



OTTAWA RIVER **POWER**

REVIEW MEETING:
DISTRIBUTION SYSTEM PLAN 2022-2026
COST OF SERVICE 2022
AUGUST 19 2021

Agenda

Distribution System Plan

2022-2026

Review of plan and CAPEX

Q&A / Discussion

- *Motion to Approve DSP*

Operating Expense Review

Review OPEX

Q&A / Discussion

Cost of Service 2022

Application Analysis

Q&A/Discussion

LRAM Review

Background

Impact Analysis

Q&A/Discussion

- *Motion to Approve ORPC COS Filing 2022-2026*
- *Motion to Approve Filing Extension*

Meeting Adjournment

Distribution System Plan 2022-2026





Executive Summary

- Started in November 2019
- Provides important information on system planning
- Developed through data collection from many resources
- Created in consultation with regional and local stakeholders

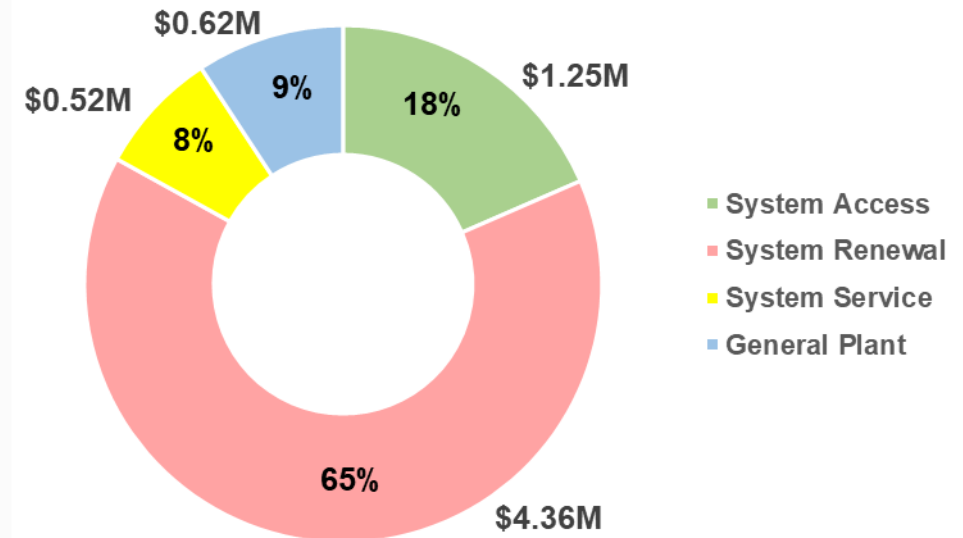


Investment Strategy

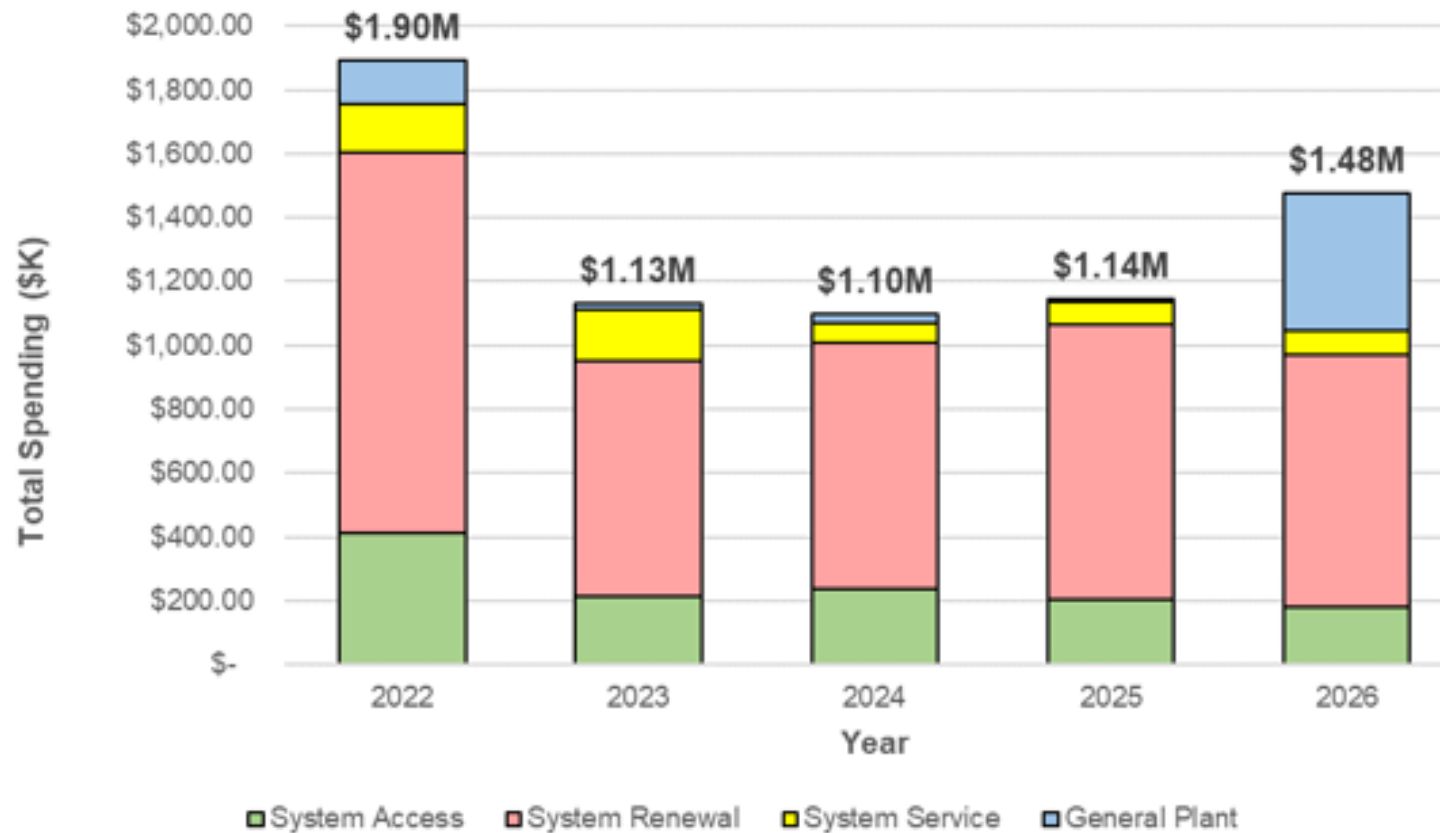
- Focus on all four OEB defined categories
 - System Access
 - System Renewal
 - System Service
 - General Plant
- Program evaluation process used to determine prioritization and pacing of project
- Historical information, inspection and testing data and forecast information used during DSP development
- Overall spending profile metric, targeted at +/-10% each year

Forecasted Capital Expenditures (CAPEX)

