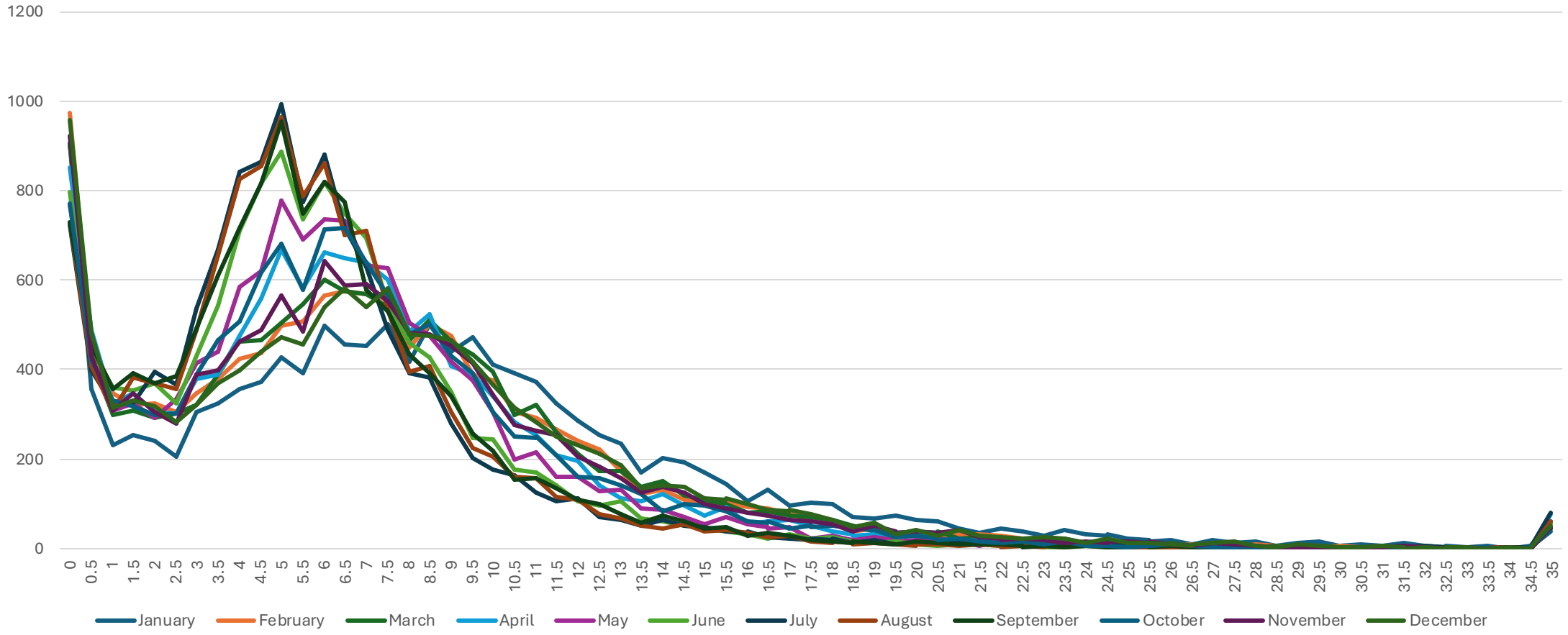
- Fixed
  - MS and Admin (16%)
  - Distribution O&M (24%)
  - Transmission O&M (4%)
  - Partial Capital (Grid) – Base system (remainder from Demand) (21%)
- Energy (Classic or TOU/G)
  - Purchased Power Energy (18%)
- Demand
  - Purchased Power Demand (5%)
  - Partial Capital (Grid) – Oversized infrastructure (not covered in fixed)
    - Grid Infrastructure (10%)
    - Large Residential Systems (2%)

Residential Usage Frequency Chart



*data based on Sept 2023 – Aug 2024

Residential Demand Frequency Chart



*data based on Sept 2023 – Aug 2024

Estimated Residential Demand Revenue Generation

Month	**Est. Revenue Generated with $1/kW charge** for Hourly Non-coincidental Demand *data based on Sept 2023 – Aug 2024	
January	108,187	10.5%
February	91,308	8.9%
March	92,819	9.0%
April	86,291	8.4%
May	81,727	8.0%
June	74,434	7.3%
July	74,572	7.3%
August	72,507	7.1%
September	73,398	7.2%
October	85,705	8.4%
November	90,846	8.9%
December	94,471	9.2%
Total	**$1,026,264**	

Next Step – Schedule

- 2025 Rate Analysis
- 2026 Implementation of Pilot Rate (Voluntary)
- 2027 Meter Replacement Completed
- 2028 Full System Adoption