

Activity and Program based Benchmarking

Working Group Workshop #1
October 12, 2018

APB Working Group

Purpose

Inform and seek advice on the activities/programs to focus and frameworks for benchmarking

Objectives for Today

- Understanding of Activity and Program based benchmarking
- Identification of potential list of activities/programs suitable for benchmarking

Agenda

0930 - 0940	Introductions/Agenda for the day	Sagar
0940 - 1000	Welcome address	Brian
1000 - 1030	Introduction to APB	Sagar
1030 - 1045	BREAK	
1045 - 1115	Jurisdictional review	Mark
1115 - 1200	Open discussion on APB	All
1200 - 1245	LUNCH	
1245 - 0100	Process for identification of programs/activities	Sagar
0100 - 0230	Development and discussion of Preliminary list	Ben/Sagar
0230 - 0245	BREAK	
0245 - 0315	Review and Revision of Preliminary List	Ben/Sagar
0315 - 0330	Review of day's work	Brian
0330 - 0345	Wrap-up/ Next steps/ Plans for next workshop	Sagar

Welcome Address



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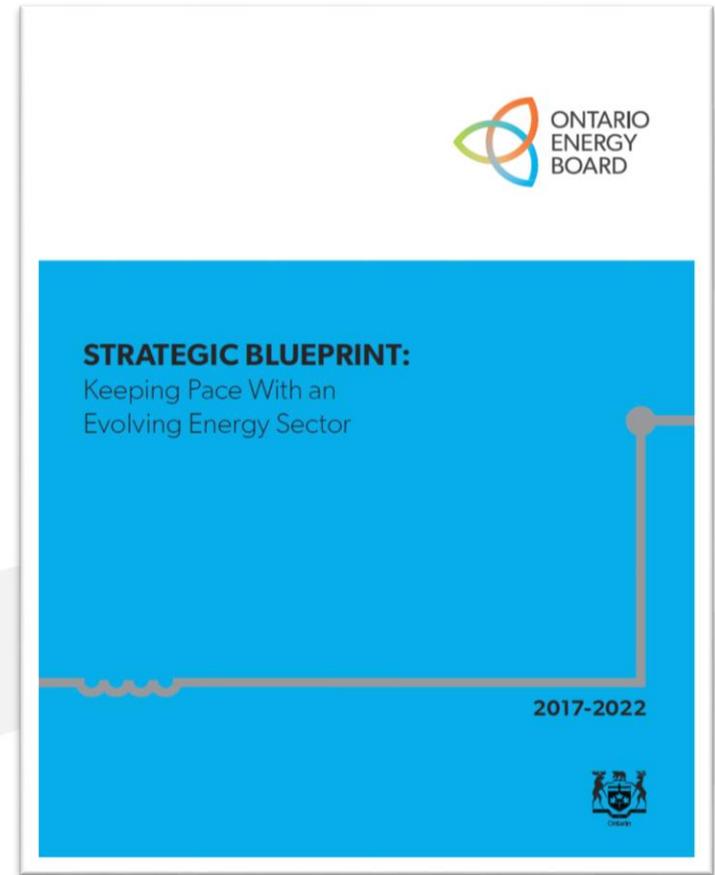
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Evolution of Regulation in ON

- Rate setting for electricity utilities from early 2000s
- Four generations of incentive regulation
- Renewed Regulatory Framework for Electricity utilities (RRFE)
 - Performance Measurement was a key component
 - Scorecard with measures across four dimensions
- Time to evolve on performance measurement and introduce new regulatory process/tools.

The OEB's Strategic Direction

- Commits to modernize regulation to keep pace with an evolving sector
- Identifies strategic goals that will guide the OEB's work over the next five years, in particular
 - *Utilities are delivering value to consumers in a changing environment*
- OEB Business Plan identified Activity and Program based Benchmarking as a key initiative in support of this goal.



Evolving Performance Benchmarking

To ensure that consumers are getting value for money,

- The OEB will expand its use of benchmarking to include a detailed evaluation of costs at the program (or activity) level.
- Enhancing monitoring of performance is expected to incent greater efficiency and ultimately reduce costs for consumers.