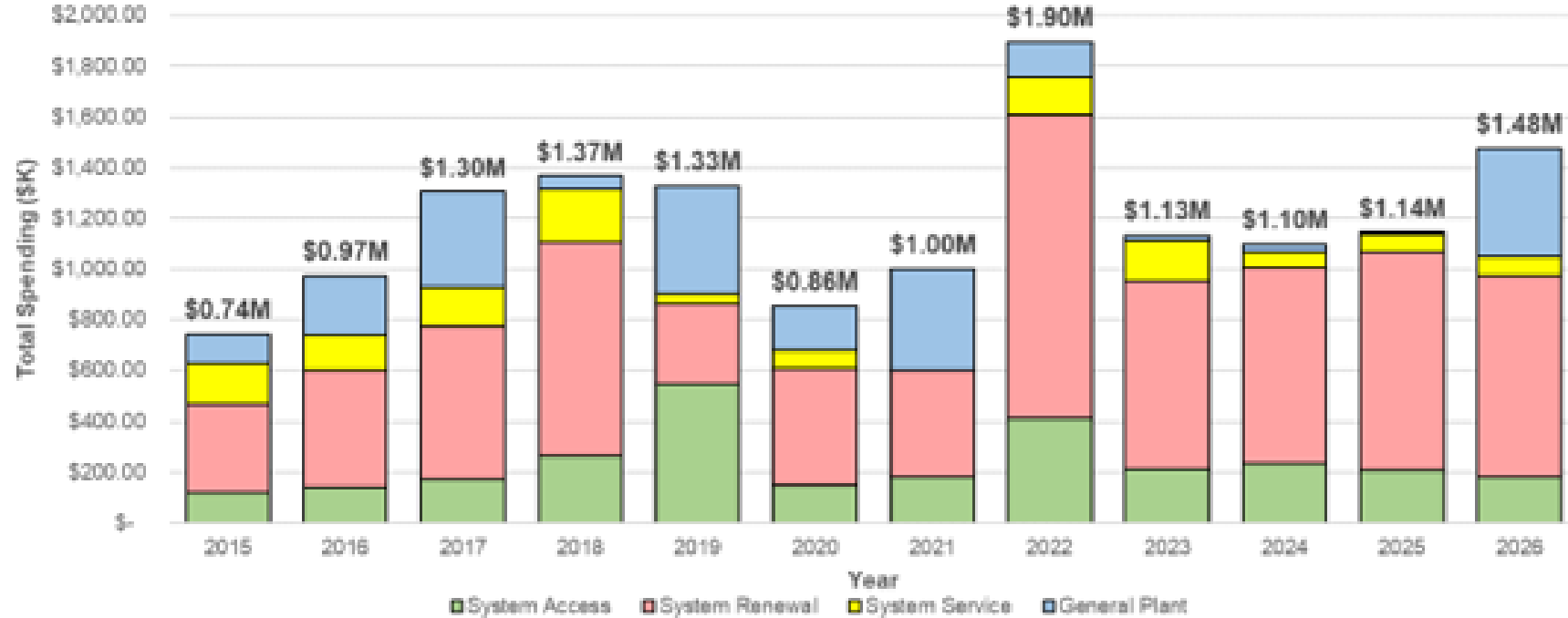
OEB Category	Program	Definition
System Access	Customer Connections	The connection of minor (residential) and major (condos, commercial properties, and other large developments) customers to the distribution system.
	Metering	Investments related to the ORPC's metering technologies to ensure reliable measurement of electricity acquired by the utility.
	Externally Initiated Plant Relocation	Replacement and/or relocation of asset infrastructure due to third-party (customer) needs (e.g., city-related or transportation-related initiatives)
System Renewal	Underground Renewal	Replacement of underground distribution infrastructure, including underground transformers and cables that are past their TUL and/or in Poor or Very Poor condition, along with transformers containing PCB's.
	Overhead Renewal	Replacement of overhead distribution infrastructure, including overhead pole-mount transformers, poles and conductor that are past TUL and/or in Poor or Very Poor condition, as well as conversion of 4.16kV overhead infrastructure and replacement of transformers containing PCB's.
	Stations Renewal	Replacement of substation infrastructure, including power transformers, circuit breakers, protection relays, station switches and battery banks that are past TUL and/or in Poor or Very Poor condition.
System Service	System Enhancement	Modifications to the system to address system-wide critical issues, including the mitigation of operational constraints as well as security of supply issues within the system.
	Station Expansion	Modifications to the substation assets to address critical station-level issues, including communication & controls.
General Plant	Information Technology	Upgrades to critical IT infrastructure providing support to the 24/7 operations of the utility.
	Operational Technology	Upgrades to critical tools and testing technologies leveraged by field personnel.
	Facilities	Management of the utilities' facilities infrastructure, including ORPC's office buildings and substation properties.
	Fleet	Replacement of Vehicles to support the 24/7 operations of the utility: Maintenance, support capital projects, respond to emergency outages.



