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Leina Mathis
Ben Shakespeare
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CITY COUNCIL

Meeting Date: November 3, 2021 **Agenda Item:** 3

Applicant: Santa Clara City Power Department

Requested by: Gary Hall

Subject: Santa Clara Electric Department Cost of Service and Rate Design

Description:

- Review Electric Department
- Financial Projections & Target
- Debt Coverage Ratio
- Minimum Cash
- Target Operating Income
- Review Cost of service results
- Monthly Customer Charges
- Usage Charges
- Discussion Items
- Power Cost Adjustment
- Rate Design

Recommendation: Discussion

Cost: N/A

Legal Approval: N/A

Finance Approval: Yes

Budget Approval: Yes

Attachments:
https://sccity.org/wp-content/uploads/formidable/41/Santa-Clara-ECOS-Draft-Results-V9.pptx

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Santa Clara Electric Department Cost of Service and Rate Design

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President
Utility Financial Solutions
616-393-9722

November 3, 2021

Discussion

- Review Electric Department
  - Financial Projections & Targets
    - Debt Coverage Ratio
    - Minimum Cash
    - Target Operating Income
- Review Cost of service results
  - Monthly Customer Charges
  - Usage Charges
- Discussion Items
  - Power Cost Adjustment
  - Rate Design

Electric Assumptions

- Annual Inflation (CPI)
  - 2022 – 2026
    - 2.2%
- Annual Growth (UAMPS)
  - 2022 – 8.3%
  - 2023 – 3.5%
  - 2024 – 3.5%
  - 2025 – 3.5%
  - 2026 – 0.5%
- Power Supply Change
  - 2022
    - 1.0%
  - 2023 - 2026
    - 3.0%

- Anticipated Capital Improvement Plan and Projected Bonding
  - 2022 includes addition of two 2.5MW generators
  - 2025 includes a substation upgrade

Fiscal Year	Capital Improvements Plan	Bond Issues Including Fees	Period	Rate
2022	$ 5,500,000	$ 2,532,000	15	1.90%
2023	130,000	-	-	0.00%
2024	1,450,000	-	-	0.00%
2025	2,250,000	2,000,000	15	4.00%
2026	90,000	-	-	0.00%

Debt Coverage Ratio (Current Rates)

Description	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
Debt Coverage Ratio					
Net Income	$ 237,371	$ 266,493	$ 287,449	$ 181,709	$ 124,837
Add Depreciation/Amortization Expense	631,862	634,462	666,062	740,062	786,862
Add Interest Expense	90,630	87,244	79,290	151,233	139,015
Cash Generated from Operations	$ 959,864	$ 988,199	$ 1,032,801	$ 1,073,004	$ 1,050,714
Debt Principal and Interest	$ 588,105	$ 607,521	$ 601,422	$ 784,157	$ 786,899
Projected Debt Coverage Ratio (Covenants)	**1.63**	**1.63**	**1.72**	**1.37**	**1.34**
Minimum Debt Coverage Ratio	**1.40**	**1.40**	**1.40**	**1.40**	**1.40**

Minimum Cash Recommendation (Current Rates)

Description	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
Minimum Cash Reserve Allocation					
Operation & Maintenance Less Depreciation Expense	12.3%	12.3%	12.3%	12.3%	12.3%
Purchase Power Expense	13.8%	13.8%	13.8%	13.8%	13.8%
Historical Rate Base	1%	2%	2%	1%	2%
Current Portion of Debt Service Payment	83%	83%	83%	83%	83%
Five Year Capital Improvements - Net of bond proceeds	20%	20%	20%	20%	20%
% Plant Depreciated	48%	51%	50%	49%	52%
Calculated Minimum Cash Level					
Operation & Maintenance Less Depreciation Expense	$ 180,422	$ 184,364	$ 188,392	$ 192,509	$ 196,715
Purchase Power Expense	443,896	472,953	503,921	536,926	555,758
Historical Rate Base	213,590	429,779	458,779	251,890	505,579
Current Portion of Debt Service Reserve	488,127	504,243	499,180	650,850	653,126
Five Year Capital Improvements - Net of bond proceeds	562,400	562,400	562,400	562,400	562,400
Minimum Cash Reserve Levels	**$ 1,888,434**	**$ 2,153,739**	**$ 2,212,673**	**$ 2,194,575**	**$ 2,473,579**
Projected Cash Reserves	**$ 2,300,733**	**$ 2,551,411**	**$ 1,532,790**	**$ 1,571,637**	**$ 1,745,452**