OEB's Plan for Evolving Benchmarking

- Implement APB for all rate-regulated entities
- The first phase to focus on distributors in the electricity sector
 - Development of a framework for APB and selection of activities/programs suitable for benchmarking
 - Implement benchmarking at the activities/program level in 2020
- Future phases to implement APB for electricity transmitters, gas distributors and Ontario Power Generation
- Approach
 - 2-3 workshops with APB Working Group
 - Discussion paper for comments from all interested parties
 - Stakeholder meetings
 - Proposed APB framework

Introduction to Activity and Program based Benchmarking



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Benchmarking

Purpose

- Leads to discovering best practices of best performing organizations.
- Identify the opportunities to improve an organization's performance.

OEB's Current Benchmarking – Total Cost

What it does..

- Total cost benchmarking determines the annual stretch factors used in IRM process
- High-level total costs composed of OM&A and capital costs determines cost efficiency rankings

What it doesn't do..

- No identification of cost performance at the program or activity level
- No identification of specific areas where utilities can make improvements by identifying best performers

What is APB?

Activity and Program based Benchmarking (APB)

- APB is benchmarking at a the level of activities and/or programs

Staff's Working Definitions

- **Activity:** The granular level of utility activity or service identified by a financial account (OM&A or capital)
- **Program:** A set of related utility activities or services resulting in delivery of significant work or cost

Potential Applications of APB

In regulatory process

- Assessing and monitoring of utilities' performance
- Rate-making purposes (e.g. proportionate review and applications)
- Informs incentives/penalties development
- Regulatory audits & investigations
- Informs policy development

APB – Benefits - Consumers

- Increased transparency and comparison helps consumers understand their utilities' costs behavior
- Potential to improve on service reliability
- Increased confidence in the regulatory process
- Value in service delivery at the most efficient cost and ultimately lower rates

APB – Benefits - Utilities

- Identifies areas of high performance
- Identifies areas for improvement in performance
- Opportunities to share best practices
- Opportunity to improve productivity and profitability
- Potential to reduce regulatory lag and uncertainty
- Potential to improve customer service and satisfaction
- Support to utility in long term planning and asset management

APB – Benefits - OEB

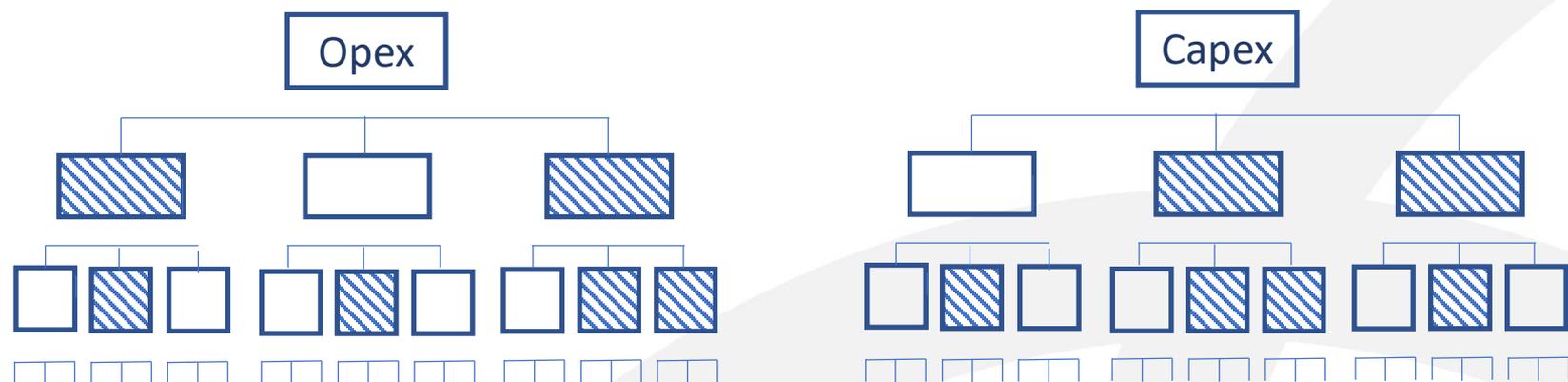
- Encourages continuous improvements for the sector
 - effectiveness and efficiency which a key objective of the RRF
- A regulatory tool to support proportionate review of applications
- Complements total cost benchmarking by providing more specific areas of performance measurement and potential action

APB – Critical elements of the framework

- Which activities/programs to be benchmarked?
- How granular should the analysis go?
- What are the methods of benchmarking to be used?
- What are the data considerations?