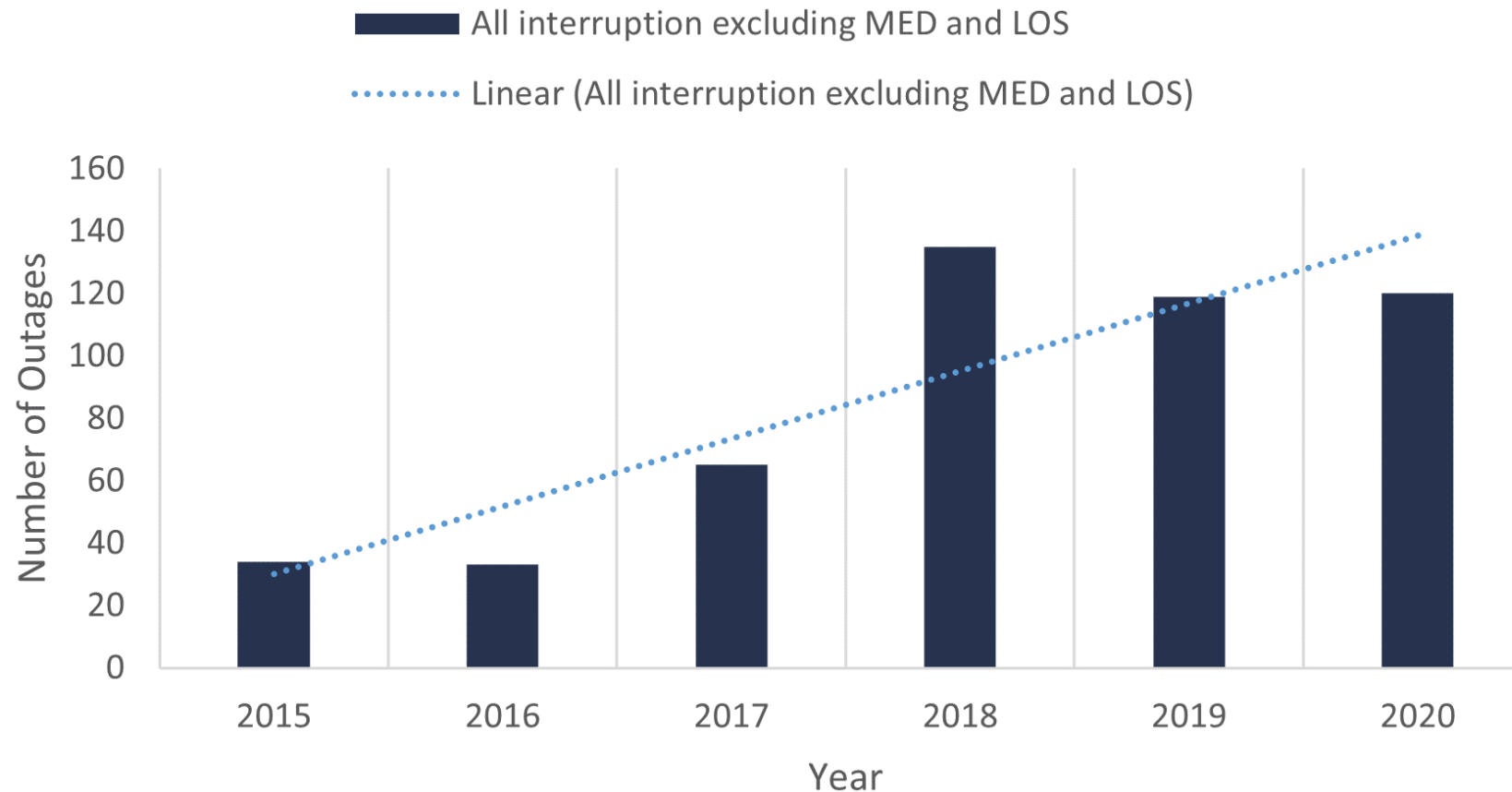
Forecasted CAPEX 2022-2026



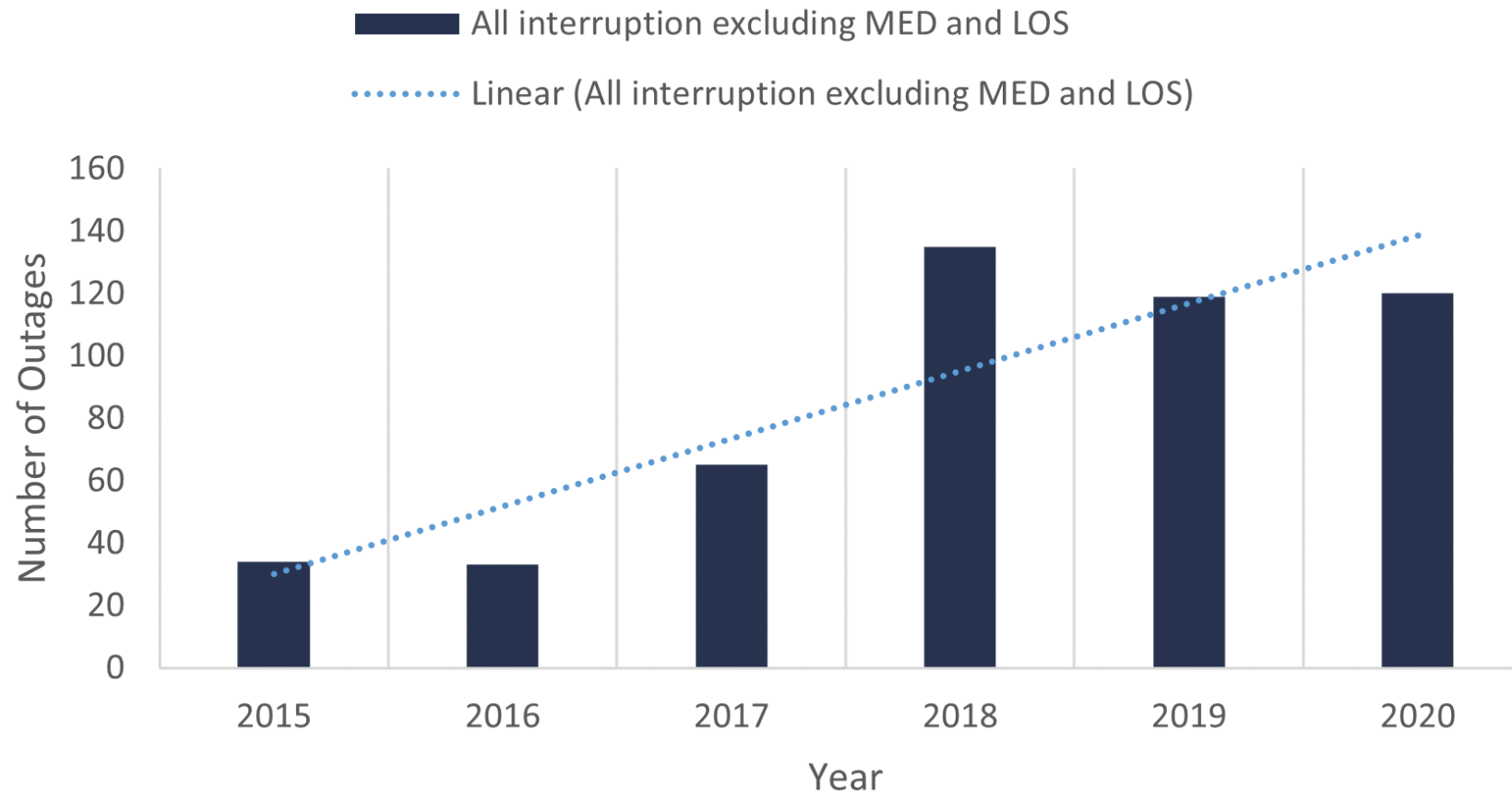
Historical and Forecasted CAPEX 2015-2026