Target Operating Income (Current Rates)

Description	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
Target Operating Income Determinants					
Net Book Value/Working Capital	$ 11,123,100	$ 10,618,638	$ 11,402,576	$ 12,912,514	$ 12,215,652
Outstanding Principal on Debt	5,608,525	5,088,248	4,566,116	5,933,192	5,285,308
System Equity	$ 5,514,575	$ 5,530,390	$ 6,836,460	$ 6,979,322	$ 6,930,344
Debt:Equity Ratio	50%	48%	40%	46%	43%
Target Operating Income Allocation					
Interest on Debt	1.62%	1.71%	1.74%	2.55%	2.63%
System Equity	5.95%	6.27%	6.24%	6.05%	6.42%
Target Operating Income					
Interest on Debt	$ 90,630	$ 87,244	$ 79,290	$ 151,233	$ 139,015
System Equity	$ 328,268	$ 346,948	$ 426,348	$ 422,060	$ 444,589
Target Operating Income	**$ 418,898**	**$ 434,192**	**$ 505,638**	**$ 573,293**	**$ 583,605**
Projected Operating Income	**$ 3,357**	**$ 42,233**	**$ 53,982**	**$ 25,278**	**$ (44,006)**
Rate of Return in %	**3.8%**	**4.1%**	**4.4%**	**4.4%**	**4.8%**

Projection without Rate Change

Fiscal Year	Projected Rate Adjustments	Debt Coverage Ratio	Adjusted Operating Income	Target Operating Income	Projected Cash Balances	Recommended Minimum Cash
2022	0.0%	1.63	$ 3,357	$ 418,898	$ 2,300,733	$ 1,888,434
2023	0.0%	1.63	42,233	434,192	2,551,411	2,153,739
2024	0.0%	1.72	53,982	505,638	1,532,790	2,212,673
2025	0.0%	1.37	25,278	573,293	1,571,637	2,194,575
2026	0.0%	1.34	(44,006)	583,605	1,745,452	2,473,579

Projection with Rate Change

Fiscal Year	Projected Rate Adjustments	Debt Coverage Ratio	Adjusted Operating Income	Target Operating Income	Projected Cash Balances	Recommended Minimum Cash
2022	2.5%	1.85	$ 130,632	$ 418,898	$ 2,428,008	$ 1,888,434
2023	2.5%	2.08	314,490	434,192	2,951,579	2,153,739
2024	2.5%	2.44	484,849	505,638	2,365,826	2,212,673
2025	0.0%	1.94	471,225	573,293	2,854,786	2,194,575
2026	0.0%	1.91	404,171	583,605	3,483,194	2,473,579

Revised Projection with Rate Change

Fiscal Year	Projected Rate Adjustments	Debt Coverage Ratio	Adjusted Operating Income	Target Operating Income	Projected Cash Balances	Recommended Minimum Cash
2022	2.5%	1.85	$ 130,632	$ 418,898	$ 2,428,008	$ 1,888,434
2023	2.5%	1.86	182,490	434,192	2,819,579	2,170,013
2024	2.5%	2.21	349,965	505,638	2,098,282	2,229,302
2025	2.5%	1.97	491,550	573,293	2,606,229	2,211,568
2026	2.5%	2.26	677,987	583,605	3,507,210	2,507,288

Revised projection includes

- Salary Addition (Lineman) in 2023 of $132k
- Working toward $3.5M - $4.0M in cash reserves
- 3.5% growth in 2026

UFS recommends updating the Financial Projection in 2024, prior to implementing the 2025 and 2026 adjustments

Electric Cost of Service Results

Customer Class	Cost of Service	Projected Revenues	% Change
Residential (101)	$ 4,686,734	$ 4,356,473	7.6%
Small Commercial (103)	53,838	49,524	8.7%
City Street Lighting	39,158	-	0.0%
Medium Commercial (104)	260,161	238,173	9.2%
Large Commercial (105)	464,690	446,843	4.0%
Total	$ 5,504,582	$ 5,091,012	8.1%

Monthly Charge

Customer Class	COS Customer Charge	Current Average Customer Charge
Residential (101)	$ 19.33	$ 20.00
Small Commercial (103)	28.36	25.00
Medium Commercial (104)	75.81	34.00
Large Commercial (105)	196.80	87.00

What is a Power Cost Adjustment?