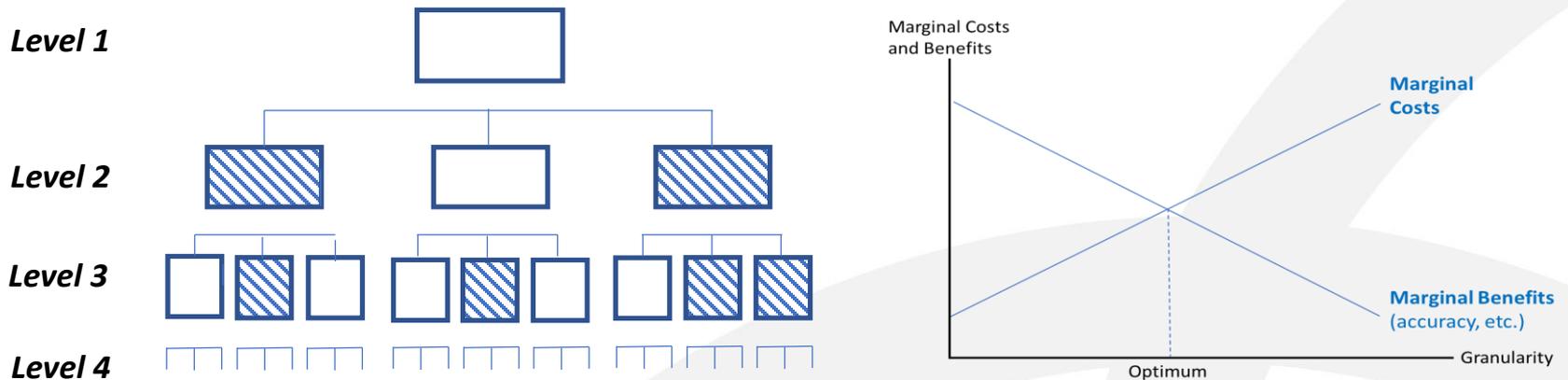
APB – Selective Activities/Programs

- The activities/programs should be selected based on specific approaches and certain criteria



APB – Appropriate level of Granularity

- Increasing granularity of data likely to impact the accuracy of the results from inconsistency of allocation of costs and reporting
- Optimum level of granularity to maximize value to stakeholders



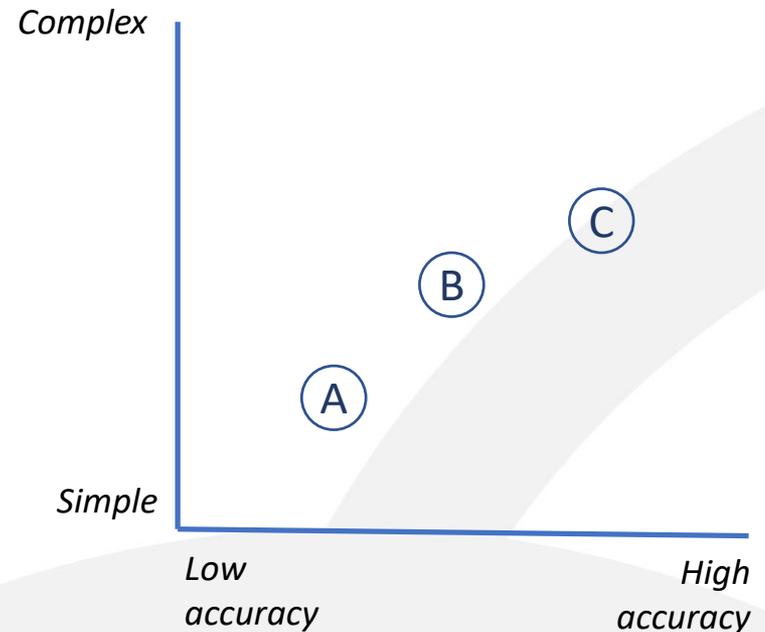
APB – Methods of Benchmarking

Common methods:

- Unit cost ratios/indices
- Econometric modeling
- Data envelopment analysis

Selection of the method should be based on

- Ease of use
- Best fit to the requirements
- Value to consumers, utilities and OEB



APB – Data Considerations

- Data is critical
- The current RRRs provide wealth of data
- Numerous companies means large data samples
- Improved in consistency and reporting

Break



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Jurisdictional Review



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Open Discussion on APB



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Identification of Activities/Programs



Introduction

Objectives

- Provide an overview of some preliminary work done by OEB staff to identify potential activities and programs.
- Feedback and discussion on the activities/programs identification.