Reliability and Asset Condition

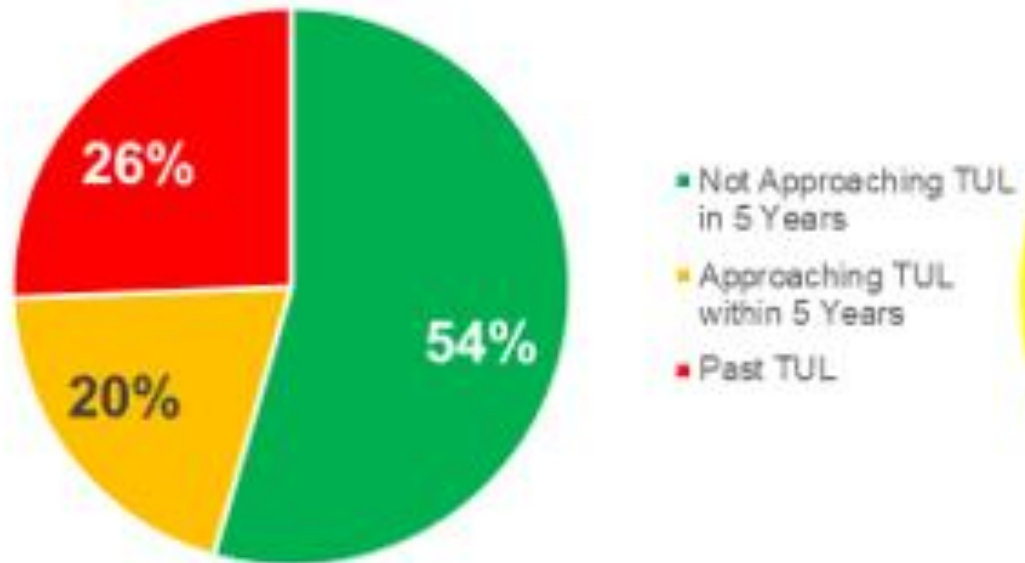


Reliability and Asset Condition

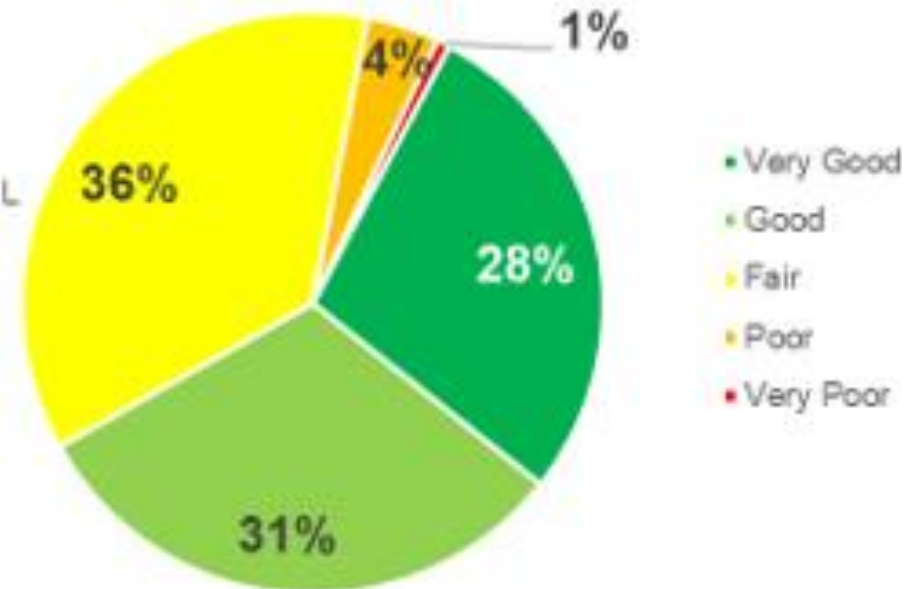


Reliability and Asset Condition

Assets Past Useful Life (APUL)



