

2018 OEB Custom Incentive Regulation Progress Report

1. INTRODUCTION

As part the Hydro Ottawa's 2016 to 2020 (EB-2015-0004) Custom Incentive Rate (CIR) setting process, Hydro Ottawa committed to report annually on the following:

Key Performance Metrics (KPIs)

a) Additional Operational Effectiveness KPIs which are not included in the OEB's Electricity Distributor Scorecard or the Ontario Energy Board's Yearbook.

- Safety
- System Reliability
- Asset Management
- Cost Control

The progress of its capital spending program in the following categories;

- Service Access,
- System Service and System Renewal; and
- General Plant.

Hydro Ottawa uses KPIs to measure continuous improvement in asset management planning, capital investment planning and in customer oriented performance. These indicators include quantitative measures to monitor the effectiveness of planning processes, efficiencies in carrying out those plans, as well as identifying shortfalls as areas for continuous improvement.

2. SAFETY

Hydro Ottawa tracks and reports on oil spills and the cost of remediation¹. Reportable oil spills are reported to the Ministry of the Environment. In 2018, Hydro Ottawa's annual oil spills amounted to 1,475L with remediation costs estimated at \$1,764,000².

3. SYSTEM RELIABILITY

Customer Average Interruption Duration Index

The annual average time required to restore power to the average customer per sustained outage in 2018 was 22.79 hours including loss of supply and Major Event Days. Excluding the Major Event (tornado) of September 21st the annual average time to restore power to the average customer was 2.42 hours, and 0.85 hours when all loss of supply and all Major Event Days are excluded.

Feeders Experiencing Multiple Sustained Interruptions

This represents the number of feeders that experienced 10 or more sustained outages greater than 1 minute. This performance metric provides an indication as to which regions have seen the highest localized issues. For 2018, 10 feeders had 10 or more sustained outages.

Worst Feeder Analysis

In 2018, there were 5 feeders identified as having "Very Poor" performance which represents 1% of all feeders. In 2018, 1 of the 10 worst feeders saw an improvement in reliability from the previous year. It takes several years to see the impact of addressing worst feeders. Additionally, the 2018 10 worst feeder list contains 6 feeders from the 2017 list, which means that 4 feeders from the previous year have seen an improvement in reliability and fallen off the list.

¹ Cost represents external remediation contractor costs only.

² Oil spill work can continue into the next calendar year.

The System Average Root Mean Square Variation Frequency Index

Measures the average number of voltage sags on the system. Poor voltage is considered to be outside $\pm 6\%$ of the system nominal voltage. Hydro Ottawa maintained voltage within these tolerances in 2018 with the exception of 5 events. Four of the five events originated from the same fault on the distribution circuit at Bilberry substation on May 19, 2018. The fifth was an unrelated event occurring at the Bell substation on May 28th. This metric is exclusive of transmission events.

Stations Exceeding Planning Capacity

The percentage of stations with a summer peak operating above 100% of their planned capacity rating in 2018 was 16%.

Feeders Exceeding Planning Capacity

The percentage of feeders with a summer peak operating above 100% of their planned capacity rating in 2018 was 2.9%.

Stations Approaching Rated Capacity

The percentage of stations at or above 100% of the station rated capacity in 2018 was 0%.

Feeders Approaching Rated Capacity

The percentage of feeders at or above 90% of the rated capacity in 2018 was 0.01%.

4. ASSET MANAGEMENT

Hydro Ottawa's capital spending is materially on plan. Hydro Ottawa forecasts no underspending by the end of its five year (2016 to 2020) approved capital spending plan.

System Access

System Access capital spending is driven by customer request, as a result Hydro Ottawa has limited control over activity in this category of spending. Budgets are based on historical trends. See Table 1 for 2018 progress on System Access capital spending compared to plan. At the end of 2018, on a cumulative basis, system access is over plan by 2.8%.

Table 1 – Capital Spending Compared to Plan – System Access (\$000)

Investment Category / Capital Program	Budget Program	2018			Cumulative		
		Planned	Actual	Variance	Planned	Actual	Variance
Plant Relocation	Plant Relocation	7,928	5,270	(2,658)	23,321	17,595	(5,726)
Residential	Residential	7,167	6,177	(990)	21,083	15,475	(5,608)
Commercial	Commercial	12,576	19,520	6,944	39,040	42,486	3,446
System Expansion	System Expansion	2,413	5,445	3,032	8,259	17,890	9,631
Stations Embedded Gen.	Stations Embedded Generation	392	89	(303)	1,153	1,058	(95)
Infill & Upgrade	Infill & Upgrade	3,288	3,047	(241)	9,671	11,679	2,008
Damage To Plant	Damage To Plant	1,195	1,125	(70)	3,514	3,098	(416)
Metering	Metering	173	169	(4)	510	272	(238)
Total Spending		35,132	40,842	5,710	106,551	109,553	3,002

System Renewal and System Service

System Renewal and System Service actual spending exceeded budget by \$19M in 2018. System Renewal spending is allocated for replacement and refurbishment of system assets to extend original service life. System Service spending covers modifications to Hydro Ottawa's system to ensure the distribution system meets operational objectives while addressing future customer needs. Timing of projects to build new station capacity in Richmond and Uplands, critical equipment replacement and major weather event recovery, account for most of the spending increase. See Table 2 for 2018 progress on System Renewal and System Service capital spending compared to plan.

