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Frank D'Andrea
Vice President, Chief Regulatory Officer,
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BY COURIER

June 19, 2018

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON M4P 1E4

Dear Ms. Walli,

EB-2017-0049 – Oral Hearing Undertakings for Hydro One Networks Inc.'s 2018-2022 Distribution Custom IR Application (the "Application")

Please find enclosed an updated response to undertaking J 2.4 from the Oral Hearing held on June 12, 2018 in regards to the above noted proceeding.

This filing has been submitted electronically using the Board's Regulatory Electronic Submission System and two (2) hard copies will be sent via courier.

Sincerely,

Frank D'Andrea

Encls.
cc. EB-2017-0049 parties (electronic)

UNDERTAKING – J 2.4

Reference

I-38-CCC-044-01

Undertaking

To provide in advance of the appearance of panel 5 material created by Boston Consulting Group.

Response

In late 2015, Hydro One became a publicly traded company under the direction of a new senior management team. The senior management team initiated a project, internally referred to as the "Let's Get Great" or, sometimes, the "Good to Great" initiative. This initiative aimed to identify ways to improve Hydro One's operations and its customer relationship and to realize the company's full potential for efficiencies, which management recognized as critical to meeting the OEB's RRF objectives.

Management retained Boston Consulting Group to assist in project definition and set-up, providing project management support, knowledge capital, and additional resources to assist Hydro One with a review of its operations to ascertain its full potential. BCG worked alongside management and under management's direction to review Hydro One's existing workflows and identify ways to improve management processes. The attached presentation to the Board of Directors is the culmination of this work (Attachment 2).

Hydro One has redacted portions of the Board of Directors presentation where content falls outside the scope of this proceeding or relates to sensitive, forward-looking financial information on a Hydro One consolidated basis that has not been publicly disclosed.

The results of the "Let's Get Great" journey are reflected in this Application, including the identified productivity targets. Hydro One's transition continues towards being a more commercially-oriented enterprise that is more outcome-focused.

BCG did conduct an initial review of Hydro One's vegetation management program and prepared a draft PowerPoint presentation of their findings, provided as Attachment 1. The presentation was never finalized.

Hydro One did not consider BCG's draft presentation when it developed its vegetation strategy in this Application. To develop its vegetation strategy in this Application, Hydro

One retained Clear Path Utility Solutions LLC, an expert in utility vegetation and shared the BCG draft presentation with them for that purpose.

Executive summary

Effectiveness of Hydro One's existing VM programs on par with other utilities

- $/ACI for cyclic and strategic trim in line with BCG benchmarks

Under existing grid technology/design, opportunity to improve reliability through better VM practices appears limited

- Based on historical data, trimming every year would only drive a SAIFI improvement of 0.09 (18%)
- Consistent with observation that ~80% of tree-related outages come from off-ROW

Hydro One's VM program can deliver maximum value to customers by focusing on two areas

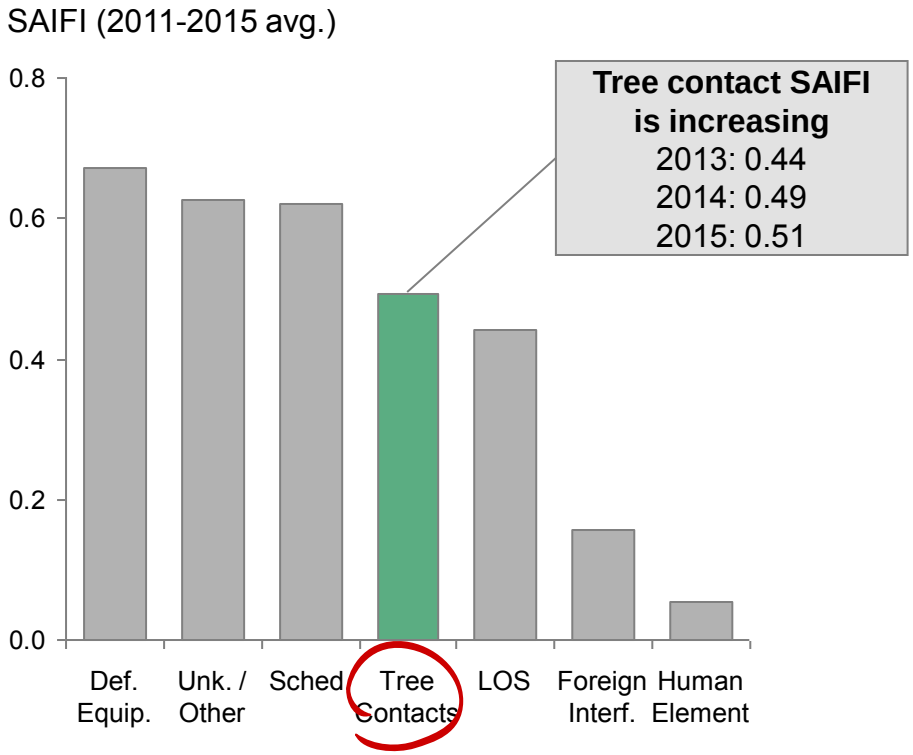
- Ensuring that existing VM program is optimized for cost effectiveness
- Delivering expected reliability outcomes (e.g. ensuring high reliability to LDAs while maintaining performance for rural customers)

3 potential opportunities for reducing VM spend while meeting customer segment expectations

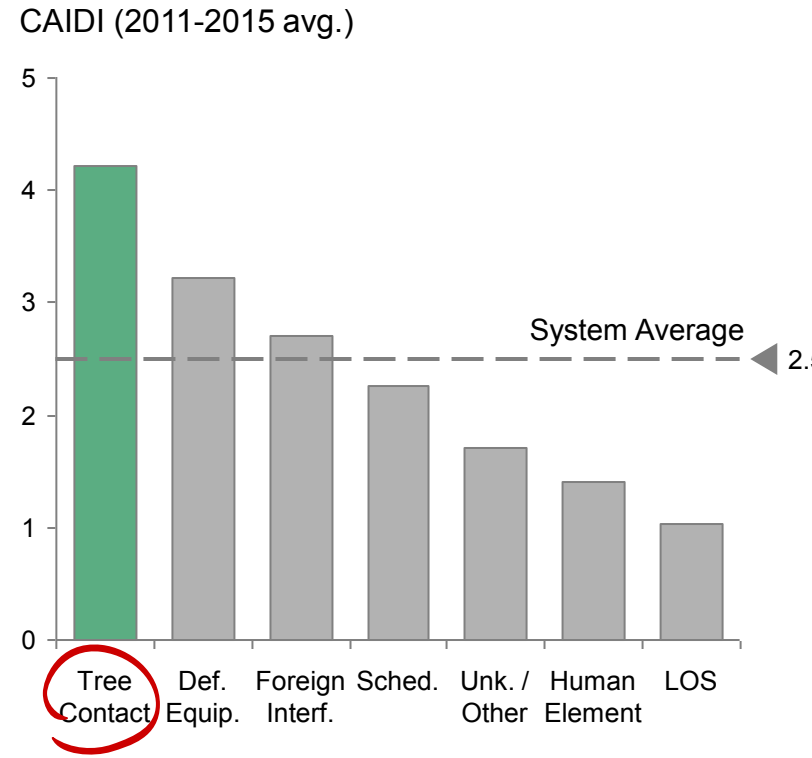
1. Cyclical trim: reduce trim cycle for highest priority feeders (M-class, LDA-serving, 3-phase, etc.)
   - Shorter trim cycle reduces total O&M costs but likely not feasible/optimal for all feeders
2. Strategic trim: optimize around cost effectiveness of spend
3. Deployment of new design standards (e.g. Hendrix cables) in high risk areas to reduce customer impacts from tree outages

Tree contacts are a large and growing driver of outages in the distribution system

Tree contacts remain major driver of SAIFI, increasing in the past 3 years



Tree contact outages have highest CAIDI, reflecting high cost of response

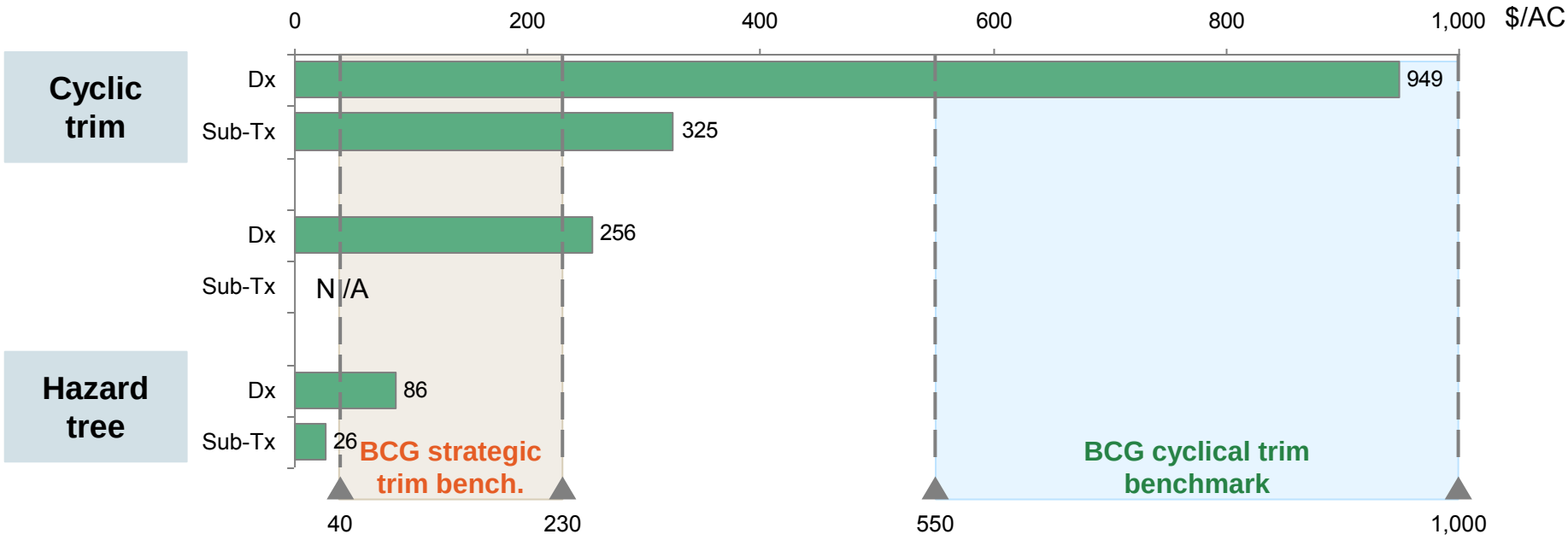


Tree contracts account for 16% of system SAIFI and 28% of overall SAIDI

Note: Data includes LOS and excludes FM; data follows the Hydro One standard defining a sustained outage as greater than 1 minute; FM events calculated using 10% methodology
Source: H1 OMS Data