Condition Demographics Results





Focusing on Achievement

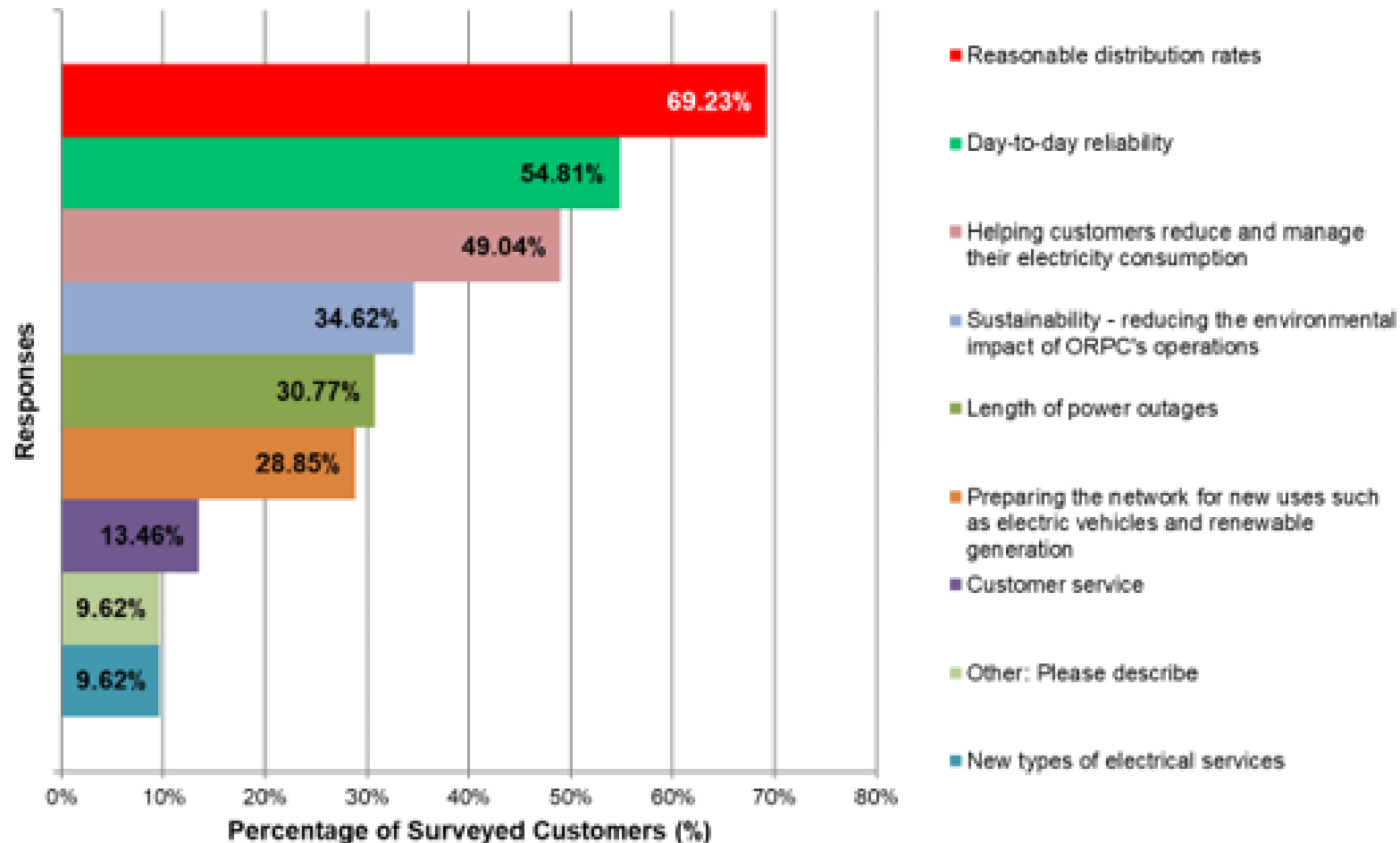
Four Key Performance Outcomes

1. Customer Focus
2. Operational Effectiveness
3. Public Policy Responsiveness
4. Financial Performance:

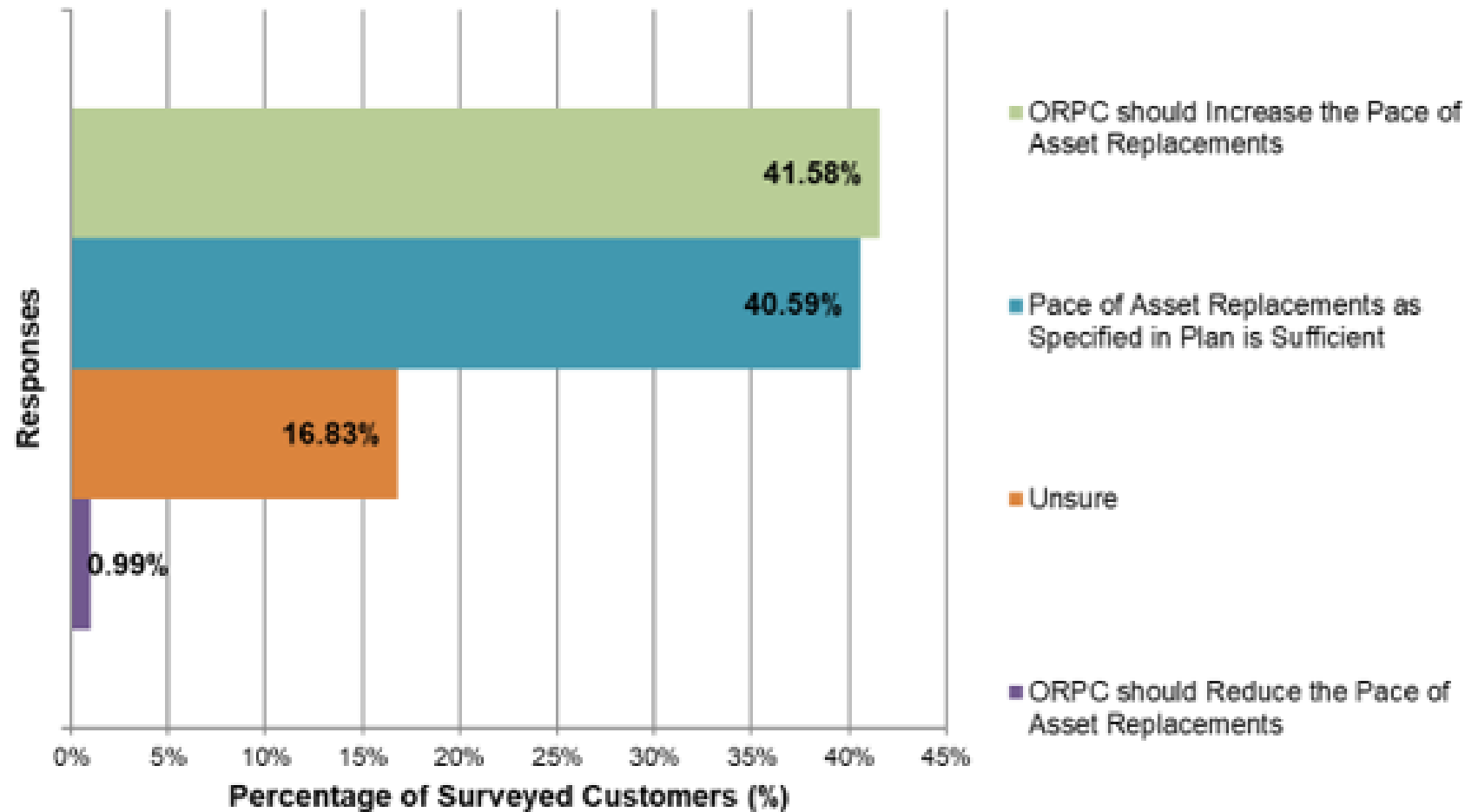
Addressing Customer Needs & Preferences

Customer Engagement Activity	Methodology	Number of Customers Engaged (2017 – 2020)
2017 Customer Satisfaction Survey	Phone Calls / Interviews	400
2018 Electrical Safety Authority Public Awareness Survey	Phone Calls / Interviews	400
2019 Customer Satisfaction Survey	Phone Calls / Interviews	400
2020 Electrical Safety Authority Public Awareness Survey	Phone Calls / Interviews	400
2020 ORPC Distribution System Plan Survey	Online	106
2021 Customer Satisfaction Survey	Phone Calls / Interviews	402
Total Customers Engaged (2015 – 2020)	Phone Calls / Interviews / Online	1,706