Table 2 – Capital Spending Compared to Plan – System Renewal and System Service (\$000)

Investment Category / Capital Program	Budget Program	2018			Cumulative		
		Planned	Actual	Variance	Planned	Actual	Variance
Stations Asset	Transformer Replacement	6,533	10,466	3,933	21,882	21,950	68
	Switchgear Replacement	7,408	9,822	2,414	19,920	24,341	4,421
	Stations Plant Failure	107	144	37	398	721	323
Stations Refurbishment	Stations Enhancement	731	204	(527)	1,962	1,623	(339)
Distribution Asset	Pole Replacement	7,608	10,470	2,862	22,841	32,060	9,219
	Insulator Replacement	194	14	(180)	362	374	12
	Elbow & Insert Replacement	219	0	(219)	698	450	(248)
	Distrib. Transformer Replacement	933	406	(527)	2,545	1,008	(1,536)
	Civil Rehabilitation	734	1,069	335	4,523	3,394	(1,129)
	Cable Replacement	6,073	7,323	1,250	17,309	20,527	3,218
	Switchgear New & Rehab	434	580	146	2,032	3,340	1,309
	O/H Equipment New & Rehab	1,041	14	(1,027)	2,727	725	(2,003)
Plant Failure Capital	2,893	14,451	11,558	8,602	30,993	22,392	
Metering	Remote Disconnect Smart Meter	1,584	1,013	(571)	3,546	2,260	(1,286)
Stations Capacity	Stations New Capacity	10,464	11,383	919	31,411	18,731	(12,680)
Distribution Enhancements	Line Extensions	7,132	5,966	(1,166)	20,834	22,481	1,647
	System Voltage Conversion	5,729	2,059	(3,670)	13,450	8,787	(4,663)
	System Reliability	513	36	(477)	1,286	1,033	(253)
	Distribution Enhancements	801	1,000	199	2,177	2,335	158
Automation	SCADA Upgrades	556	1,282	726	2,578	2,653	76
	SCADA – RTU Additions	87	3	(84)	331	27	(304)
	Distribution Automation	3,548	7,043	3,495	12,220	13,883	1,663
	Stations Automation	689	0	(689)	1,423	136	(1,287)
Total Spending		66,011	84,748	18,737	195,057	213,833	18,776

General Plant

On a cumulative basis, capital spending in Hydro Ottawa's General Plant category is 11.8% above plan. Within the sub categories, timing of some projects has shifted resulting in variances. See Table 3 for 2018 progress on General Plant capital spending compared to plan.

Table 3 – Capital Spending Compared to Plan – General Plant (\$000)

Investment Category / Capital Program	Budget Program	2018			Cumulative		
		Planned	Actual	Variance	Planned	Actual	Variance
Buildings - Facilities	Buildings - Facilities	408	4,043	3,635	1,606	5,018	3,412
Customer Service	Customer Service	1,148	38	(1,110)	7,250	3,608	(3,642)
ERP System	ERP System	350	104	(246)	5,746	11,134	5,388
Fleet Replacement	Fleet Replacement	1,452	1,195	(257)	4,116	5,398	1,282
IT New Initiatives	IT New Initiatives	1,006	2838	1,832	4,298	5,148	850
IT Life Cycle & Ongoing	IT Life Cycle & Ongoing Enhance	1,905	2,059	154	5,066	4,069	(997)
Operations Initiatives	Operations Initiatives	405	199	(206)	1,931	2,464	533
Tools Replacement	Tools Replacement	530	503	(27)	1,562	1,335	(227)
Hydro One Payments	Hydro One Payments	5,000	3,143	(1,857)	14,575	13,437	(1,138)
Total Spending		12,204	14,122	1,918	46,150	51,611	5,461

5. COST CONTROL

Hydro Ottawa utilizes two metrics in order to monitor labour utilization; productive time and labour allocation. In 2018 the metric results were, 72% and 58%, respectively. Productive time targets are set to maximize efficiencies while labour allocation metrics are set to ensure the appropriate amount of time is spent between capital and operation, maintenance and administrative activities.