H1's historical vegetation management cost effectiveness on par with other utilities

Hydro One vegetation management historical $/ACI



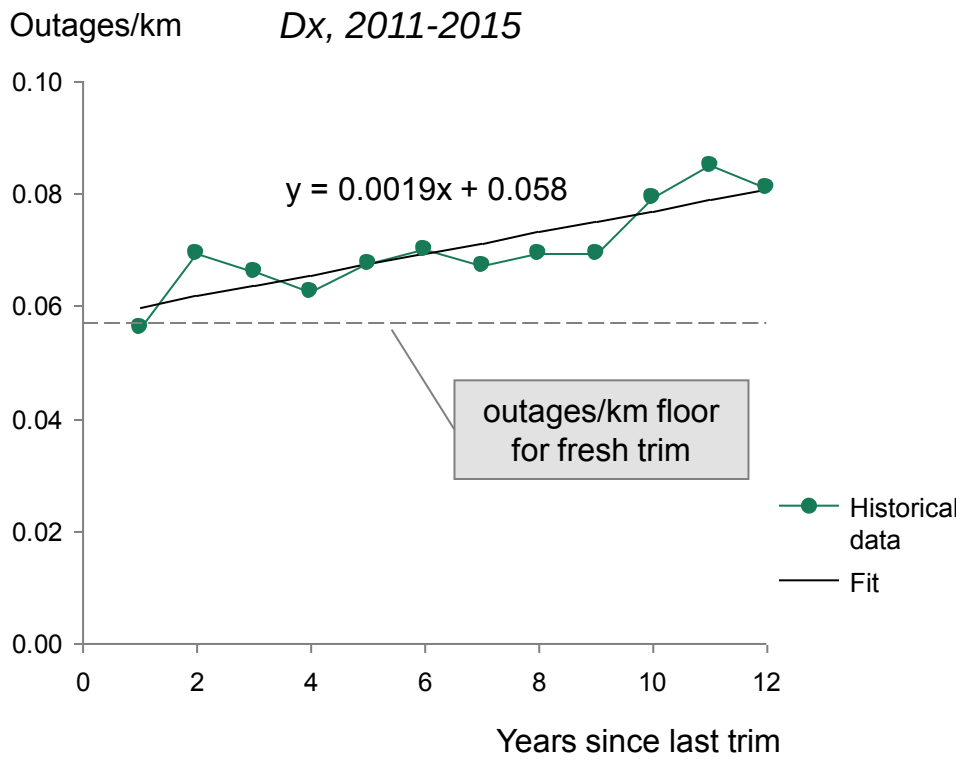
Initial observations

1. Hydro One's veg mgmt program effectiveness in line with BCG benchmarks
2. Sub-Tx cyclic trim more cost effective than Dx trim
3. Hazard tree program is effective but represents limited spend (~$250k /yr)

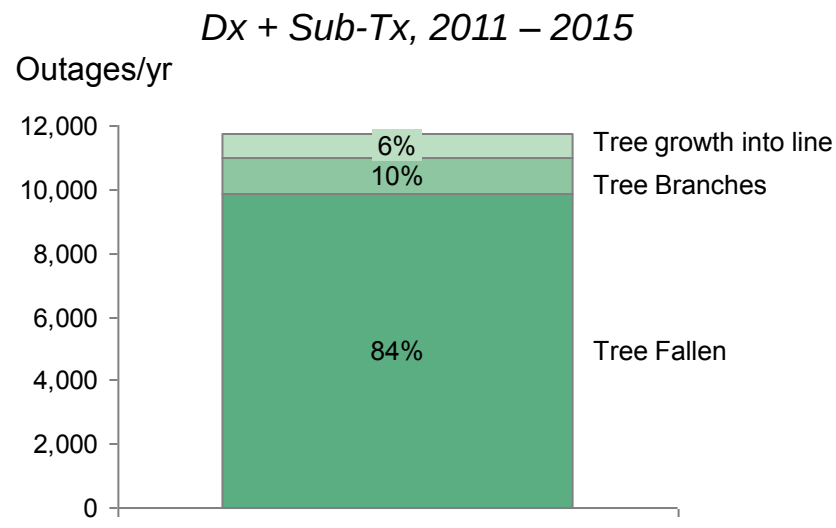
Note: Data includes LOS and excludes FM; FM events calculated using 10% methodology
Source: BCG Analysis, BCG experience with other utilities

Outages increase with time since last trim – but base level of outages likely due to fall-ins

Recently trimmed feeders still suffer from number of tree-related outages



Majority of tree-related outages caused by trees falling from off ROW



Utilities report 80-90% of fallen-tree outages are caused by trees outside managed ROW

- Challenging to identify hazard trees outside maintenance zone

Outage/km floor suggests trimming on 1-year cycle reduces tree-related SAIFI by 18%, from 0.51 to 0.42

Note: Outages/km data includes LOS and excludes FM; outages/yr data includes FM events; data follows the Hydro One standard defining a sustained outage as greater than 1 minute; FM events calculated using 10% methodology. Source: H1 OMS Data

Several potential levers identified to improve vegetation management program

Historic

Current H1 programs	$/ACI
1 Cyclic trim	Dx: $949 Sub-Tx: $325
2 Off-cycle requests	Dx: $256 Sub-Tx: N/A
3 Hazard tree program	Dx: $86 Sub-Tx: $26

= suggested approach

= in progress

( ) = negative

$/ACI reflects cost per avoided customer interruption on a 10-year timeframe

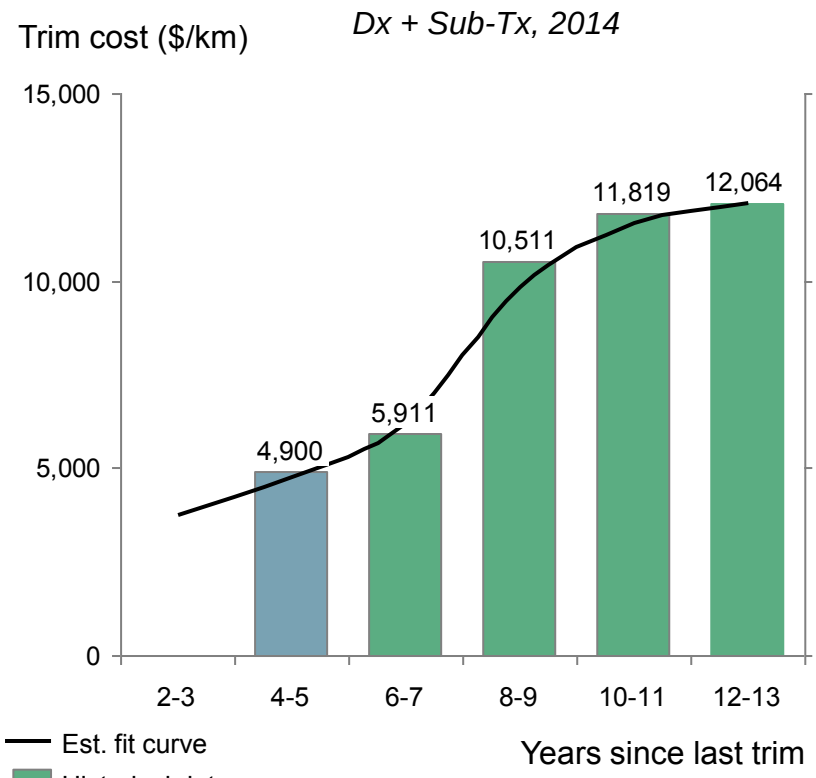
Future

	High potential reliability levers	$/ACI + ease of implementation
OM&A	4 Clear current backlog	Dx: $589 Sub-Tx: $405
OM&A	5 Adjust trim cycle	Dx: **($549)** Sub-Tx: **($589)**
OM&A	6 Increase strategic trim	Dx: $170 Sub-Tx: $96
OM&A	7 Enhance trim standards	• Trim standards in line with others; opportunity to address hazard trees?
OM&A	8 Tech-enabled risk-based trim	Dx: $310-$646 Sub-Tx: $245-$493
CapEx	9 Spacer cables	Dx: $26-$525[1] Sub-Tx: $22-$499[1]
CapEx	10 Aerial bundled cables	Dx: $2,250-2,960 Sub-Tx: $1,850-2,430

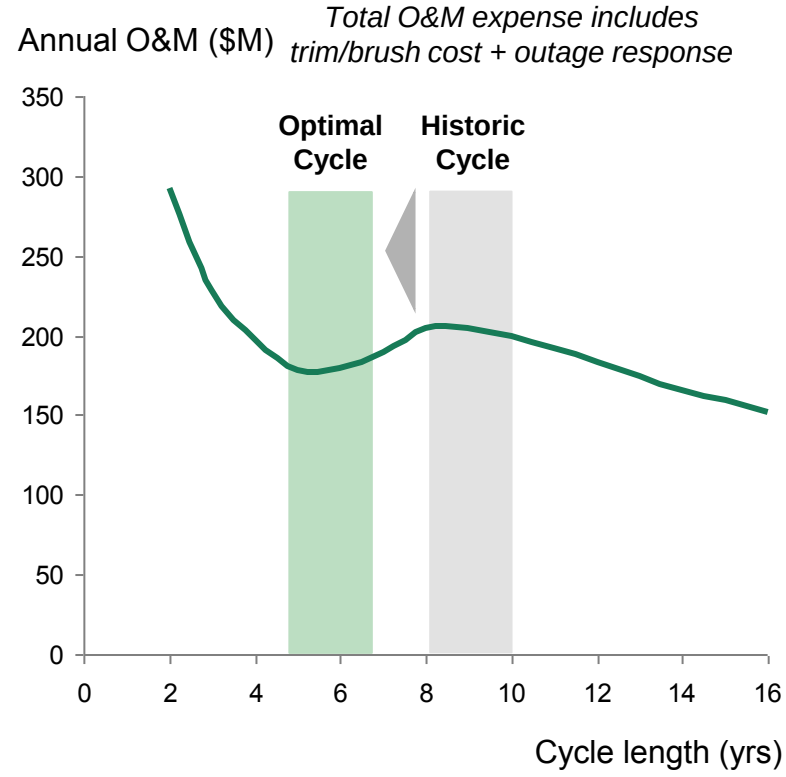
Source: BCG Analysis, H1 OMS Data, 1. Lower limit of cost range reflects $/ACI for first 100km of addressible line.