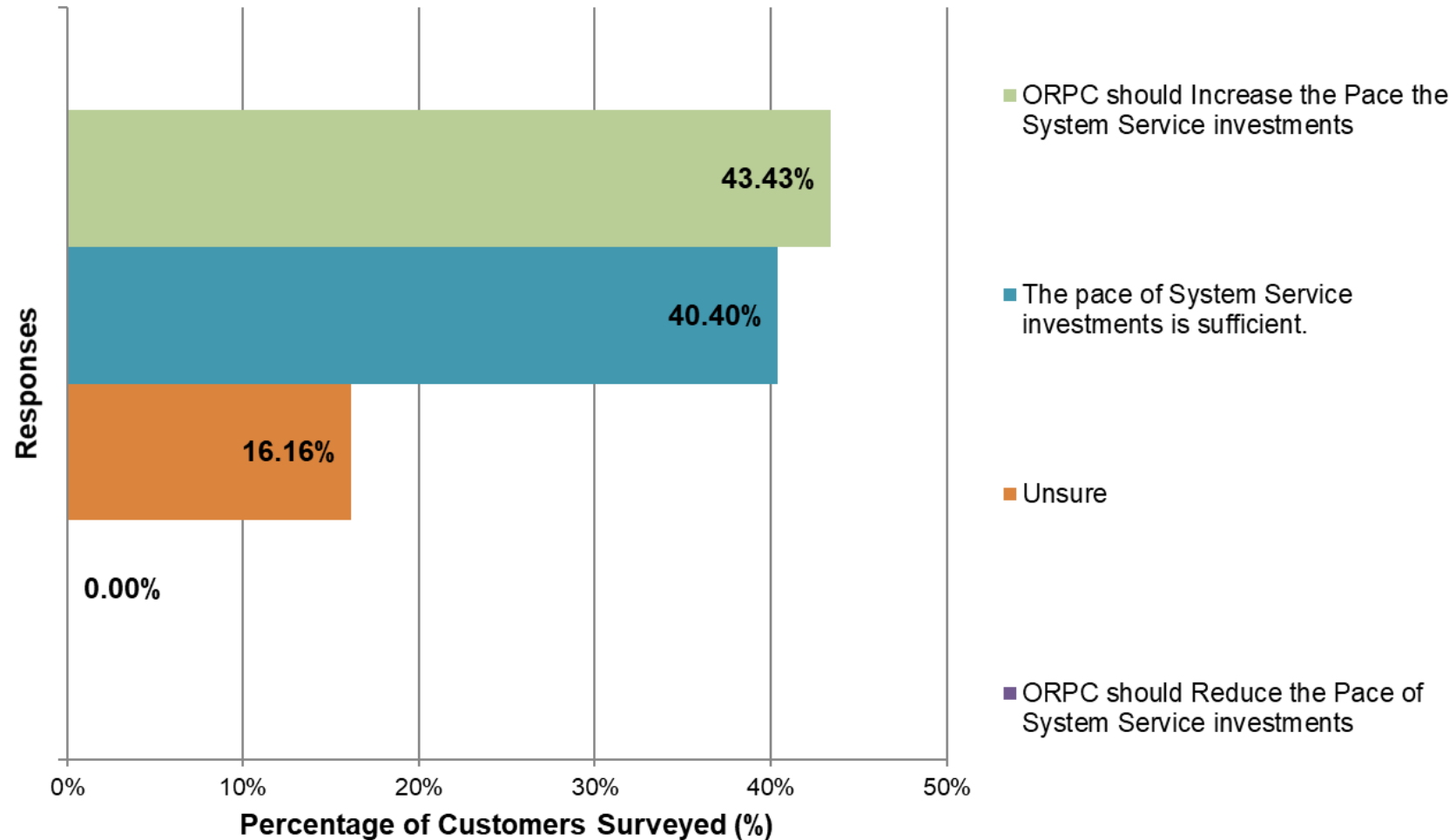
Top Customer Priorities



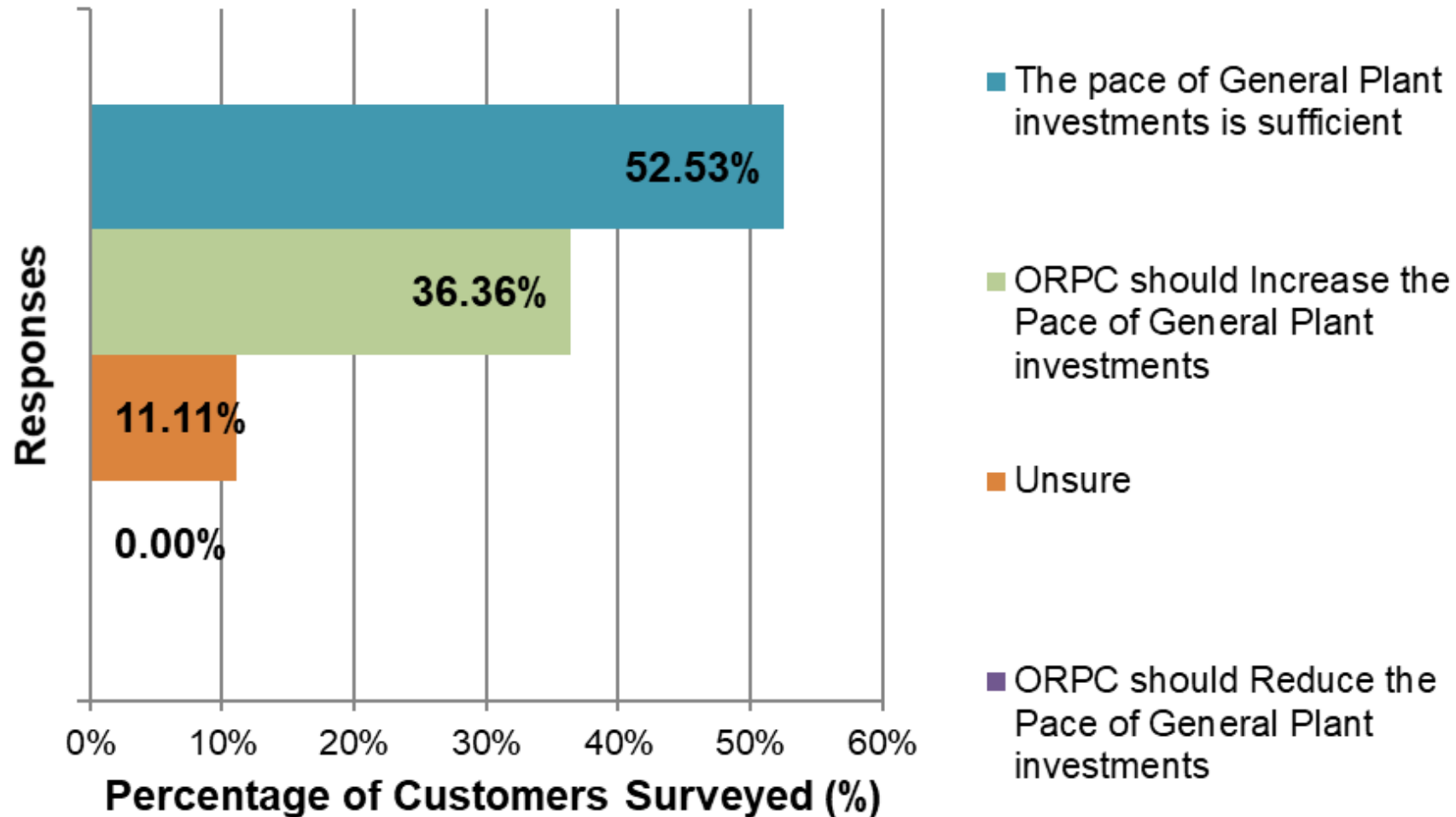
Asset Replacement Pacing Preferences



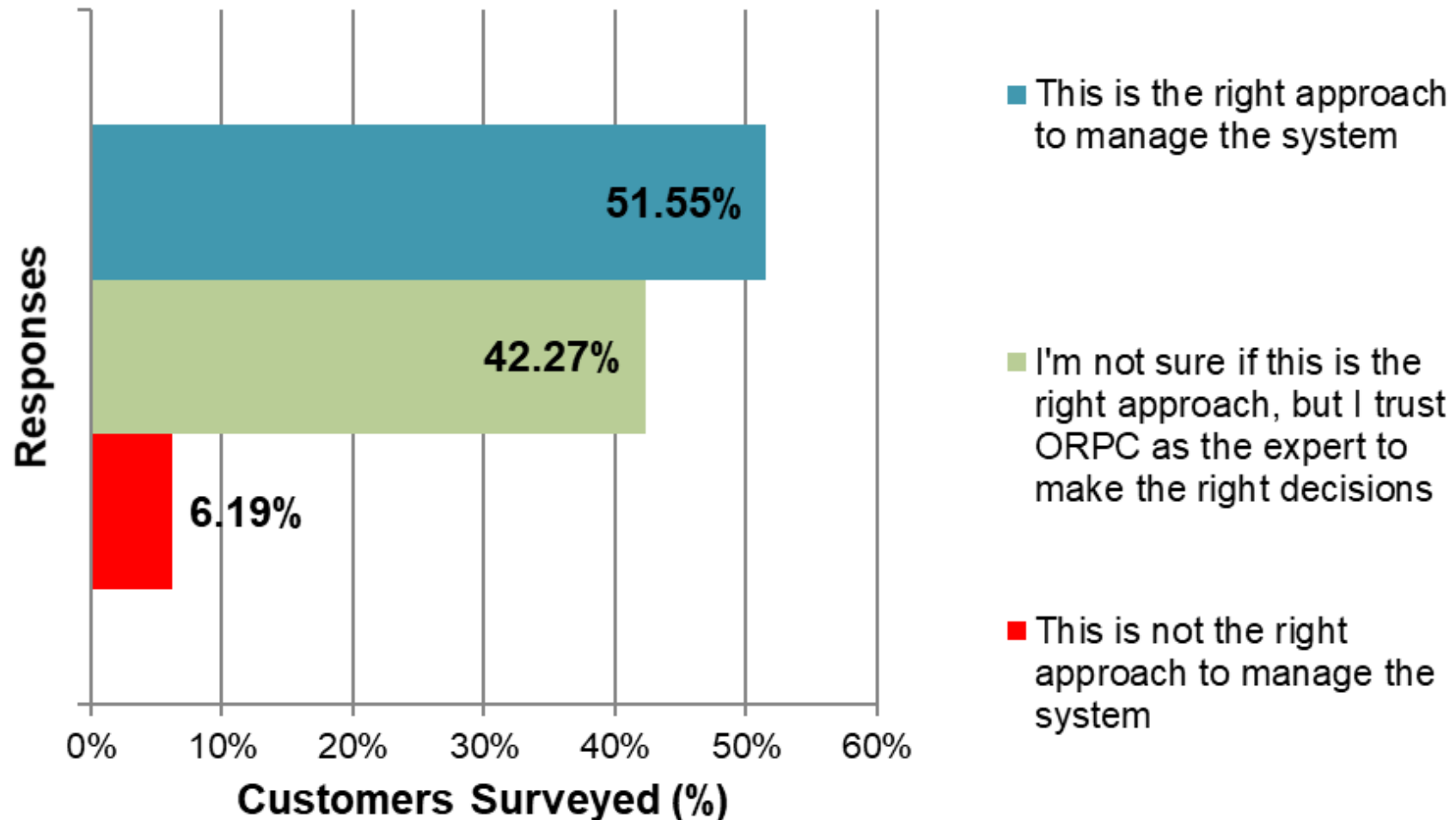
System Service Replacement Pacing Preferences



General Plant Replacement Pacing Preferences



Overall Customer Preferences on DSP Approach





Questions/Comments



Motion to Approve

Be it resolved that the Board of Directors of OPRC approve the Distribution System Plan for 2022-2226.