Topics for Discussion

- Key questions for activity/program identification
- Overview of Analysis
- Four approaches & Four lists
- Criteria for convergence
- Preliminary list
- Discussion

Activities / Programs Identification

Key questions for the identification process

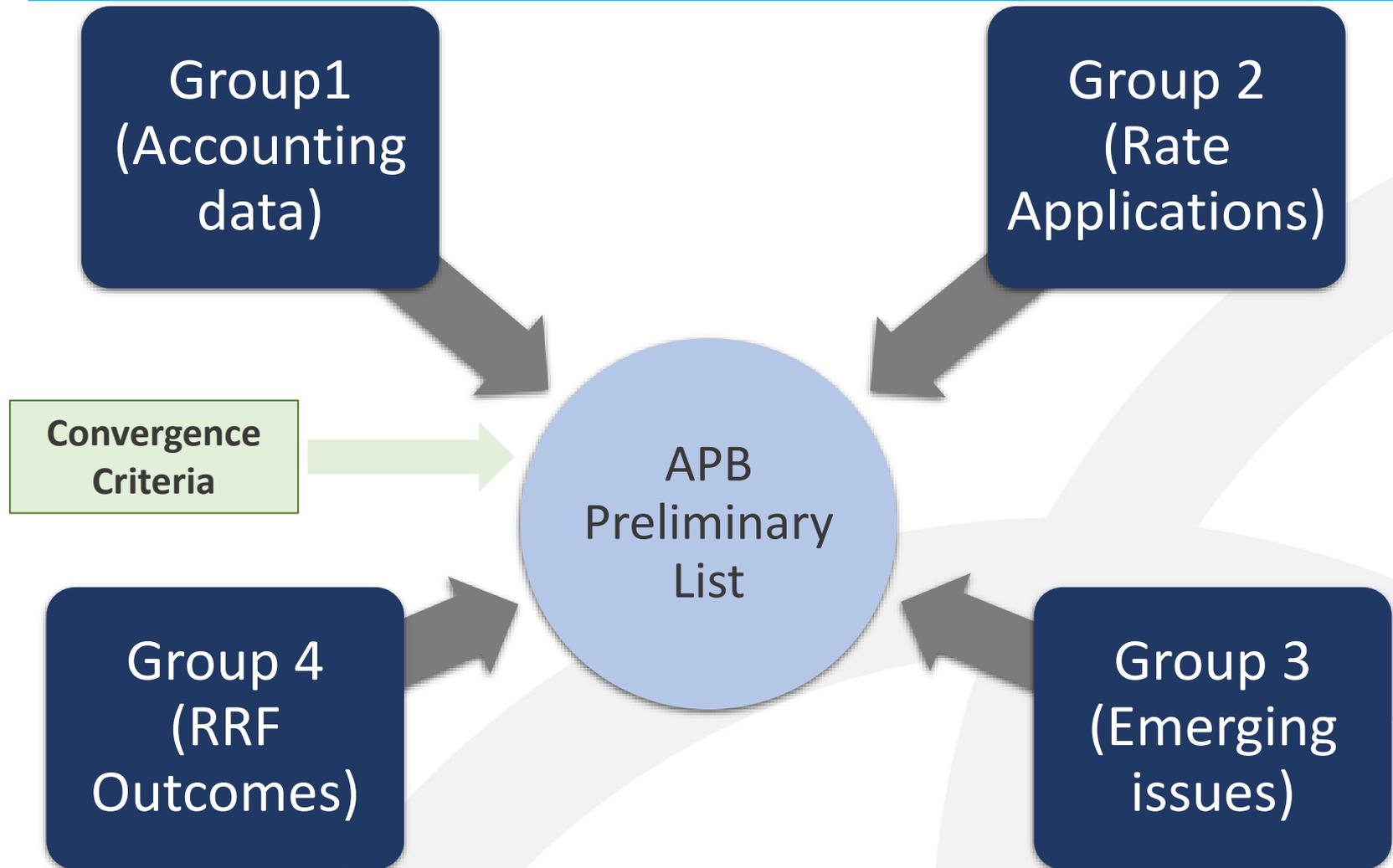
- Approaches
 - *How to identify activities / programs?*
- Preliminary lists of the approaches
 - *What are activities / programs under various approaches?*
- Short-list criteria
 - *What is the appropriate criteria to select activities/programs?*
- Fit for purpose
 - *Can these drive more efficiencies and better outcomes?*
- Completeness
 - *Are they representative of the key utility activities/programs?*