Increased trim costs with age lead to lower overall VM costs with shorter cycles

Trim cost rises with age since last trim



Opportunity to reduce total O&M expense through shift to shorter cycle

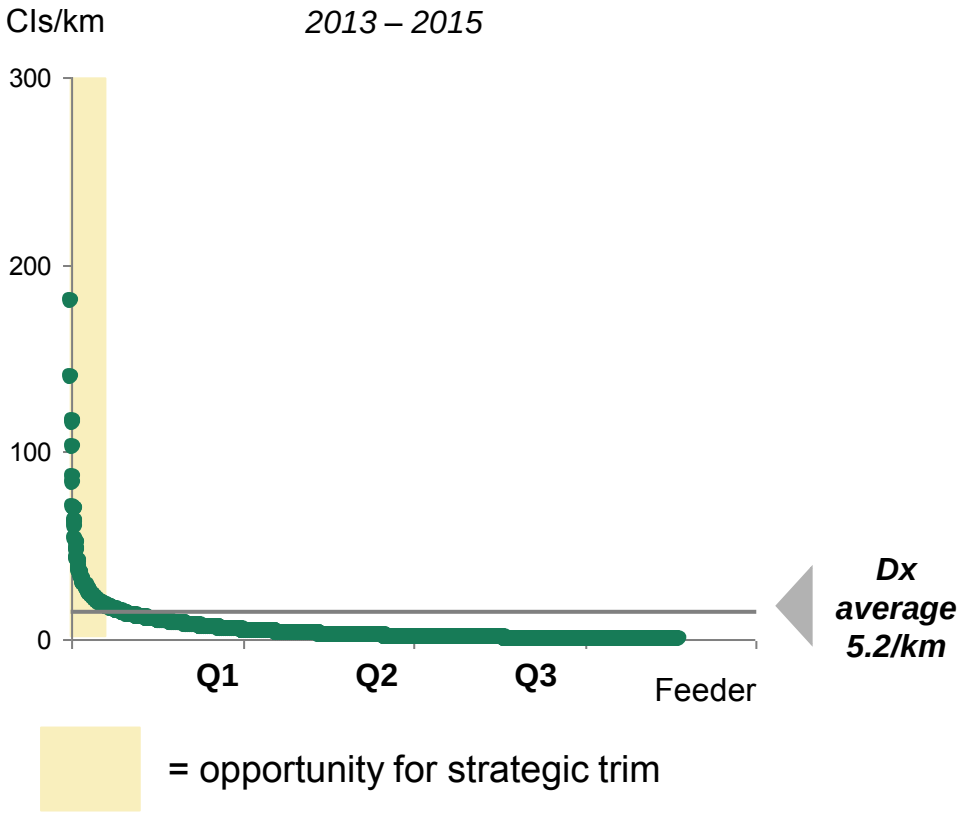


Moving to short cycle on all feeders not optimal due to execution constraints

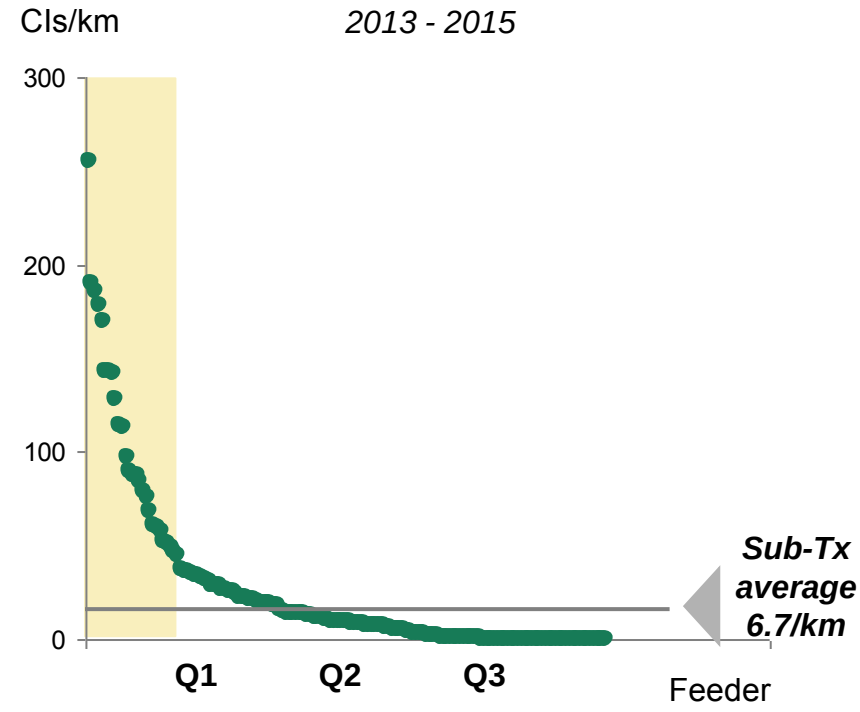
Source: H1 forestry data, H1 OMS data, H1 short cycle study

Small number of feeders have significantly more tree-related outages than system average

Tree-related customer interruptions for Dx feeders



Tree-related customer interruptions for Sub-Tx feeders



Note: Data includes LOS and excludes FM; data follows the Hydro One standard defining a sustained outage as greater than 1 minute; FM events calculated using 10% methodology
Source: H1 OMS Data, BCG Analysis

Adjusting strategic trim prioritization mechanism yields significant cost benefits

H1's current strategic trim prioritization emphasizes overall SAIDI/SAIFI

H1's current prioritization criteria

- Feeder-level reliability data (SAIDI / SAIFI for last 3 years) - **(70%)**
- Years since last trim - **(20%)**
- Condition data from SAP on per-pole defects - **(10%)**

Age and defect count do not enhance prediction of future reliability

More cost efficient to prioritize based on potential $/ACI

Focus on CI/km rather than absolute number of interruptions

- Customer interruptions (non-FM) per km is more relevant reliability metric than total CI

Factor in variation in trimming costs

- Longer feeders are more expensive to trim
- Trimming costs vary significantly by region

Projected SAIFI impact of highest priority Dx feeder trim

	H1 2016 Scheduled[1]	H1 2016 Prioritized[2]	New Priority[3]
Cost ($M)	25.5	25.7	7.3
SAIFI Improve.	0.013	0.013	0.013
$/ACI	302	303	88

1. Highest priority feeders using H1 methodology scheduled for work in 2016. 2. Highest priority feeders using H1 methodology. 3. Highest priority feeders using new $/ACI methodology.
Source: H1 OMS Data, BCG Analysis

Spacer cables provide opportunity to reduce outages from tree fall-ins, but are not suitable everywhere

Spacer cables offer potential to reduce tree-caused outage baseline

Network reliability benefits

- Reduction in tree-caused outages of 70-90%[1] relative to bare wires

Reduced tree trimming costs

- Compact design and shielded wires allow vegetation to grow closer to lines

Assumptions

Reduction in VM spend of 30%[3,4] and tree-related outages by 70%[1]

Incremental spacer cable cost is 15% above bare line cost[3,4]

Spacer cables have low $/ACI on select feeders

	Dx	Sub-Tx
Spacer Cables	$26-$525[2]	$22-$499[2]

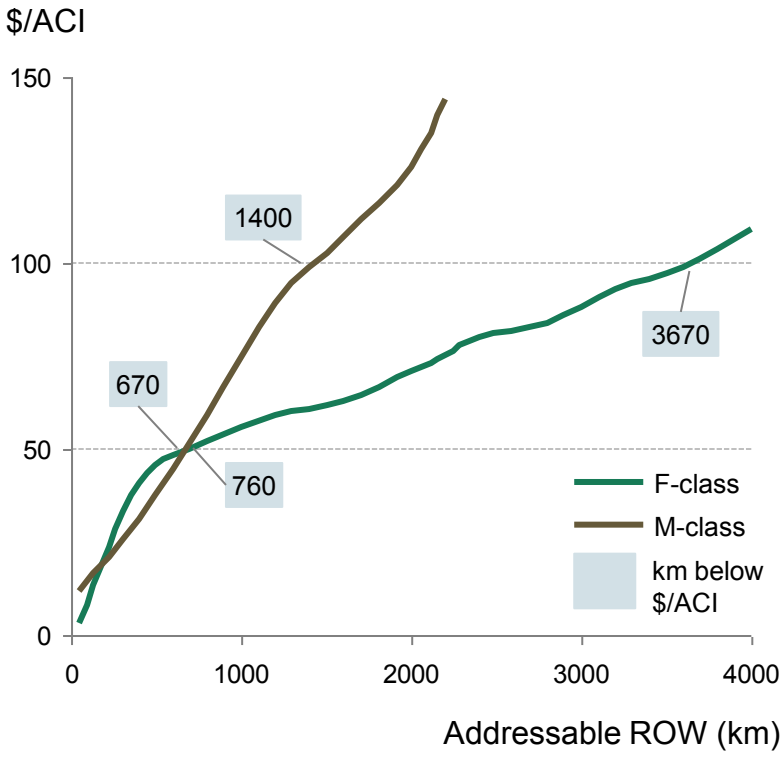
Initial Observations

1. Low $/ACI for both Dx and Sub-Tx on high-impact feeders
2. Cost effectiveness of spacer cables highly dependent on reduction in customer interruptions
3. Spacer cables likely not suitable for widespread deployment, but appear cost effective for some feeders

Outages measured under all conditions
Source: H1 OMS Data, 1. Electric Power Distribution Handbook, T&D World. 2. Lower limit of cost range reflects $/ACI for first 100km of addressible line. 3. CEMIG (Brazil) case study 4. Hendrix Wire and Cable, BCG Analysis

Spacer cables cost effective on significant portion of ROW

ROW addressable by spacer cables



Replacement program targets highest impact feeders at end of line life

Spacer cables only suitable when line is at end of life or for new build

- Not cost effective to replace conductors which are in good condition

Feeders with highest CI/km are most attractive target for replacement

- Areas with either high outages/km (densely forested) or high CI/outage (densely populated) are good candidates

Trimming standards can be adjusted on replaced feeders

- Compact design and covered conductors permit smaller clearances

Deployment will require implementation of new design standards as lines reach end of life

Source: H1 OMS data, H1 forestry data

Summary of proposed vegetation management program

1. **Strict maintenance of shorter cycle on high-priority feeders**
   - Maintain M-class, LDA-serving, and 3-phase F-class feeders on strict cycle corresponding to lowest total VM costs