- A mechanism to help ensure power costs are recovered from customers
- PCA reduces Utility risk and exposure to changes in power supply costs
- Mitigates over/under recovery of power supply costs from customers

Six- Month Rolling Average PCA

- Power supply costs are reviewed each month
  - The PCA charged to customers changes monthly based on the average power cost over the previous 6-months
- Goal of balancing power costs every 6 months
  - Smooths out fluctuations while maintaining financial integrity

Power Cost Adjustment Calculation

Determining PCA Base (Example)			
Jul 2019 – Jun 2020	Power Supply $ / kWh's Sold	→ $\frac{\$}{kWh}$	= Base*
Determining October 2021 PCA			
Feb 2021 – Jul 2021	Power Supply $ / kWh's Sold	→ $\frac{\$}{kWh}$	= Rolling Average
October 2021 PCA = 6 Month Rolling Average – Base*			

- The difference between the rolling average and the base is the PCA for that month
- If power costs were less than the base, customers will receive a bill credit
- If power costs were higher than the base, customers will have a bill charge for the unrecovered power costs
- Due to timing of Power Supply Invoices, the PCA implemented may be based on lagged invoices – for example, October's PCA is based off Feb – Jul invoices

**Note: this is an example and base is not reset every year*

Example: PCA Implemented for 2020 (Typical year)

Average Residential Use: 1,230 kWh

Annual Dollar Impact for 2020: $13.49 per avg bill

PS Bill Month	6 Month PCA Implemented	Total PCA Revenue	Res Bill Units	Dollar Impact
Jan-20	$ 0.00215	$ 5,840	1,230	$ 2.64
Feb-20	$ 0.00155	$ 5,086	1,230	$ 1.90
Mar-20	$ 0.00040	$ 1,235	1,230	$ 0.49
Apr-20	$ (0.00109)	$ (2,994)	1,230	$ (1.34)
May-20	$ (0.00040)	$ (1,060)	1,230	$ (0.50)
Jun-20	$ (0.00141)	$ (3,745)	1,230	$ (1.73)
Jul-20	$ (0.00371)	$ (14,709)	1,230	$ (4.56)
Aug-20	$ (0.00424)	$ (20,721)	1,230	$ (5.21)
Sep-20	$ (0.00276)	$ (16,775)	1,230	$ (3.40)
Oct-20	$ 0.00646	$ 39,875	1,230	$ 7.95
Nov-20	$ 0.00672	$ 31,215	1,230	$ 8.27
Dec-20	$ 0.00730	$ 24,358	1,230	$ 8.98

2021 Power Cost Changes

Calendar Year	PS Cost $	kWh Sales	Avg $/kWh	Change	Under Recovery	Reserve Funded
2019	$ 2,844,913	44,059,426	$ 0.06457			
2020	3,248,333	46,632,292	0.06966	7.9%	$ 0.0040	$ 187,115
2021	2,925,193	34,730,040	0.08423	20.9%	$ 0.0186	$ 645,309

- PCA was built off a projection of power supply cost change with a base year of 2019
- Actual power supply cost increased 7.9% in 2020 and 20.9% in 2021
- These fluctuations are due to unforeseen market pressures
- Santa Clara currently funds these fluctuations through their cash reserves
- January 2021 PCA Forecasted at $0.0228 / kWh

Next Steps

- Rate Design
  - 2.5% adjustment for 3 years with +/- 1.0% bandwidth
    - Smallest increase 1.5% and largest increase 3.5%
- Power Cost Adjustment Implementation

Sample Residential Rate

Santa Clara Electric Department

Electric Rate Design

Residential (101)