Preliminary Activities / Programs Identification

Overview of what we did

- Identify sources to find activities / programs (RRRs, Applications)
- Review available data sources and influential factors (RRF)
- Apply a combination of four different approaches, with quantitative and qualitative criteria, considered to ascertain four lists of potential activities / programs
- Apply a preliminary set of convergence criteria
- Develop a preliminary set of activities/ programs that could be benchmarked

Activities / Programs Identification



Group 1 – Analysis of Accounting Data

Description

- The Uniform System of Accounts (USoA) trial balance has many important uses including; the production of the yearbooks, benchmarking studies and rate applications
 - Provides a good baseline of account level detail for capital assets and OM&A expenses
 - To identify activities, analyzed account data using a rolled up aggregate figure for the entire distribution sector by account balances for capital assets and OM&A expenses across most recent six years (2017-2012)
 - Average amount over 6 years of OM&A accounts was \$1,578M and the average amount of Gross Capital accounts over 6 years was \$25,022M
- Applied a materiality factor to itemize the aggregate account balances greater than 1% of total six-year average for capital cost and OM&A
- Excludes “Salaries & Wages” as not viewed to be an activity or program

Group 1 – OM&A Accounts / Items

No.	Account Description	Average (\$ M)	% of Total OM&A
1	Line operation and maintenance	190	12%
2	Overhead Distribution Lines and Feeders - Right of Way (Vegetation Management)	161	10%
3	Maintenance of General Plant	130	8%
4	Billing	124	8%
5	Meters	81	5%
6	Miscellaneous Distribution Expense	66	4%
7	Operation Supervision and Engineering	62	4%
8	Distribution Station Equipment	50	3%
9	Bad Debt	49	3%
10	Collection	48	3%
11	Customer Premises - Operation Labour	45	3%
12	Outside services	44	3%
13	Load dispatching	39	3%
14	Maintenance Supervision and Engineering	36	2%
15	Poles, Towers and Fixtures	29	2%
16	Regulatory Expenses	29	2%
17	Maintenance of Buildings and Fixtures - Distribution Stations	17	1%
18	Office Supplies and Expenses	17	1%
19	OMERS Pensions and Benefits / Employ. Pensions and Benefits	17	1%
Total		1,234	78%

Group 1 – Gross* Capital Accounts / Items

No.	Account Description	Average (\$ M)	% of Total Capital
1	Poles, Towers and Fixtures	4,713	19%
2	Line Transformers	3,898	16%
3	Overhead Conductors and Devices	3,397	14%
4	Underground Conductors and Devices	3,387	14%
5	Underground Conduit	2,188	9%
6	Distribution Station Equipment	1,919	8%
7	Meters	1,326	5%
8	Buildings and Fixtures	871	4%
9	Computer hardware	823	3%
10	Services	696	3%
11	Transportation Equipment	496	2%
12	Land Rights	268	1%
13	System Supervisory Equipment	240	1%
Total		24,222	97%