2. **Increased use of targeted strategic trim on lower-priority feeders**
   - Adjust prioritization methodology to maximize avoided customer interruptions per dollar
   - Continue to evaluate tech-based monitoring to better assess vegetation risk

3. **Deployment of spacer cables in high-impact areas as lines reach end of life**

4. **Management of existing backlog to maintain system integrity**
   - Will need to establish maximum age since last trim
   - Likely to be driven by regulatory pressures

Appendix

Shortening trim cycle results in lower costs and higher reliability

Methodology

Calculated total veg mgmt cost for various trim cycle lengths
- used historical $/km trim cost data

Determined historical outages/km for all Dx feeders based on time since last trim

Estimated impact of scenarios on tree-related SAIFI
- reduction in tree-related outages used to calculate O&M savings from storm/trouble calls

Assumptions

Sub-Tx feeders display same rate of reliability benefit degradation from veg mgmt as Dx feeders

Shorter trim cycle would yield lower overall costs and better reliability

Cycle Length	Total cost *(trim + brush + trouble calls)*	Tree-related SAIFI
1	485	0.420
2	292	0.433
3	229	0.446
4	197	0.460
5	178	0.473
6	179	0.486
7	190	0.500
8	207	0.513

Initial Observations

- System will be further segmented to determine optimal cycle length for feeder subsets

Note: Data includes LOS and excludes FM; data follows the Hydro One standard defining a sustained outage as greater than 1 minute; FM events calculated using 10% methodology
Source: H1 OMS Data, BCG Analysis

Targeted strategic trim is more cost effective than cyclic trim

Methodology

Estimated $/ACI for each feeder

- Outages/km assumed to reach system average after targeted trim
- Trim cost estimated from historical data

Rank ordered feeders from worst to best based on $/ACI

Determined total cost and reliability impact for all feeders with $/ACI below $300

Assumptions

Assumed feeder outages/km reaches system average after strategic trim

Linear decline in VM benefit over 5 year period

Projected impact from first year targets

	Dx	Sub-Tx
Total ACI (5-yr)	220,000	209,000
Trim Cost	$37 M	$20 M
SAIFI Improvement	0.034	0.032
$/ACI	**170**	**96**

H1 has strategic trim program

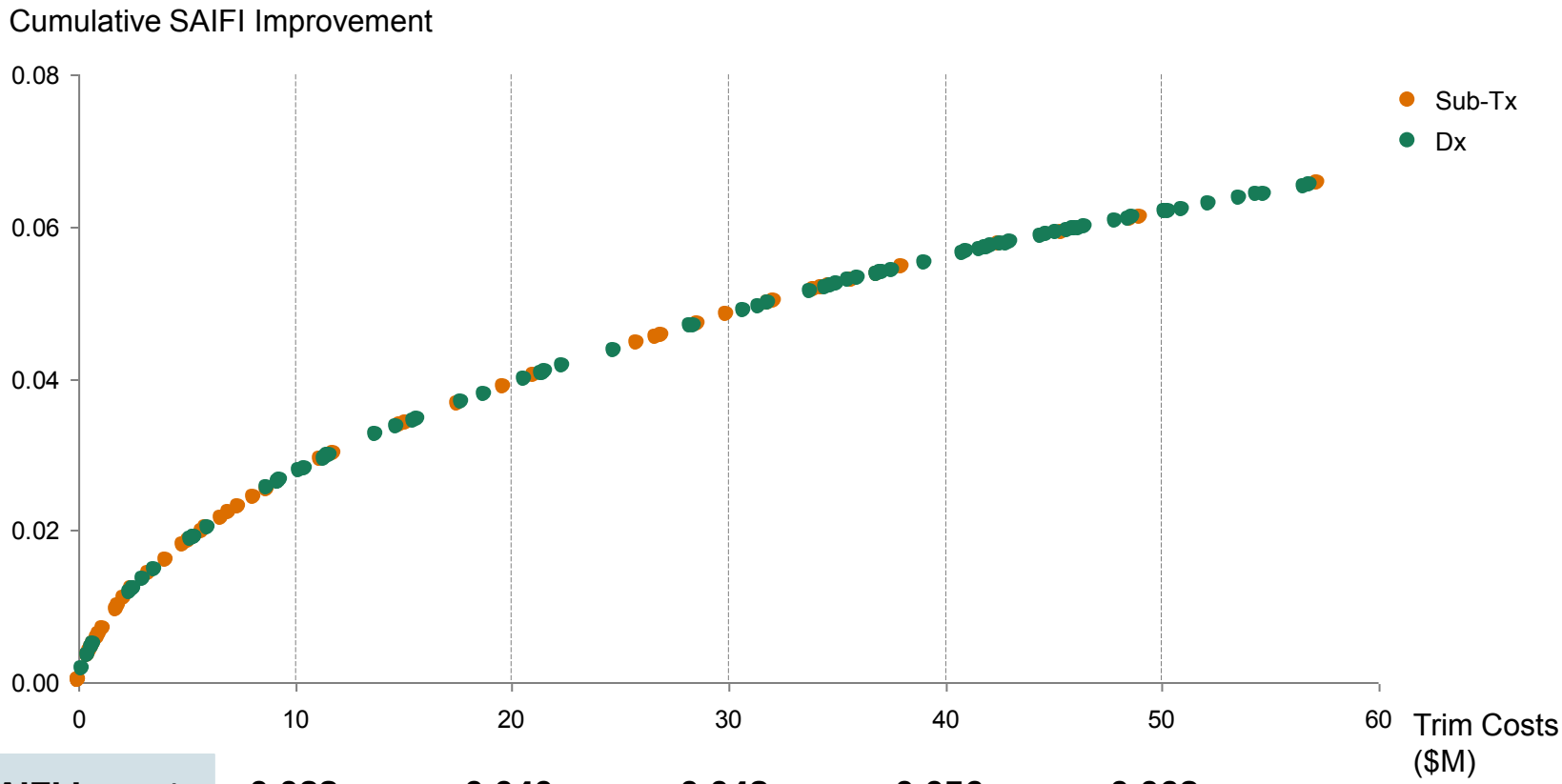
Initial Observations

1. High-outage feeders represent large SAIFI improvement opportunity
2. Hydro One initiated strategic trim program on F-class feeders in 2016

Source: H1 OMS Data, BCG Analysis

Well-targeted strategic trim has large SAIFI impact

SAIFI Improvement for various levels of strategic trim spend



SAIFI Imprvt.	**0.028**	**0.040**	**0.048**	**0.056**	**0.062**
$/ACI	**$56**	**$79**	**$95**	**$111**	**$124**

Source: H1 OMS Data, BCG Analysis

Recent reliability is best predictor of future SAIFI

Years since last trim and defects/km do not reliably predict SAIFI for individual feeders

Factors used in current strategic trim prioritization

1. Feeder-level reliability data (SAIDI / SAIFI for last 3 years) - (70%)
2. Years since last trim - (20%)
3. Condition data from SAP on per-pole defects - (10%)

Recent CI/km is only significant predictor of 2015 CI/km[1]

	Coeff.	Std. Error	p-value
2012-2014 CI/km	0.66	0.06	2×10^{-25}
Age (yrs)	-0.21	0.16	0.21
Defects/km	0.14	0.31	0.66

Suggested new prioritization criteria

1. Length-normalized feeder-level reliability data (CI/km for last 3 years)

\+

2. Trimming cost/km

= **Projected $/ACI for each feeder**

1. Multiple regression analysis performed on feeders trimmed prior to 2014. Coefficient indicates rise in 2015 CI/km for one unit rise in independent variable listed. P-value is likelihood relationship between variables was obtained by chance.

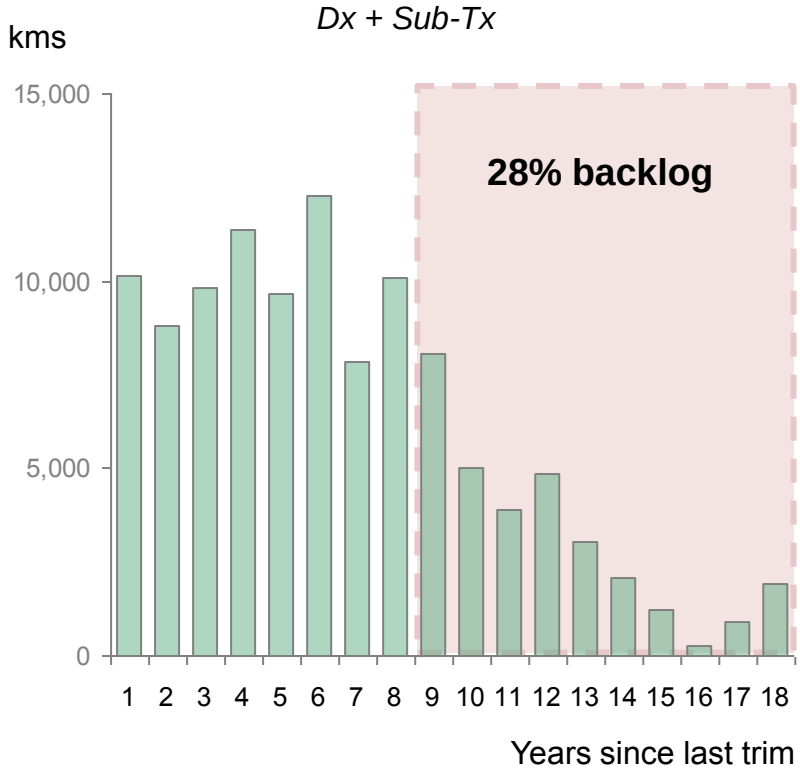
Jurisdictions with mandated vegetation management have similar clearance standards to Hydro One but shorter cycles

State/province (standard)	Horizontal Clearance (m)	Vertical Clearance (m)	Trim Cycle (yrs)	Motivation
Hydro One	3.0 (at trim)	3.0 (at trim)	8	• Provide cost effective service that mitigates tree related risk
Maryland	3.0 (at trim)	3.0 (at trim)	4 (urban) 6 (rural)	• Response to PEPCO's status as one of the most unreliable utilities
Alberta	1.0	2.0	n/a	• Desire to create 'best in class' utilities which comprehensively address risk of tree contact
Oregon	1.5	1.5	n/a	• Attempt to mitigate accidents and electrocutions from climbing tree near power lines
California	1.2	1.2	n/a	• Primarily adopted to reduce high risk of fire
Missouri	n/a	n/a	6(r) 4 (u)	• Improve utility reliability
Oklahoma	n/a	n/a	4	• Improve utility reliability
Florida	n/a	n/a	3	• Reduce hurricane related damage