Operating Expenses (OPEX)

- Operating costs are necessary to comply with the Distribution System Code
- Consist of, but are not limited to:
 - the required expenditures necessary to maintain and operate ORPC's distribution system assets;
 - the costs associated with metering, billing, and collecting from ORPC's customers;
 - the costs associated with ensuring the safety of all stakeholders and costs to maintain distribution service quality and reliability
- For the several iterations of the budget, the bill impacts were analyzed and the OM&A budget modified to minimize bill impacts to the customers as much as possible

Operating Expenses (OPEX)

7 **Table 3 – OEB Appendix 2-JA – Summary of Recoverable OM&A Expenses**

	Board Approved	2016	2017	2018	2019	2020	2021	2022
Operations	\$529,246	\$630,729	\$565,513	\$484,252	\$513,327	\$785,741	\$815,322	\$901,091
Maintenance	\$673,343	\$613,081	\$692,292	\$500,384	\$645,567	\$501,236	\$562,975	\$576,747
SubTotal	\$1,202,589	\$1,243,810	\$1,257,805	\$984,636	\$1,158,895	\$1,286,976	\$1,378,298	\$1,477,837
%Change (year over year)		3.4%	1.1%	-21.7%	17.7%	11.1%	7.1%	7.2%
%Change (Test Year vs Last Rebasing Year - Actual)							14.6%	22.9%
Billing and Collecting	\$733,000	\$747,071	\$804,067	\$668,041	\$748,224	\$837,380	\$951,322	\$962,860
Community Relations	\$67,000	\$55,936	\$79,674	\$71,838	\$64,147	\$30,338	\$41,362	\$42,318
Administrative and General (LEAP)	\$1,062,375	\$886,993	\$1,121,542	\$1,076,915	\$1,235,810	\$1,203,797	\$1,158,155	\$1,225,378
SubTotal	\$1,862,375	\$1,690,000	\$2,005,283	\$1,816,794	\$2,048,181	\$2,071,515	\$2,150,839	\$2,230,557

Operating Expenses (OPEX)

Table 16 – 2016-2022 Inflationary Increase

	2022 at inflationary increase of 2%	2022 Projected	Var from inflationary increase
<i>Operations</i>	\$607,937	\$901,091	\$293,154
<i>Maintenance</i>	\$773,459	\$576,747	-\$196,712
<i>Billing and Collecting</i>	\$841,987	\$962,860	\$120,874
<i>Community Relations</i>	\$76,962	\$42,318	-\$34,644
<i>Administrative and General</i>	\$1,220,335	\$1,225,378	\$5,043
Total	\$3,520,680	\$3,708,394	\$187,714



Questions/Comments



Cost of Service 2022

Preliminary Analysis of Application

Capital Additions

	2016	2017	2018	2019	2020	2021	2022
Total System Access	75,894	100,107	357,050	468,091	123,723	186,655	409,700
Total System Renewal	580,784	605,967	860,657	328,749	221,396	474,649	1,247,780
Total System Service	167,879	156,475	221,884	47,622	44,231	1,134	2,164,754
Total General Plant	234,605	374,735	51,470	427,097	161,740	398,779	139,210

Total Capital Spending	1,059,161	1,237,284	1,491,061	1,271,558	551,090	1,061,217	3,961,443
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Capital Additions

OEB	Description	Opening Balance	Additions	Closing Balance
1611	Computer Software (Formally known as Account 1925)	\$382,902.66	\$55,000.00	\$437,902.66
1810	Leasehold Improvements	\$351,837.49	\$42,000.00	\$393,837.49
1820	Distribution Station Equipment <50 kV	\$1,518,959.53	\$810,000.00	\$2,328,959.53
1830	Poles, Towers & Fixtures	\$3,049,892.28	\$370,975.75	\$3,420,868.03
1835	Overhead Conductors & Devices	\$4,069,535.69	\$239,691.50	\$4,309,227.19
1840	Underground Conduit	\$806,099.26	\$59,970.29	\$866,069.55
1845	Underground Conductors & Devices	\$1,286,093.21	\$154,432.64	\$1,440,525.85
1850	Line Transformers	\$2,838,946.26	\$311,611.99	\$3,150,558.25
1855	Services (Overhead)	\$1,723,597.96	\$80,918.15	\$1,804,516.11
1860-15	Meters	\$2,096,687.71	\$113,530.89	\$2,210,218.60
1915	Office Furniture & Equipment (10 years)	\$87,512.80	\$5,000.00	\$92,512.80
1920-2	Computer Equipment - Hardware	\$260,986.28	\$11,000.00	\$271,986.28
1930-8	Transportation Equipment	\$1,522,189.94	\$5,000.00	\$1,527,189.94
1940	Tools, Shop & Garage Equipment	\$94,080.48	\$2,000.00	\$96,080.48
1945	Measurement & Testing Equipment	\$32,788.41	\$19,210.00	\$51,998.41
1980	System Supervisor Equipment	\$54,218.12	\$45,000.00	\$99,218.12
2440	Deferred Revenues	-\$1,433,629.17	-\$423,652.00	-\$1,857,281.17
	Sub-Total	\$18,254,818.39	\$1,901,689.21	\$20,156,507.60

Capital Additions - ICM

		2022
OEB	Description	ICM Additions
1508-1820	Distribution Station Equipment <50 kV	-\$1,918,546.72
1508-1830	Poles, Towers & Fixtures	-\$47,578.64
1508-1835	Overhead Conductors & Devices	-\$61,922.68
1508-1840	Underground Conduit	-\$10,308.64
1508-1845	Underground Conductors & Devices	-\$760.14
1508-1850	Line Transformers	-\$9,429.00
1508-1980	System Supervisory Equipment	-\$11,207.73
	Sub-Total	-\$2,059,753.55

Rate Base

The Proposed Rate Base is **\$13,282,025**

Particulars	Last Board Approved	2016	2017	2018	2019	2020	2021	2022
Net Capital Assets in Service:								
Average Gross Assets	30,265,128	12,684,917	13,833,139	15,197,310	16,364,217	16,989,599	17,724,210	19,205,663
Average Accumulated Depreciation	- 20,539,657	- 2,746,384	- 3,600,161	- 4,448,158	- 5,190,285	- 5,882,601	- 6,686,437	- 7,678,773
Average Balance	9,725,471	9,938,532	10,232,978	10,749,152	11,173,932	11,106,997	11,037,773	11,526,890
Working Capital Allowance	2,076,814	2,073,726	1,932,615	1,828,968	1,825,450	2,183,328	1,778,770	1,755,135
Total Rate Base	11,802,285	12,012,259	12,165,593	12,578,120	12,999,383	13,290,325	12,816,543	13,282,025

Customer Connection

Proposed customer/connection count for 2021-2022.

Based on a 2010-2020 geomean calculation, as required by the OEB. The results can be adjusted for known factors such as new subdivisions and new GS customers.

Customer Class Name	Actual	Projected	
	2020	2021	2022
Residential	9,959	10,074	10,191
GS<50 kW	1,277	1,270	1,264
GS 50 to 4999 kW	150	150	151
Sentinel Lighting	171	169	166
Street Lighting	2,905	2,927	2,949
Unmetered Scattered Load	19	19	19
TOTAL	14,481	14,610	14,741

Load Forecast

Proposed load forecast for 2021-2022. Based on a 2014-2020 regression analysis.

Consumption (kWh)	Actual	Projected	
	2020	2021	2022
Residential	85,141,857	80,335,302	80,335,302
GS<50 kW	26,233,400	29,637,405	29,637,405
GS 50 to 4999 kW	65,161,090	70,975,495	70,975,495
Sentinel Lighting	199,124	198,287	194,767
Street Lighting	1,015,667	1,072,667	1,080,789
Unmetered Scattered Load	602,100	606,879	606,879
TOTAL	178,353,238	182,826,035	182,830,637
Consumption (kW)	Actual	Projected	
	2020	2021	2022
GS 50 to 4999 kW	216,593	219,749	219,749
Sentinel Lighting	516	504	495
Street Lighting	2,832	3,004	3,027
TOTAL	219,941	223,258	223,271

Cost of Capital

Projected Income is \$655,302 which includes a component for covering to cost of debt of \$212,308 as well as the return on equity of \$442,994.