* Net book value (NBV) not available on an account basis



Group 2 – Analysis of Rate Applications Data

Description

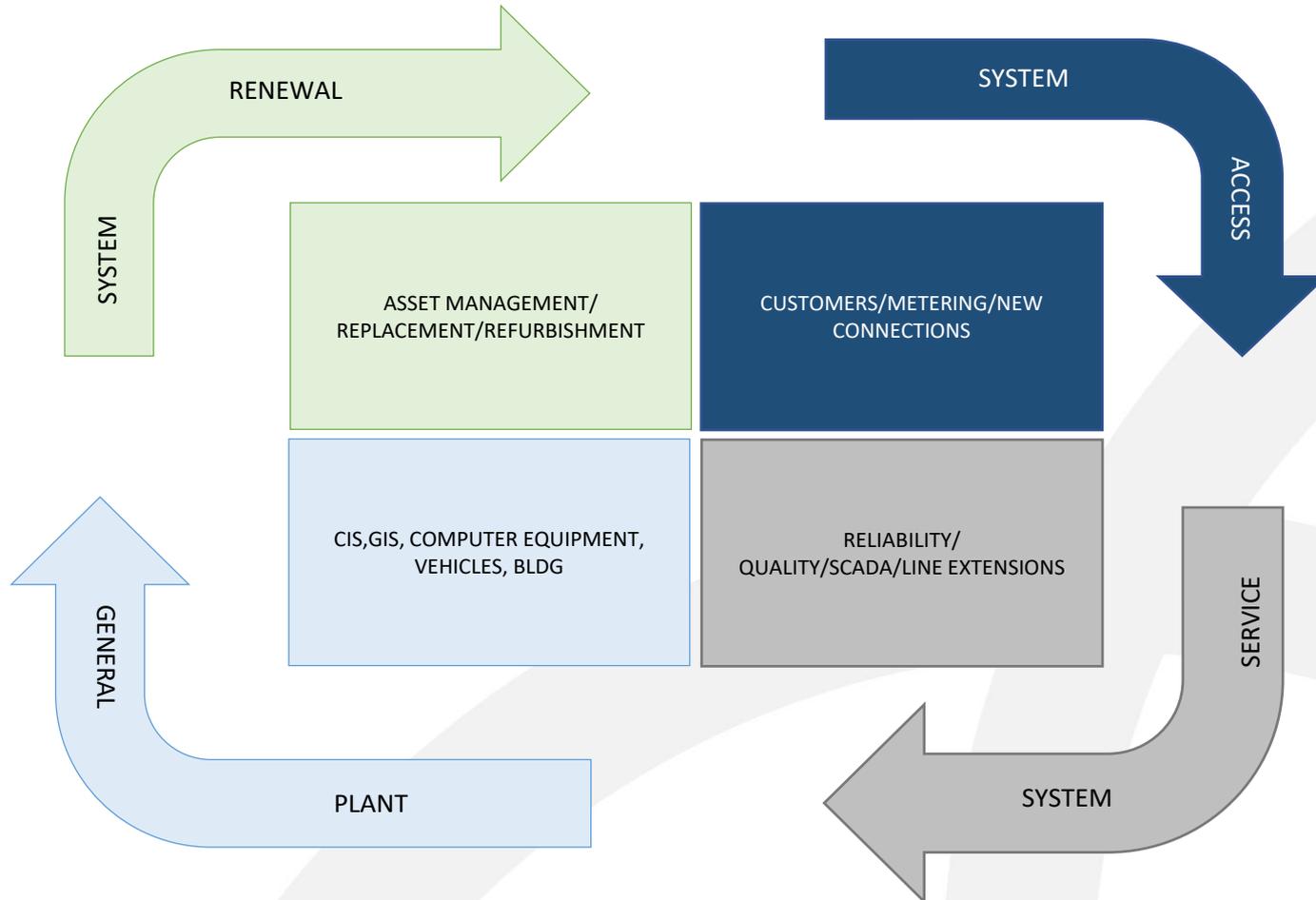
- Rebasing rate applications contain detailed information about distributors proposed spending on activities and programs
- Reviewed 30 rebasing applications, including custom IRs, covering 2014 to 2018 test years
- Data compiled and itemized activities with forecast costs greater than \$10M in aggregate for Capital Expenditures and OM&A Expense and by Primary (if 3 or more distributors have similar cost) and Secondary (if less than 3 distributors) classifications
- Capital expenditures activities based on four categories in Chapter 5 Filing Requirements for DSP as follows:
 - System Access
 - System Renewal
 - System Service
 - General Plant

Group 2 – 30 Applications Reviewed

#	Application Type	COS	Custom IR
	Distributor name	Test Year	Test Year
1	PowerStream (2017 Alectra Utilities)		2016
2	Horizon (2017 Alectra Utilities)		2015
3	Atikokan Hydro Inc.	2017	
4	Brantford Power Inc.	2017	
5	Burlington Hydro Inc.		2014
6	Canadian Niagara Power Inc.	2017	
7	Centre Wellington Hydro Ltd.	2018	
8	Cooperative Hydro Embrun Inc.	2018	
9	Energy+ Inc.		2014
10	Entegrus Powerlines Inc.	2016	
11	Grimsby Power Inc.	2016	
12	Guelph Hydro Electric Systems Inc.	2016	
13	Halton Hills Hydro Inc.	2016	
14	Hydro Hawkesbury Inc.	2018	
15	Hydro One Networks Inc.		2015
16	Hydro Ottawa Limited		2016
17	Kingston Hydro Corporation		2016
18	Lakefront Utilities Inc.	2017	
19	London Hydro Inc.	2017	
20	Milton Hydro Distribution Inc.	2016	
21	Northern Ontario Wires Inc.	2017	
22	Oshawa PUC Networks Inc.		2015
23	Renfrew Hydro Inc.	2017	
24	Rideau St. Lawrence Distribution Inc.	2017	
25	Thunder Bay Hydro Electricity Distribution Inc.	2017	
26	Toronto Hydro-Electric System Limited		2015
27	Wasaga Distribution Inc.	2016	
28	Waterloo North Hydro Inc.	2016	
29	Welland Hydro-Electric System Corp.	2017	
30	Wellington North Power Inc.	2016	