Source: 1. CNUC 2010 Regulatory Requirements Report 2. Oregon Public Utilities Commission Division 24 Safety Standards. 3. Electrical Protection Act Alberta Electrical & Communication Utility Code Section 3.1.7 4. MD PSC RM 43 Vegetation Management 5. California Public Resource Code 4293, General Order 95 Rule 35

Backlog has now grown to nearly 30% of entire right-of-way, increasing strain on vegetation management

28% of right-of-way is greater than 8 years since last clearing



Backlog imposes growing burdens on vegetation management

Trimming costs increase with years since last trim

- More trees must be addressed in cyclic trim
- Higher-cost labor must be employed for brush management when brush nears lines (>6 years)

Safety concerns rise for trimming and outage response

- Overgrown feeders present greater challenges for forestry and repair crews working in vicinity of lines

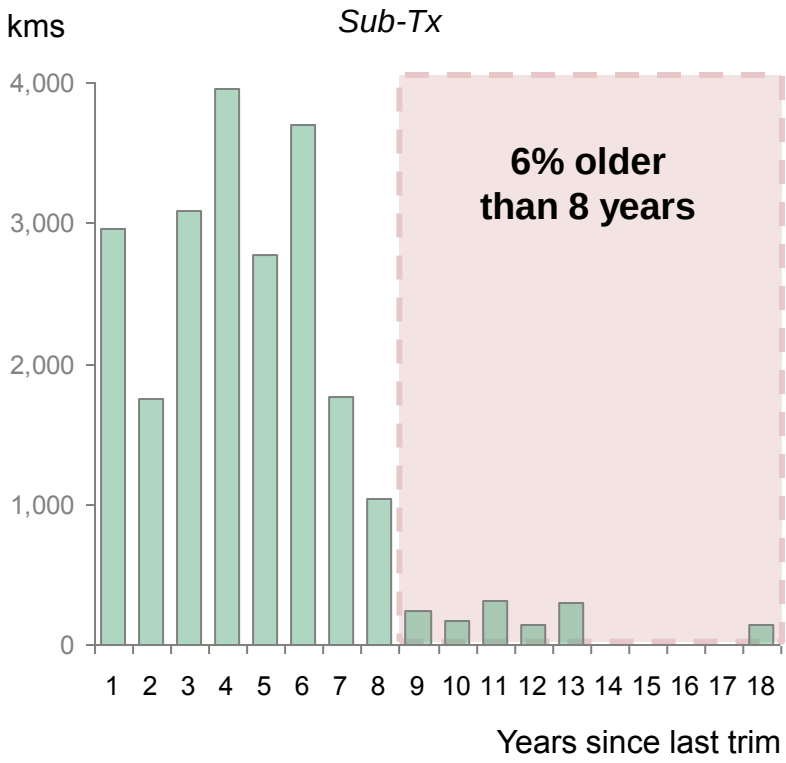
Tree-related outages increase with years since last trim

- Outage rate rises linearly with trim age causing deterioration in system SAIFI

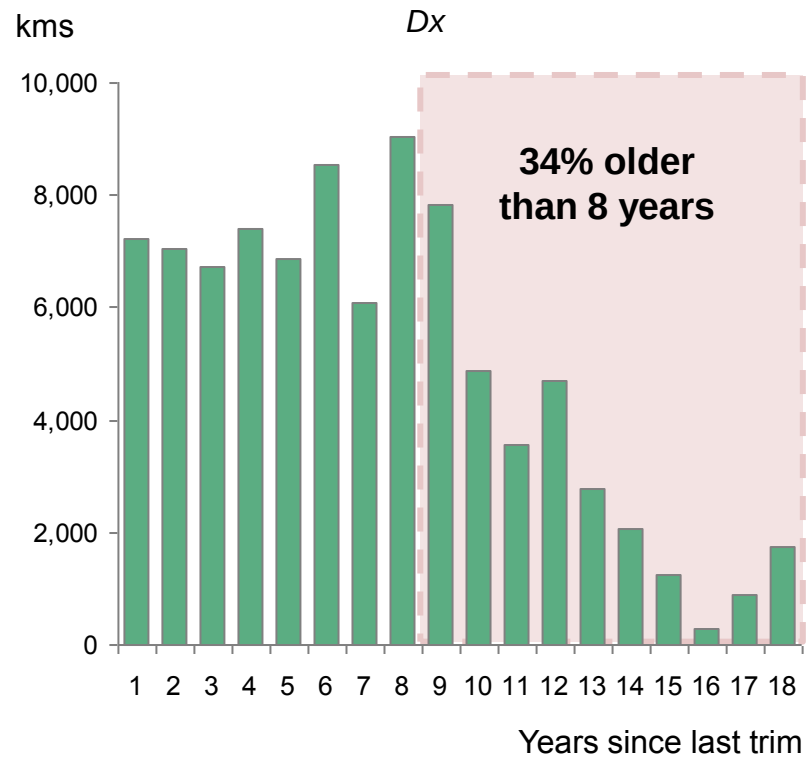
Source: Hydro One Asset Portfolio Document: Right-of-Way Management

Sub-Tx lines have been maintained on a 6-8 year cycle at the expense of Dx lines

Nearly all Sub-Tx lines have been maintained on 6-8 year cycle



Over one third of Dx feeders older than 8 years old



Current vegetation management spending insufficient to maintain all ROW on <8 year cycle

Source: Hydro One Asset Portfolio Document: Right-of-Way Management

BCG

hydro one

Strategic Plan

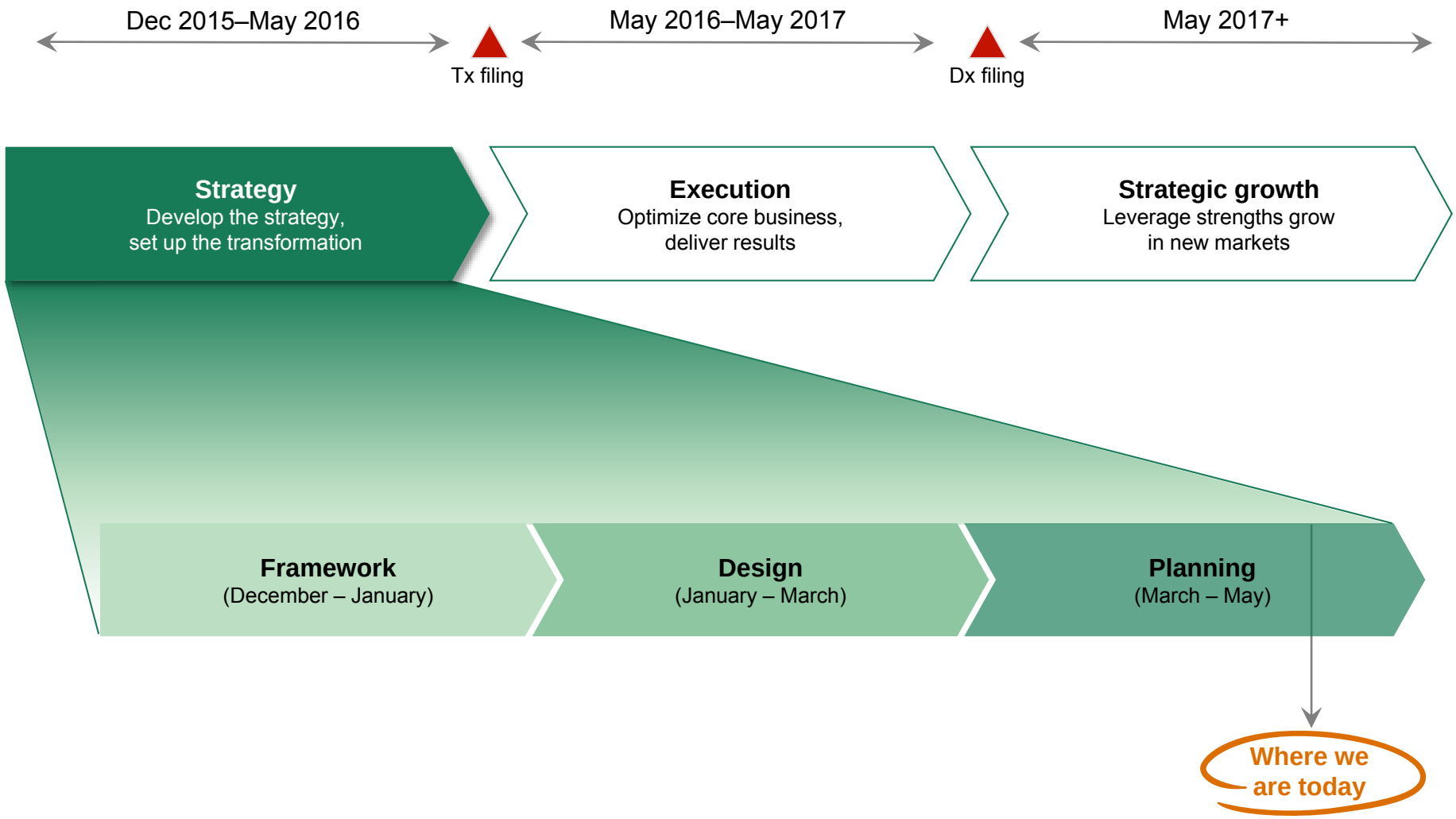
Board of Directors discussion document

May 6, 2016

The Boston Consulting Group

Context: Where we are in the longer-term journey

Completing Planning in preparation for Execution



Board meetings in 2016

January 14

Review strategic framework
- Baseline trajectory
- Strategic framework
- Strawman strategy and transformation sequence
- Plan to finalize strategy and launch transformation

March 31

Review draft of strategy
- Voice of customer
- System investment plan
- Capital delivery strategy
- Customer service roadmap
- Efficiency opportunity scaling

Confirm direction of Tx filing
- Investment plan and supporting evidence
- Customer input
- Bill impact

For education
- [redacted]

May 6 (Today)

Approve
- 5-year strategy

Review
- Top-down 5 year financials
- 2-year Tx filing ('17-'18)
- Initial perspectives on 2017 Dx filing & selected strategic choices
- Core capabilities for T&D operators
- Good to Great execution plan

For education:
- [redacted]

August 12

Update on Good to Great execution

For education:
- [redacted]

December 2

Approve
- 6 year business plan (2017-22)
- Budget (2017)