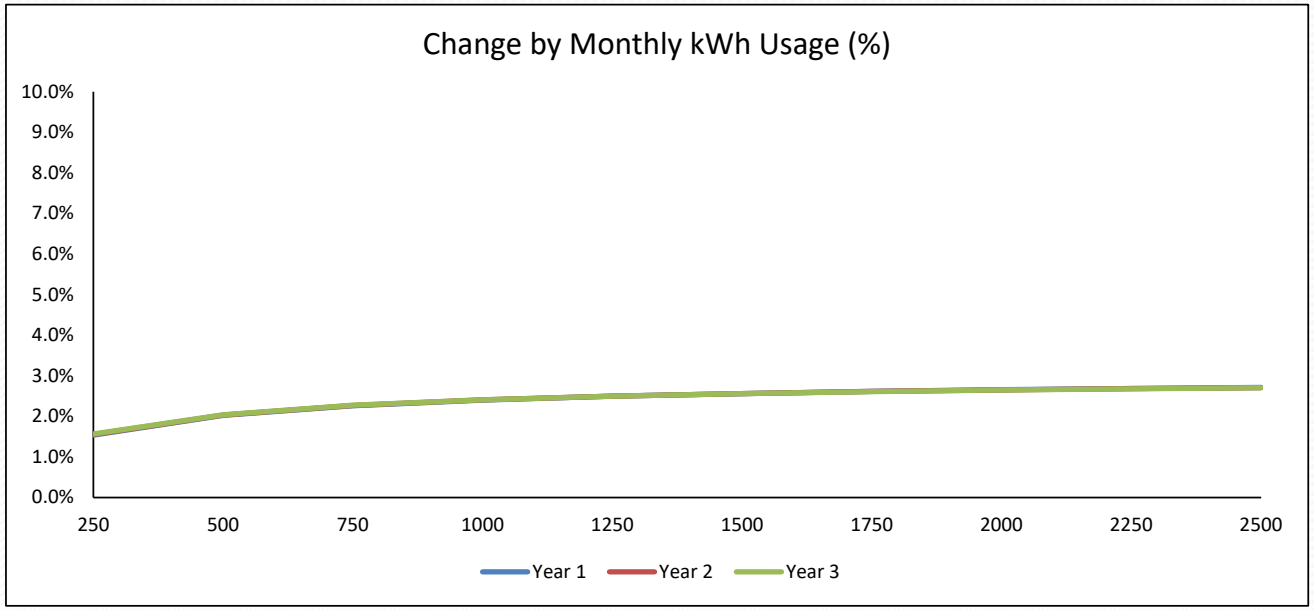
Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
All Customers	$ 20.00	$ 20.00	$ 20.00	$ 20.00
Energy Charge:				
Block 1 (0 - 500 kWh)	$ 0.08740	$ 0.08998	$ 0.09262	$ 0.09533
Block 2 (501 - 1,500 kWh)	$ 0.08850	$ 0.09111	$ 0.09379	$ 0.09653
Block 3 (Excess)	$ 0.09850	$ 0.10141	$ 0.10439	$ 0.10744
Revenue from Rate	$ 4,356,473	$ 4,465,384	$ 4,577,019	$ 4,691,445
Change from Previous		2.5%	2.5%	2.5%

Additional PCA Revenue (2021 cost)	$ 933,362
Monthly PCA $ (Avg User)	$ 28.53

Residential Monthly Impacts (base rate)

Average Use: 1,229 kWh

Chart Data ($ Change)	Year 1	Year 2	Year 3
250	$ 0.64	$ 0.66	$ 0.68
500	$ 1.29	$ 1.32	$ 1.35
750	$ 1.94	$ 1.99	$ 2.04
1000	$ 2.60	$ 2.66	$ 2.73
1250	$ 3.25	$ 3.33	$ 3.41
1500	$ 3.90	$ 4.00	$ 4.10
1750	$ 4.63	$ 4.74	$ 4.86
2000	$ 5.35	$ 5.49	$ 5.63
2250	$ 6.08	$ 6.23	$ 6.39
2500	$ 6.81	$ 6.98	$ 7.15