New parameters will be issued in November of 2021 in advance of our filing. They could be higher or lower however, if things return to normal, the assumption is that the deemed rates will go up.

Particulars	Capitalization Ratio		Cost Rate	Return
	(%)	(\$)	(%)	(\$)
Debt				
Long-term Debt	56.00%	\$7,436,348	2.73%	\$203,012
Short-term Debt	4.00% (1)	\$531,168	1.75%	\$9,295
Total Debt	60.0%	\$7,967,516	2.66%	\$212,308
Equity				
Common Equity	40.00%	\$5,311,677	8.34%	\$442,994
Preferred Shares		\$ -		\$ -
Total Equity	40.0%	\$5,311,677	8.34%	\$442,994
Total	100.0%	\$13,279,193	4.93%	\$655,302

Operating Expenses

	Board Approved	2016	2017	2018	2019	2020	2021	2022
Operations	\$529,246	\$630,729	\$565,513	\$484,252	\$513,327	\$785,741	\$815,322	\$901,091
Maintenance	\$673,343	\$613,081	\$692,292	\$500,384	\$645,567	\$501,236	\$562,975	\$576,747
Billing and Collecting	\$733,000	\$747,071	\$804,067	\$668,041	\$748,224	\$837,380	\$951,322	\$962,860
Community Relations	\$67,000	\$55,936	\$79,674	\$71,838	\$64,147	\$30,338	\$41,362	\$42,318
Administrative and General	\$1,062,375	\$886,993	\$1,121,542	\$1,076,915	\$1,235,810	\$1,203,797	\$1,158,155	\$1,225,378
Total	\$3,064,964	\$2,933,810	\$3,263,088	\$2,801,430	\$3,207,076	\$3,358,492	\$3,529,137	\$3,708,394
%Change (year over year)		-4.3%	11.2%	-14.1%	14.5%	4.7%	5.1%	5.1%

Revenue Requirement

Revenue Requirement of **\$4,955,438**. The contributing factors of the decrease are the PILs and Cost of Capital.

Particular	Last Board Approved	2016	2017	2018	2019	2020	2021	2022
OM&A Expenses	\$3,064,964	\$2,933,810	\$3,263,088	\$2,801,430	\$3,207,076	\$3,358,492	\$3,529,137	\$3,708,394
Depreciation Expense	\$739,929	\$1,472,278	\$691,855	\$876,530	\$735,042	\$878,121	\$872,625	\$957,283
Property Taxes								
Total Distribution Expenses	\$3,804,893	\$4,406,088	\$3,954,943	\$3,677,960	\$3,942,118	\$4,236,612	\$4,401,762	\$4,665,677
Regulated Return On Capital	\$1,349,979	\$741,703	\$764,535	\$790,459	\$816,933	\$835,217	\$805,443	\$655,441
Grossed up PILs	\$36,311	\$185,875	\$111,454	\$338,795	\$199,672	\$28,438	\$18,389	\$0
Service Revenue Requirement	\$5,191,183	\$5,333,666	\$4,830,932	\$4,807,214	\$4,958,723	\$5,100,267	\$5,225,594	\$5,321,118
Less: Revenue Offsets	-\$301,588	-\$329,118	-\$383,983	-\$496,586	-\$373,986	-\$373,986	-\$296,247	-\$365,681
Base Revenue Requirement	\$4,889,595	\$5,004,548	\$4,446,949	\$4,310,629	\$4,584,737	\$4,726,282	\$4,929,347	\$4,955,438

Cost Allocation/Rate Design

With the current information at hand, the natural reallocation of costs using the cost allocation.

	Units		Test Year Consumption		Proposed Rates			Revenues at Proposed Rates		Total
		Average Customer s / Connections	kWh	kW	Monthly Service Charge	Volumetric				
						kWh	kW	Fixed	Variable	
Residential	kWh	10,191	80,335,302		\$25.87	\$0.0000		3,164,047	0	3,164,047
GS<50 kW	kWh	1,264	29,637,405		\$23.74	\$0.0157		360,093	464,492	824,585
GS 50 to 4999 kW	kW	151		219,749	\$89.34		\$3.0974	161,848	662,320	824,168
Sentinel Lighting	kW	166		495	\$3.42		\$10.562	6,834	5,227	12,061
Street Lighting	kW	2,949		3,027	\$2.37		\$13.0067	83,881	39,372	123,253
Unmetered Scattered Load	kWh	19	606,879		\$13.02		\$0.0068	2,969	4,110	7,079
Other Class										
Total								3,779,672	1,175,521	4,955,193

Bill Impact

RATE CLASSES / CATEGORIES (eg: Residential TOU, Residential Retailer)	Units	Sub-Total						Total	
		A		B		C		Total Bill	
		\$	%	\$	%	\$	%	\$	%
RESIDENTIAL SERVICE CLASSIFICATION - RPP	kWh	\$1.15	4.5%	\$2.28	7.3%	\$2.28	5.7%	\$2.09	1.8%
GENERAL SERVICE LESS THAN 50 KW SERVICE CLASSIFICATION - RPP	kWh	\$2.86	5.5%	\$5.86	8.7%	\$5.86	6.7%	\$5.38	1.9%
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION - Non-RPP (Other)	kW	-\$76.63	-16.2%	-\$7.20	-1.3%	-\$8.71	-0.9%	-\$9.84	-0.2%
SENTINEL LIGHTING SERVICE CLASSIFICATION - Non-RPP (Other)	kW	\$1.07	8.4%	\$2.11	14.8%	\$2.10	12.1%	\$1.93	7.2%
STREET LIGHTING SERVICE CLASSIFICATION - Non-RPP (Other)	kW	-\$219.00	-6.0%	\$36.65	1.0%	\$34.70	0.8%	\$39.21	0.6%
UNMETERED SCATTERED LOAD SERVICE CLASSIFICATION - RPP	kWh	\$9.90	46.6%	\$14.47	35.4%	\$14.47	21.3%	\$13.29	3.9%
RESIDENTIAL SERVICE CLASSIFICATION - Non-RPP (Retailer)	kWh	\$1.15	4.5%	\$2.28	7.2%	\$2.28	5.7%	\$2.09	1.8%
RESIDENTIAL SERVICE CLASSIFICATION - RPP	kWh	\$1.15	4.5%	\$1.57	5.6%	\$1.57	5.1%	\$1.45	2.5%
GENERAL SERVICE 50 to 4,999 kW SERVICE CLASSIFICATION - Non-RPP (Other)	kW	-\$76.63	-16.2%	-\$7.20	-1.3%	-\$7.20	-1.3%	-\$8.14	0.0%

- Subtotal A: Distribution Rates
- Subtotal B: A + Variance Accounts, Smart Meter, Low Voltage
- Subtotal C: B + Transmission Charges
- Total Bill: C + Commodity, Wholesale Market Service, Rural Rate Protection and SSS



Questions/Comments



Lost Revenue Adjustment Mechanism (LRAM)

Background and Impact



Motion to Approve

*Be it resolved that the Board of Directors of
OPRC approve the filing of ORPC's
Cost of Service 2022.*



Motion to Approve

Be it resolved that the Board of Directors of OPRC approve that a filing extension request be submitted to the OEB for the 2022 COS (to September 30th 2021), if and when necessary.



Motion to Adjourn

*Be it resolved that the meeting is declared
closed at x:xx pm.*

Thank you