Review of 2018-22 Dx filing

Review IT strategy

Update on Good to Great execution

For education:
- [redacted]

Our agenda for today

Topic	Lead	Time (min)
Opening	*Mayo Schmidt*	5
Overall strategic narrative	*Mayo Schmidt*	30
Deep dive topics		
• Top down 5 year financials	*Mike Vels*	30
• Tx filing	*Oded Hubert / Mike Penstone*	30
• Dx filing	*Oded Hubert / Mike Penstone*	20
• Capabilities	*Mayo Schmidt*	20
• Good to Great execution plan	*Stefanie Stocco*	10
Closing and next steps	*Mayo Schmidt*	5

Overall strategic narrative (I)

Since privatization, Hydro One has embarked on a journey to becoming a best-in-class, customer-centric commercial organization. This is consistent with the 4 core principles of the RRFE[1]

- Customer focus: Responding to the needs and preferences of customers
- Operational effectiveness: Meeting reliability and quality objectives while continuously driving productivity
- Public policy responsiveness: Delivering on obligations mandated by government
- Financial performance: Maintaining financial viability, sustaining operational effectiveness efforts

Our strategy translates these principles into our approach to

- Serving our customers
- Forming our investment plans (for approval in rate filings)
- Operating and managing the costs of our business

…while maintaining our strong commitment to Safety and the Environment

Serving our customers: Improving the end-to-end customer experience and satisfaction by addressing the unique needs of our four core segments. In the near-term we will focus on:

- Residential/Small Business: Improving first-call resolution, enhancing digital experience, redesigning the bill
- Commercial & Industrial: Marketing energy conservation programs, improving first-call resolution
- Large Distribution: Marketing energy conservation programs, better communicating unplanned outages
- Transmission: Pro-active reporting on power quality and reliability, following through on commitments made

1. Renewed Regulatory Framework for Electricity

Overall strategic narrative (II)

Forming investment plans: Be responsible stewards of assets while taking a customer-centric approach

- Transmission: Sustain assets to meet reliability, risk, and power quality needs of customers
- Distribution: Transition to a modern, reliable grid through condition-based asset renewal and targeted enhancement programs to increase reliability and functionality with highest return on investment

Investment plans will be presented in 3 rate filings, each with unique objectives to consider:

- 2-year Transmission filing (May 2016):
  - Signal longer-term capital plan (5 year plan weighted to out-years, based on risk modeling)
  - Shift to RRFE[1] principles (e.g. consult with customers, incorporate productivity commitment)
- 5-year Distribution filing (May 2017):
  - Assess range of investment options through customer consultation
  - Align on incentive rate structure based on capital flexibility and fair distribution of productivity incentives
- 5-year Transmission filing (May 2018):
  - Secure investment plan previewed in May 2016 submission and replicate
  - Replicate incentive rate structure established in Distribution the prior year

Operating and managing the costs of our business: Set efficiency targets informed by benchmarks and track through a performance management system

- Efficiency program launched to both offset customer bill impacts and capture productivity benefits
- Unconstrained potential of ~$200M (~50/50 OM&A vs. capital) with varying degrees of difficulty to capture
- Execution already underway to build early momentum and drive impact near-term

1. Renewed regulatory framework for electricity

Overall strategic narrative (III)

Our strategy effectively balances shareholder returns and rate payer impacts over the next 5 years

- Total capital expected to grow to ~$2B+ by 2021, resulting in rate base of ~$22B (~5-6% growth)
- OM&A expected to remain flat to 2021, with cost pressures (e.g. inflation) offset by efficiency program impacts
- Range of scenarios possible, depending on investment plan approval and efficiency potential realized
- Implies [redacted] TSR and annual tariff increases of 2-3% for Distribution and 5-6% for Transmission

As we continue our transition to a high performing culture, we have identified 10 core capabilities to successfully deliver on this plan and prepare us for future growth

- Aspire to be best-in-class in 3 of them: customer service, regulatory, asset management
- While still early, already down path of developing and embedding improvements across 10 core capabilities
- Assessment, development and acquisition of talent remains a critical focus

Achieving excellence in these areas prepares and earns us the right to grow beyond our core business

[redacted]

Proposed deep dive topics

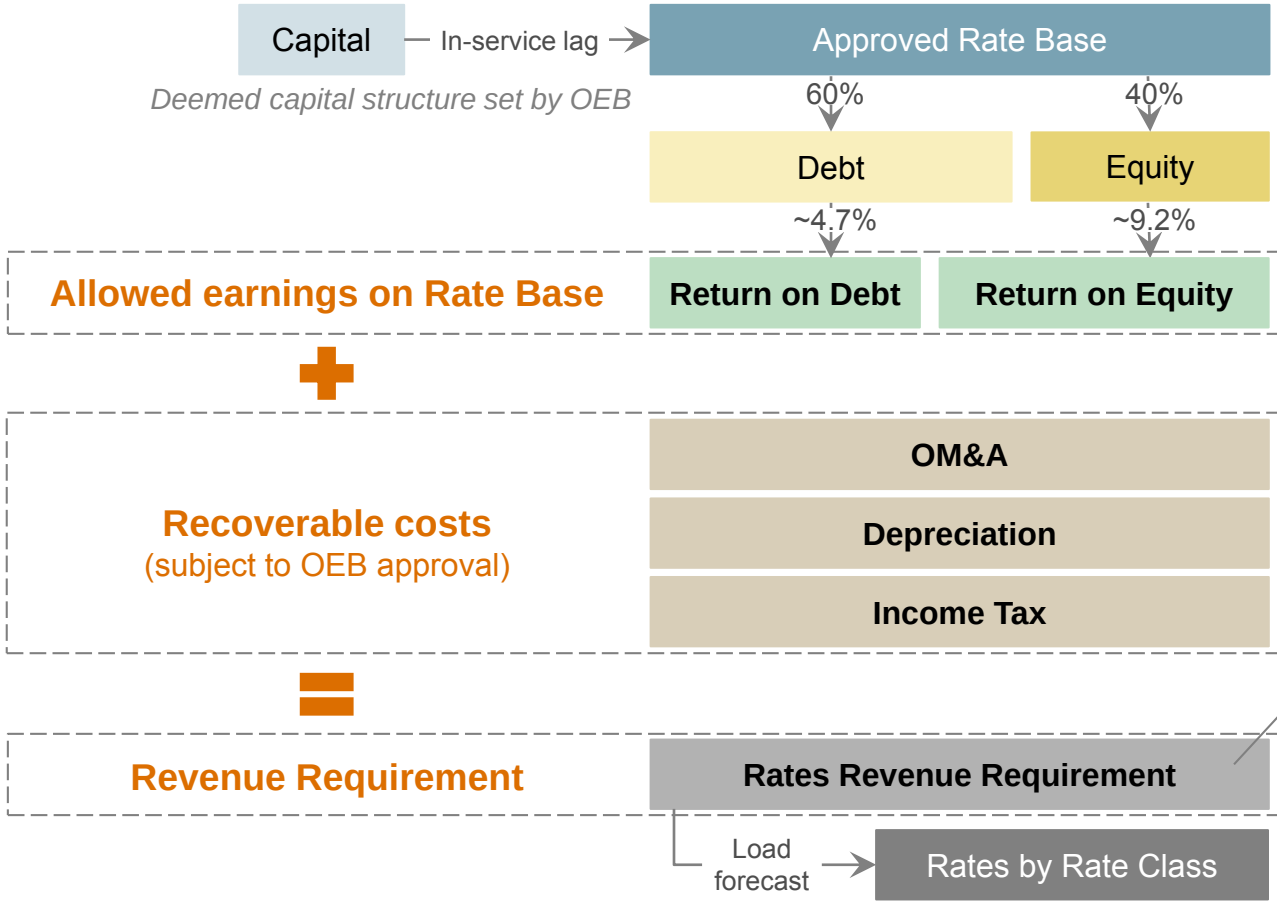
Focus area	Key topics to discuss
1 Top-down 5 year financials *page 9-15*	• Economics of our business: how rates are set in CoS vs IRM[1], economic drivers • Scenarios: Range of outcomes based on OEB approval, efficiencies realized • Summary of 5-year projected Capital spend and OM&A (by scenario) • Preliminary [redacted] TSR and average tariff increase (by scenario)
2 Tx filing *page 16-20*	• Strategy for filing • Summary of our ask and rationale • Impact of proposed plan on tariffs and customer bill • Key strategic issues and positioning • Key risks and mitigation
3 Dx filing *page 21-25*	• Strategy for filing • Historical Distribution performance and network needs • Potential investments and impacts • Customer engagement
4 Capabilities *page 26-31*	• Overview of key capabilities for T&D companies • Where to invest and build in being best-in-class • Approach for Hydro One capabilities maturity assessment and next steps
5 Good to Great execution *page 32-33*	• Summary of initiative pipeline • Review of program management structure to support execution

1. CoS = Cost of Service (existing rate structure), IRM = Incentive Rate mechanism (required rate structure under Renewed Regulatory Framework for Electricity)

Background: Economic basics of Hydro One's business

How rates are set	• **Allowed earnings** set based on target return on approved capital base • Revenue requirement permits **recovery of approved costs** • Rates calculated based on expected volume (also known as load forecast) • **Actual earnings** can differ from allowed based on load and cost variances
How rate-setting differs by rate structure	• **Cost of Service:** rates reset every year to reflect expected changes to both approved capital base and costs to operate business • **Incentive Rate Mechanism (IRM):** rates for Year 1 (test year) set identically to Cost of Service. In subsequent years, rates determined by inflation-based formula, adjusted for planned capital spend • **Shift from Cost of Service to IRM** implies higher risk on recoverable capital (longer planning horizons, less flexibility), while rewarding (but also requiring) productivity improvement
Sensitivity of key economic drivers	• **Five key economic drivers:** approved capital, approved OM&A, cost efficiencies, load, allowed return on deemed equity • Approval of capital and OM&A the key drivers under Hydro One control • Cost efficiencies with moderate impact on Distribution, lower on Transmission • Return on deemed equity high impact, but outside of Hydro One control

How rates are set and how this differs by rate structure



Cost of Service model

- Annual reset of revenue requirement (to reflect rate base, cost changes)
- Short window to capture run-rate savings as net income

vs.