Sample Small Commercial Rate

Santa Clara Electric Department

Electric Rate Design

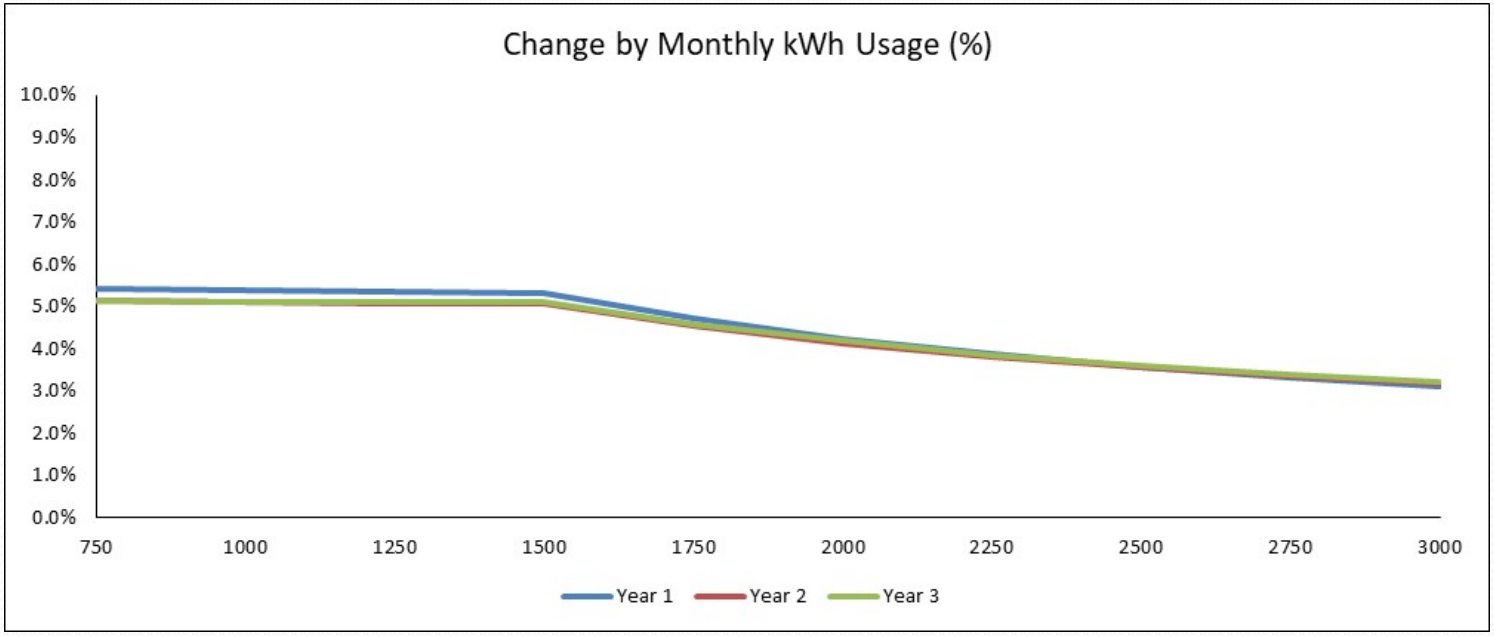
Small Commercial (103)

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
All Customers	$ 25.00	$ 26.50	$ 28.00	$ 29.50
Energy Charge:				
Block 1 (0 - 1,500 kWh)	$ 0.08740	$ 0.09194	$ 0.09651	$ 0.10139
Block 2 (Excess)	$ 0.09850	$ 0.09930	$ 0.10037	$ 0.10139
Revenue from Rate	$ 49,524	$ 51,257	$ 53,051	$ 54,908
Change from Previous		3.5%	3.5%	3.5%
Additional PCA Revenue (2021 cost)	$ 9,969			
Monthly PCA $ (Avg User)	$ 27.69			

Small Commercial Monthly Impacts (base rate)

Average Use: 1,213 kWh

Chart Data ($ Change)	Year 1	Year 2	Year 3
750	$ 4.91	$ 4.92	$ 5.16
1000	$ 6.04	$ 6.06	$ 6.38
1250	$ 7.18	$ 7.20	$ 7.60
1500	$ 8.32	$ 8.34	$ 8.82
1750	$ 8.52	$ 8.61	$ 9.08
2000	$ 8.72	$ 8.88	$ 9.33
2250	$ 8.92	$ 9.14	$ 9.59
2500	$ 9.12	$ 9.41	$ 9.85
2750	$ 9.32	$ 9.68	$ 10.10
3000	$ 9.51	$ 9.94	$ 10.36