Group 2 - Life Cycle of Capital Investment Categories

Chapter 5 - Table 1



Group 2 – Total Costs of 30 Rate Applications

Capital

- Category
 - Primary sub-categories (if 3 or more distributors have similar cost)
 - Secondary sub-categories (if less than 3 distributors)

Category	Primary	Secondary	Total 30 Distributors (\$ M)	% of Total
	Total (\$ M)	Total (\$ M)		
System Access	281	152	433	25%
System Renewal	679	74	752	44%
System Service	84	96	181	10%
General Plant	305	51	356	21%
Grand Total Capital	1,349 (78%)	373 (22%)	1,722	100%

Group 2 – Capital Activities/Programs

No.	Cost Item	Category	Total Cost (\$ M)	% Total of Capital
1	Line renewal/conversion (U/G and O/H)	System Renewable	323	19%
2	New services	System Access	187	11%
3	Facilities	General Plant	120	7%
4	Poles, Towers and Fixtures	System Renewable	95	6%
5	Computer hardware	General Plant	92	5%
6	Distribution Station Renewal	System Renewable	90	5%
7	Expansion	System Service	81	5%
8	Storm management	System Renewable	74	4%
9	Vehicles/transportation	General Plant	70	4%
10	Meters	System Renewable	52	3%
11	Reactive	System Renewable	38	2%
12	SCADA	General Plant	34	2%
13	Distribution Station Equipment	System Service	29	2%
14	Equipment and Tools	General Plant	28	2%
15	Distribution Asset	System Renewable	25	2%
16	Distribution Automation	System Service	25	2%
17	Others (8 items)		~209	~12%
Total			1,570	91%

Group 2 – Total Costs of 30 Rate Applications

OM&A

- Category
 - Primary sub-categories (if 3 or more distributors have similar cost)
 - Secondary sub-categories (if less than 3 distributors)
- Excludes “Salaries & Wages” as not viewed an activity or program

Category	Primary	Secondary	Total 30 Distributors (\$ M)	% of Total
	Total (\$ M)	Total (\$ M)		
Operations	272	159	431	30%
Administration	201	18	218	16%
Customer Service	338	18	356	26%
Maintenance	380	5	386	28%
Grand Total OM&A	1,191 (86%)	200 (14%)	1,391	100%



Group 2 – OM&A Activities/Programs

No.	Cost Item	Total Cost (\$ M)	% Total of OM&A*
1	Line operation and maintenance	186	13%
2	Computer software	150	11%
3	Vegetation Management	147	11%
4	Customer Service	141	10%
5	Billing	132	10%
6	Operations Support	107	8%
7	Engineering & Operations Administration	72	5%
8	Meters	54	4%
9	Health & Safety	39	3%
10	Facilities	38	3%
11	System Control/Control Centre Operations	31	2%
12	Supply Chain	23	2%
13	Regulatory and Compliance	23	2%
14	Collection	21	2%
15	General Expenses & Administration	20	1%
16	Bad Debt	18	1%
Total		1,202	90%

Group 3 – Analysis of Emerging Issues

Description

- Review of emerging issues driving distribution costs
- Research, includes Strategic Blueprint, Ontario's Long-Term Energy Plan (LTEP), IESO LTEP Implementation Plan, and The Conference Board of Canada
- Created a short-list of industry risks & development trends:
 - Increasing Cyber security risk
 - Aging infrastructure
 - Changing supply and demand patterns
 - More extreme weather
 - Increase in embedded generation facilities (increasing complexity in system protection and control)
 - Growth – population and infrastructure
- Linked and mapped the emerging issues to Group 1 accounts and Group 2 applications activities or programs