Incentive Rate Mechanism

- Cost of Service build-up in Year 1
- Years 2-5: revenue requirement escalated off year 1 using inflation-based formula
- Run-rate cost efficiencies flow through to net income until Year 6 reset

Actual earnings often differ from allowed earnings due to variance in costs and load

Sensitivity of key economic drivers

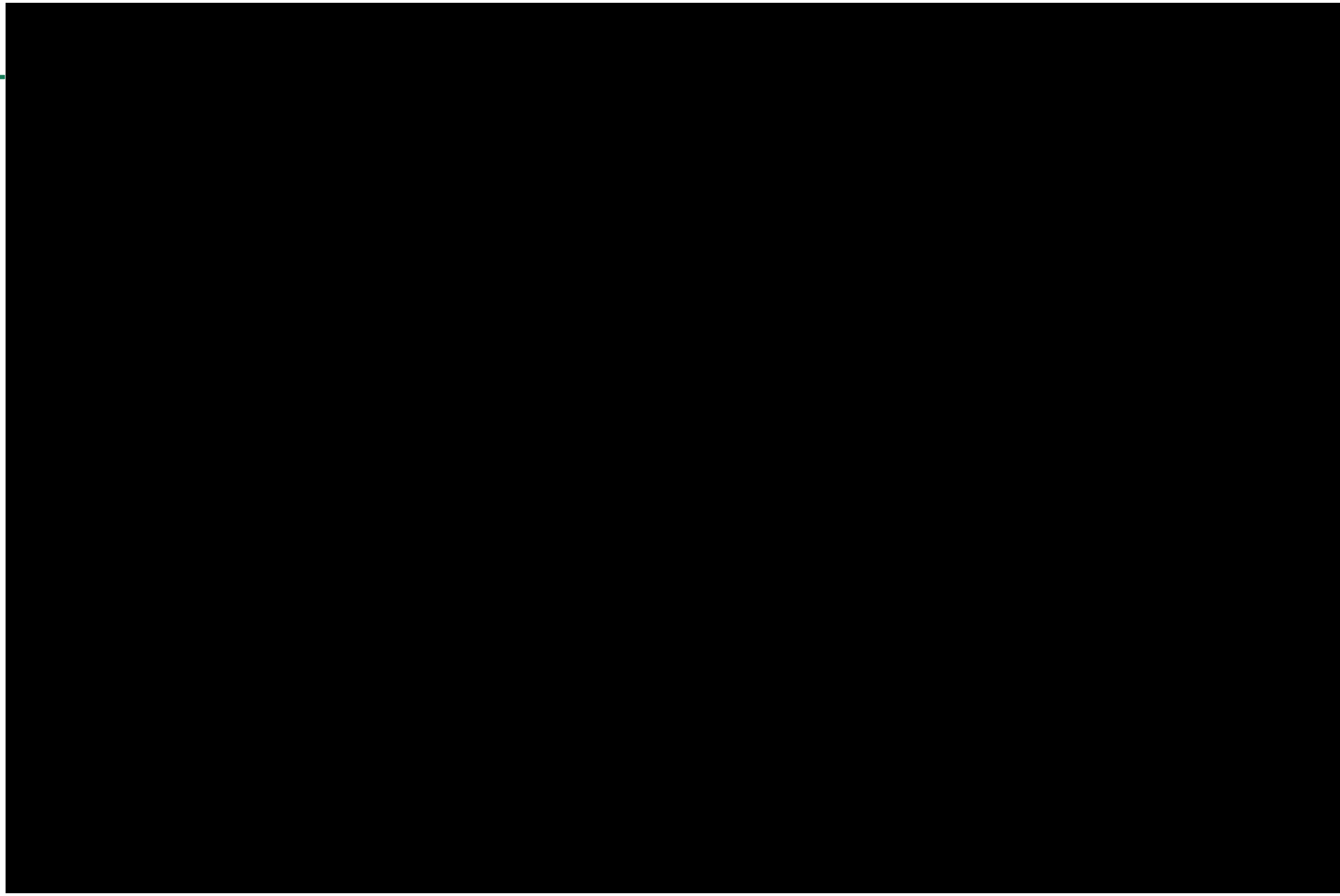
Drivers	Starting point	Sensitivity	Earnings impact ($M average annually, 2017-2021)
Approved OM&A (% of investment plan)	100% of planned OM&A approved by OEB	[redacted]	
Approved capital (% of investment plan)	100% of planned Capital approved by OEB		
Cost efficiencies ($M of OM&A efficiencies realized)	No OM&A efficiencies realized		
Load (% variance to forecast)	No variance to forecast		
Allowed return on deemed equity (% return on equity)	9.19% (2016 actual)		

[redacted]

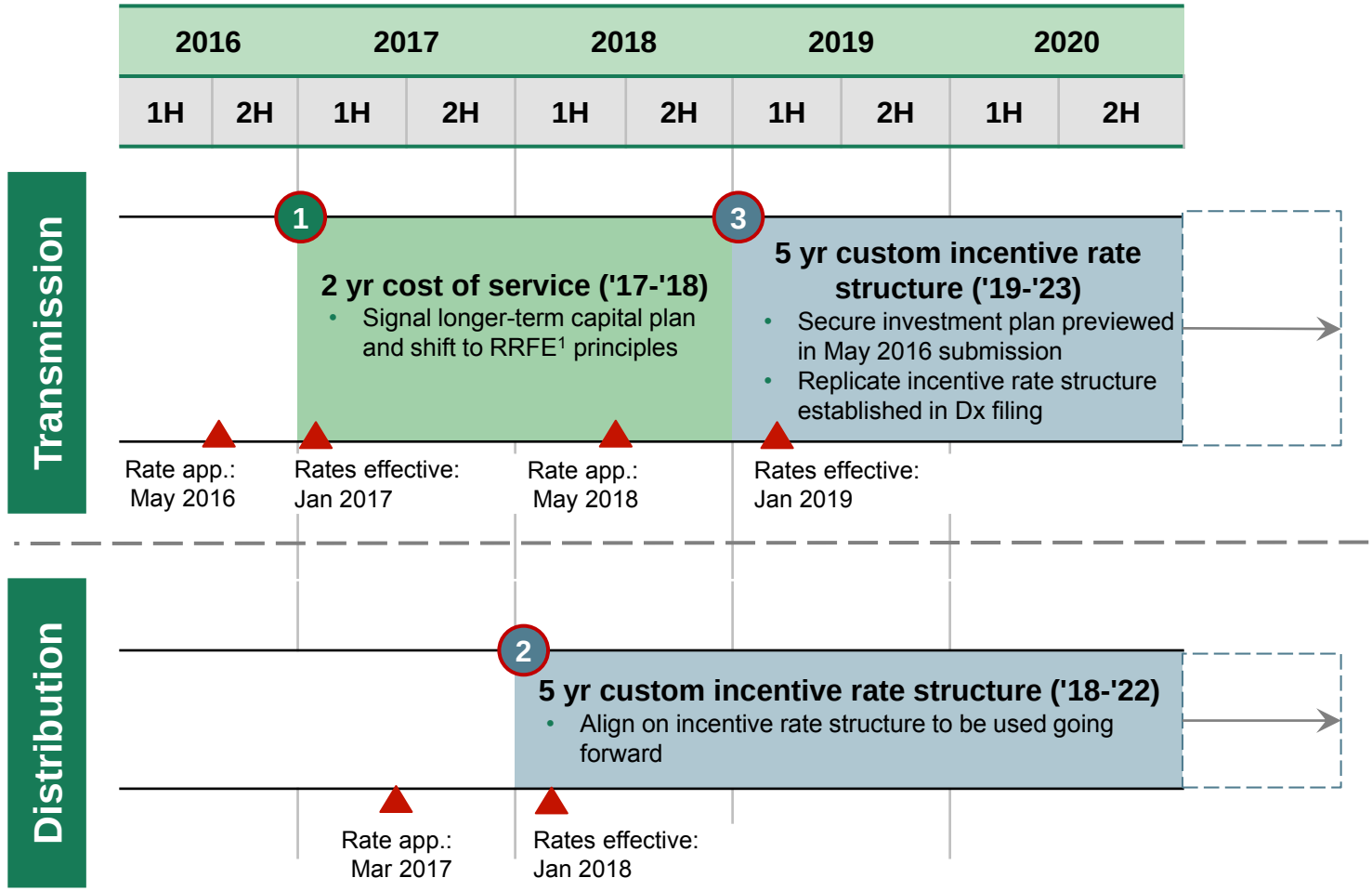
1. Based on last 5 years of Hydro One filings and recent filings from other Ontario distribution companies

[redacted]

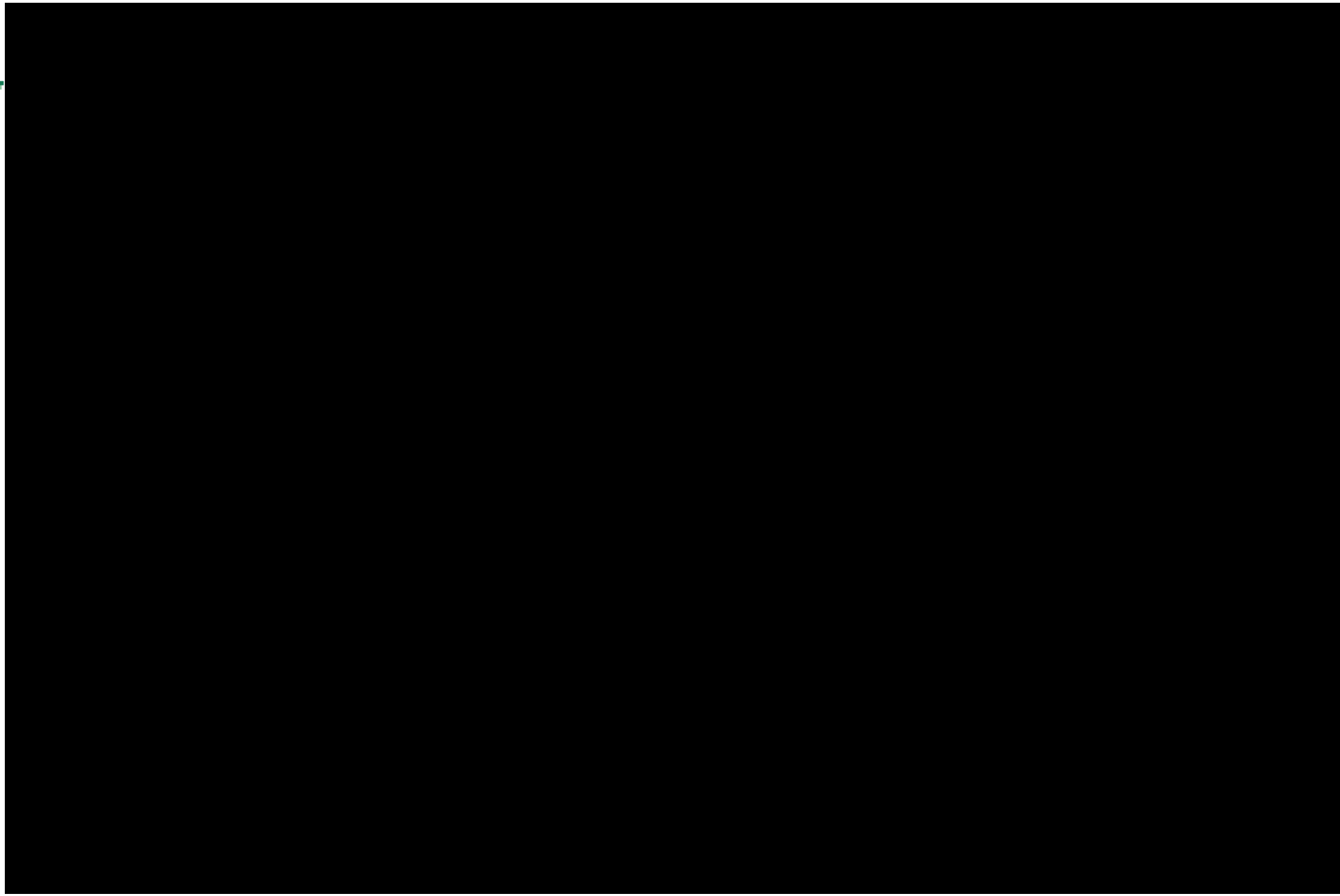
Note: Confident = Execution prerequisites largely in place; Challenging = Many interdependencies to consider and get right; Constrained = Renegotiations required to realize value