Sample Medium Commercial Rate

Santa Clara Electric Department

Electric Rate Design

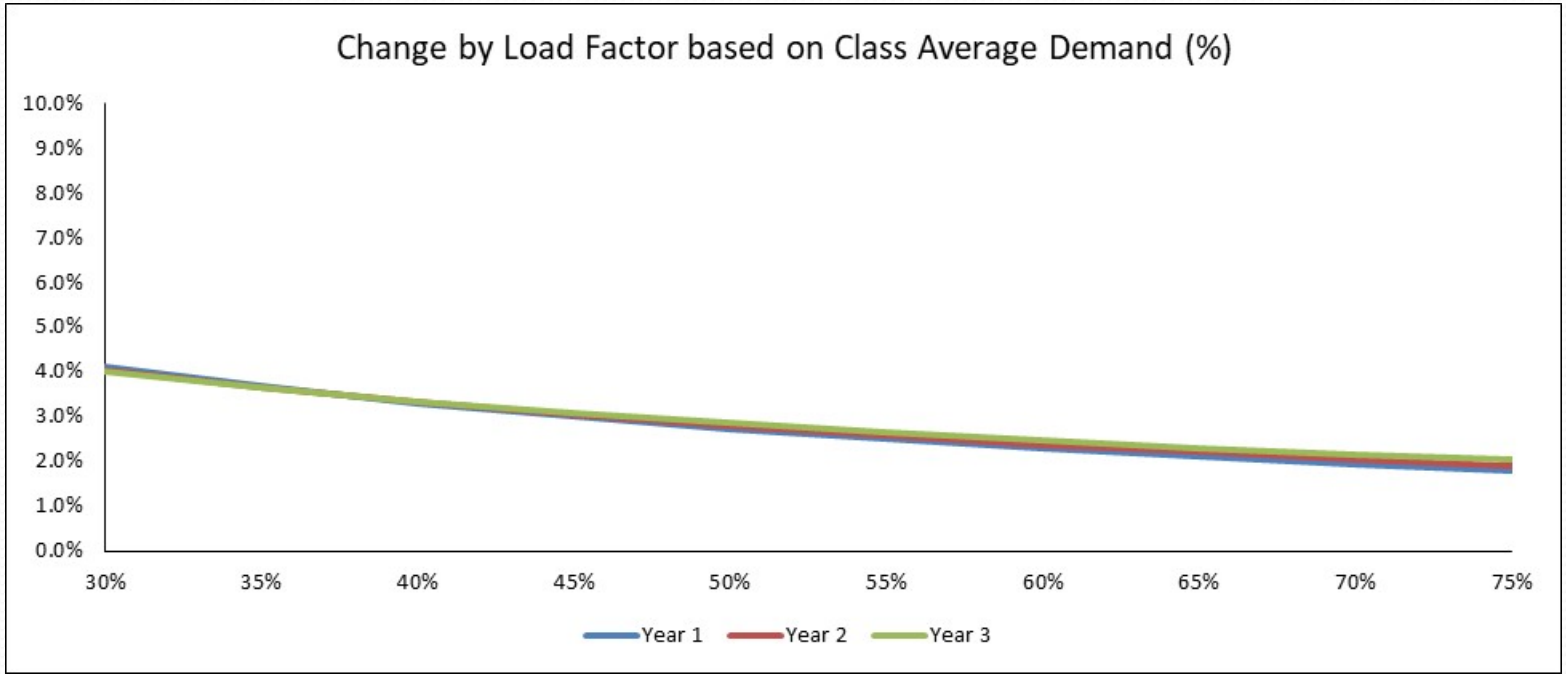
Medium Commercial (104)

Rates		Current		Year 1		Year 2		Year 3
Monthly Facilities Charge:								
Monthly Charge	$	34.00	$	44.00	$	54.00	$	64.00
Energy Charge:								
All Energy	$	0.06670	$	0.06601	$	0.06546	$	0.06505
Demand Charge								
All Demand	$	9.60	$	10.10	$	10.60	$	11.10
Revenue from Rate	$	238,173	$	246,509	$	255,136	$	264,066
Change from Previous				3.5%		3.5%		3.5%

Additional PCA Revenue (2021 cost)	$	48,848
Monthly PCA $ (Avg User)	$	83.07

Medium Commercial Monthly Impacts (base rate)

Load Factor (% Change)	Year 1	Year 2	Year 3
30%	4.1%	4.0%	4.0%
35%	3.7%	3.7%	3.6%
40%	3.3%	3.3%	3.3%
45%	3.0%	3.0%	3.1%
50%	2.7%	2.8%	2.9%
55%	2.5%	2.6%	2.6%
60%	2.3%	2.4%	2.5%
65%	2.1%	2.2%	2.3%
70%	1.9%	2.1%	2.2%
75%	1.8%	1.9%	2.0%