Group 3 – Linkages to Activities / Programs

OM&A	Capital
Vegetation management	Line renewal/conversion (U/G and O/H)
Meters	Poles, Towers and Fixtures
Line operation and maintenance	Line Transformers
Supervision	Distribution station equipment
Distribution Station Equipment	Meters
Load dispatching/SCADA	Computer hardware
Maintenance of Poles, Towers and Fixtures	New services (System access)
Computer hardware and software	Distribution Automation
System Control/Control Centre Operations	System Supervisory Equipment - SCADA
	Embedded generation/Renewable generation

Group 4 – Analysis of RRF Outcomes

Description

- Analyzed activities / programs linkages to the four performance outcomes identified in the RRF
- Quantifiable outcomes of the RRF are shown through the results in the performance categories and associated measures of the scorecard
- Specific impacts on consumers considered including consumer focus (e.g. billing accuracy can be linked to “Computer Hardware and Software”) and operational effectiveness (e.g. system reliability can be linked to “Line Operation and maintenance” and others)
- In this analysis, RRF measures were linked and mapped to Group 1 accounts and Group 2 applications activities or programs

Group 4 – Scorecard per RRF

Performance Outcomes	Performance Categories	Measures
Customer Focus	Service Quality	New Residential/Small Business Services Connected on Time Scheduled Appointments Met On Time Telephone Calls Answered On Time
	Customer Satisfaction	First Contact Resolution Billing Accuracy Customer Satisfaction Survey Results
Operational Effectiveness	Safety	Level of Public Awareness Level of Compliance with Ontario Regulation 22/04 Serious Electrical Incident Index Number of General Public Incidents Rate per 10, 100, 1000 km of line *
	System Reliability	Average Number of Hours that Power to a Customer is Interrupted Average Number of Times that Power to a Customer is Interrupted
	Asset Management	Distribution System Plan Implementation Progress
	Cost Control	Efficiency Assessment Total Cost per Customer Total Cost per Km of Line
Public Policy Responsiveness	Conservation & Demand Management	Net Cumulative Energy Savings
	Connection of Renewable Generation	Renewable Generation Connection Impact Assessments Completed On Time New Micro-embedded Generation Facilities Connected On Time
Financial Performance	Financial Ratios	Liquidity: Current Ratio (Current Assets/Current Liabilities) Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio Profitability: Reg. Deemed (included in rates) Return on Equity Achieved

Group 4 – Linkages to Activities / Programs

OM&A	Capital
Billing	Line Renewal / Conversion (UG and OH)
Line Operation and maintenance	Poles, Towers and Fixtures
Distribution Station Equipment	Distribution Station Equipment
Bad Debt	Meters
Collections	Computer Hardware
Maintenance of Poles, Towers and Fixtures	New Services
Line Transformers	System Supervisory Equipment - SCADA
System Supervisory Equipment	Embedded Generation / Renewable Generation
Computer Software	

Criteria for Convergence of Lists

Criteria for preliminary list of activities / programs

- Materiality impacts and order of significance were applied to Groups 1 and 2
 - 1% of total (6 year average) OM&A / Capex for Group 1
 - \$10M threshold applied to Group 2
 - Significance layered on Group 2 with # of distributors with same activity:
 - Primary (≥ 3 Dx's) – Secondary (< 3 Dx's)
 - Qualitative impacts applied: emerging issues and RRF
- Screening based on common themes appearing across the four Groups
 - activities appearing ≥ 3 groups; must include both Group 1 and 2 due to their quantitative significance



Preliminary List of Activities/Programs

OM&A	Capital
Vegetation management	Line renewal/conversion (U/G and O/H)
Billing	Poles, Towers and Fixtures
Meter Expense	Transformers (including line transformers)
Line operation and maintenance	Distribution station equipment
Operation Supervision and Engineering	Meters
Distribution Station Equipment	Computer hardware
Bad Debt	New services
Collection	System Supervisory Equipment - SCADA
Maintenance Poles, Towers and Fixtures	
Computer software	
System Control/Control Centre Operations	
General Expenses & Administration	

Discussion

- Approaches
 - *How to identify activities / programs?*
- Preliminary lists
 - *What are activities / programs under various approaches?*
- Short-list criteria
 - *What is the criteria to select the appropriate activities/programs?*
- Fit for purpose
 - *Can these drive more efficiencies and better outcomes?*
- Completeness
 - *Are they representative of the key utility activities/programs?*

Review of Day's Work



October 12, 2018

Wrap-Up/Next Steps