Sample Large Commercial Rate

Santa Clara Electric Department

Electric Rate Design

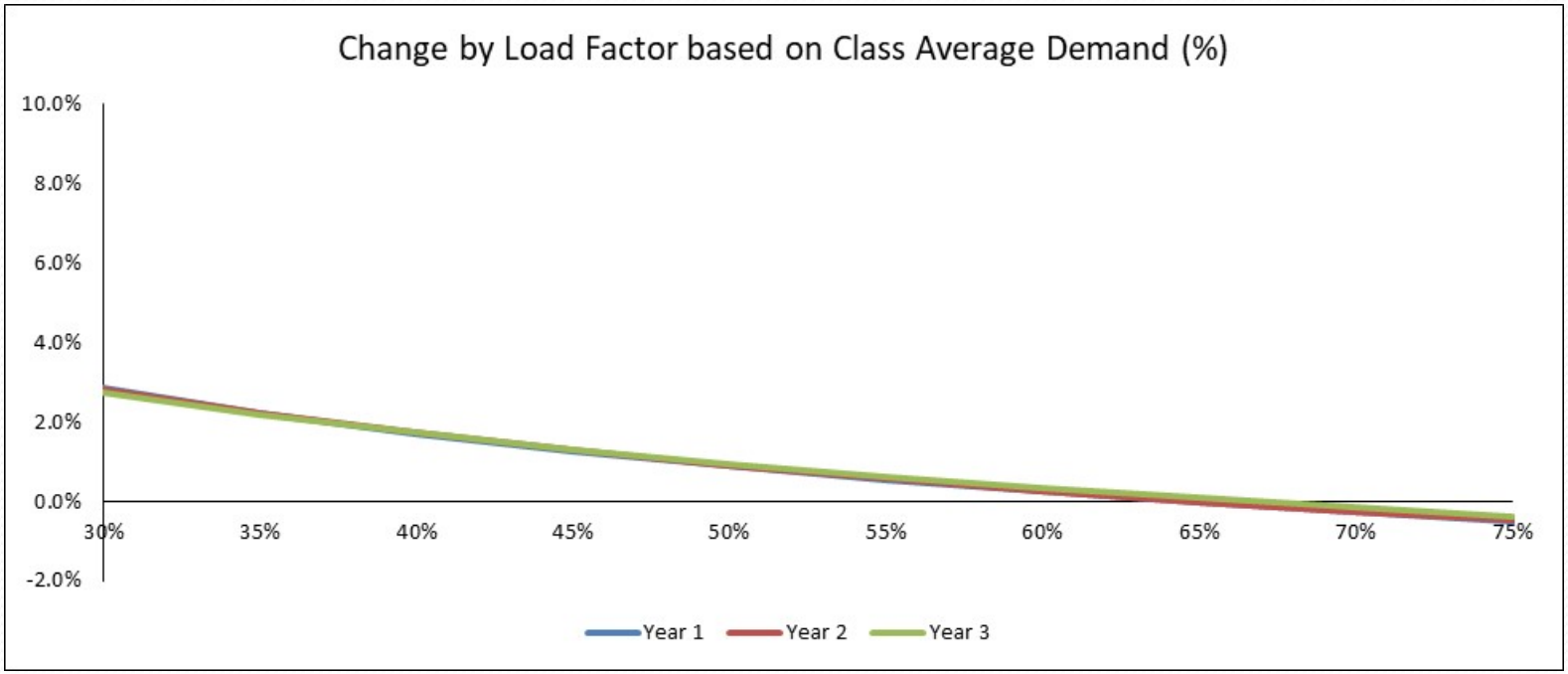
Large Commercial (105)

Rates	Current	Year 1	Year 2	Year 3
Monthly Facilities Charge:				
Monthly Charge	$ 87.00	$ 125.00	$ 165.00	$ 200.00
Energy Charge:				
All Energy	$ 0.05650	$ 0.05384	$ 0.05117	$ 0.04865
Demand Charge				
All Demand	$ 10.55	$ 11.55	$ 12.55	$ 13.55
Revenue from Rate	$ 446,843	$ 454,886	$ 463,074	$ 471,409
Change from Previous		1.8%	1.8%	1.8%

Additional PCA Revenue (2021 cost)	$ 106,887
Monthly PCA $ (Avg User)	$ 989.69

Large Commercial Monthly Impacts (base rate)

Load Factor (% Change)	Year 1	Year 2	Year 3
30%	2.8%	2.8%	2.7%
35%	2.2%	2.2%	2.2%
40%	1.7%	1.7%	1.7%
45%	1.3%	1.3%	1.3%
50%	0.9%	0.9%	1.0%
55%	0.5%	0.6%	0.6%
60%	0.2%	0.3%	0.3%
65%	0.0%	0.0%	0.1%
70%	-0.3%	-0.3%	-0.1%
75%	-0.5%	-0.5%	-0.4%



Questions