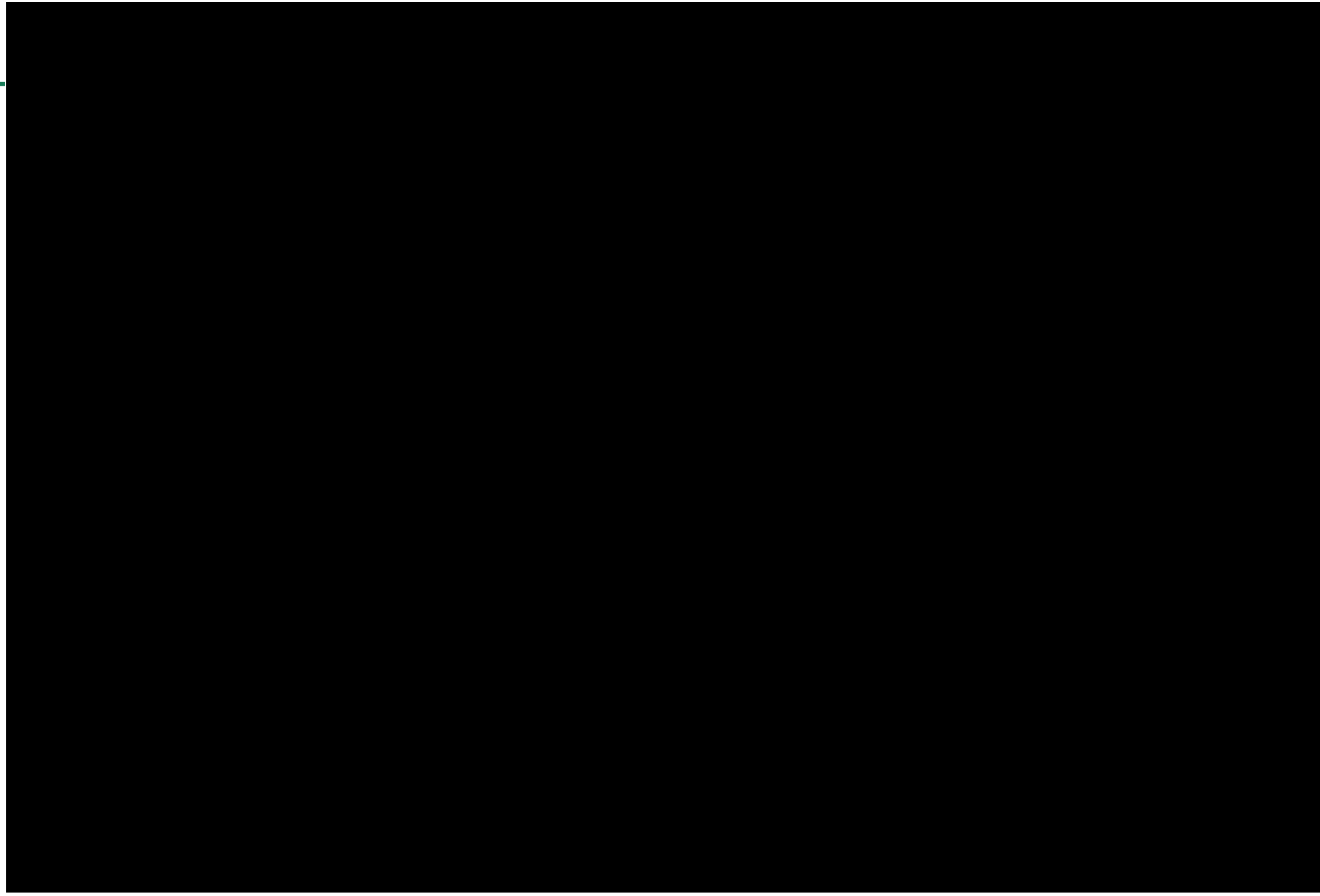


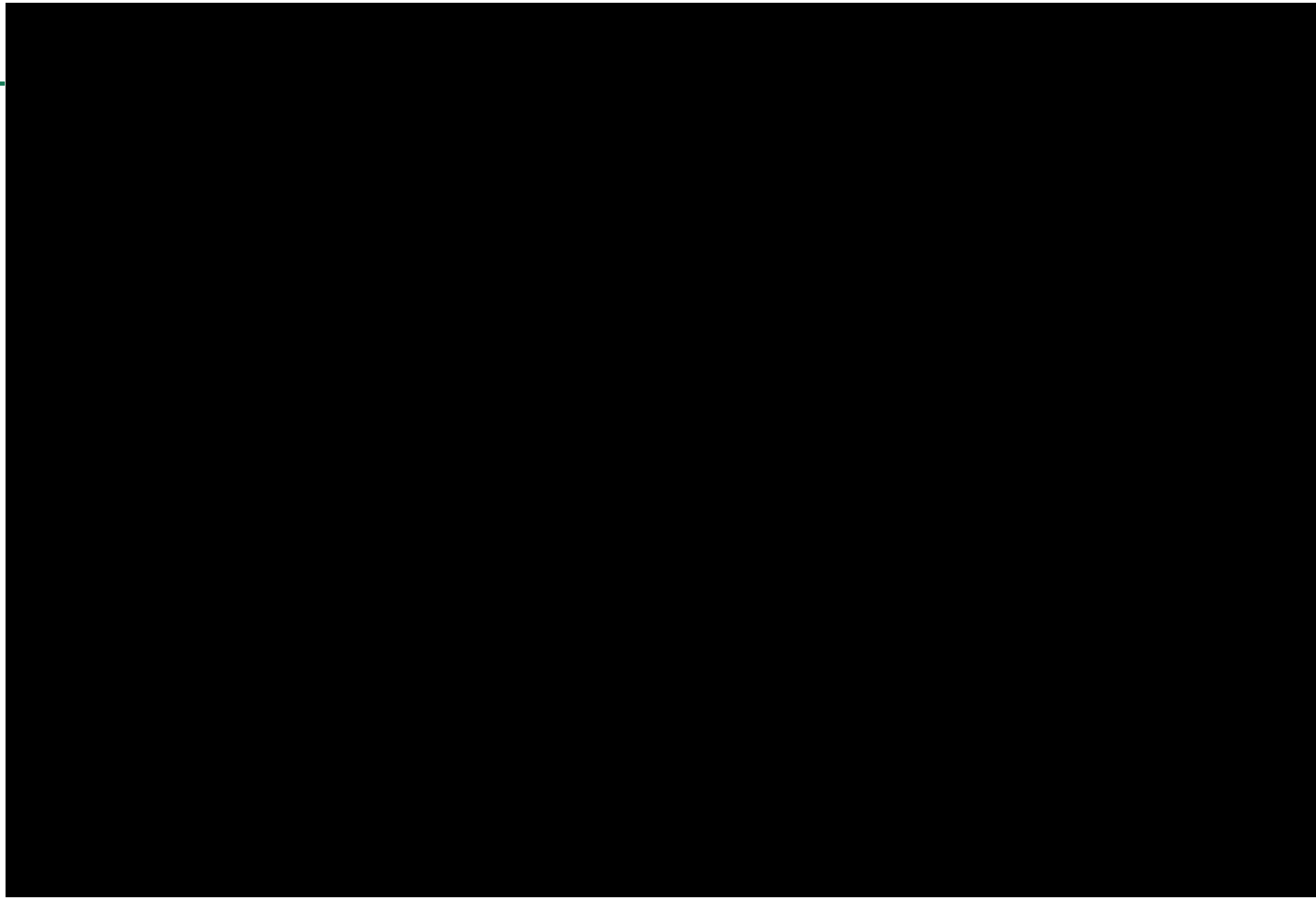
Timing and objectives of 3 upcoming filings



1. Renewed regulatory framework for electricity







Background / context for Hydro One Dx rate filing

Hydro One's previous RRFE[2] Dx rate application not accepted by OEB in Mar '15

At highest level, application not accepted due to insufficient alignment with RRFE[2]

- However, '15-'17 rates were accepted on a Cost of Service basis

Several specific reasons cited:

- Inconsistency with outcome-based regulation
- Lack of externally imposed incentives to inform productivity and efficiency gains
- Weak benchmarking evidence
- Limited prospects for continuous improvement
- Unclear demonstration of value to customers

In addition, OEB highlighted ten specific studies to complete and address in subsequent filing

- Largely focused on productivity and benchmarking[1]

Key steps being taken to address areas of concern in upcoming Dx application

Incorporate incentive rate structure to drive RRFE[2]'s desired performance outcomes

Heavily leverage customer engagement findings to inform Distribution System Plan

- Customer need and preferences to drive investments

Reflect thorough internal and external benchmarking to support:

- Levels of planned spend,
- Opportunities for improvement / efficiency

Include an Earnings Sharing Mechanism to align financial incentives with customers

Remove complexity wherever possible

2018 – 2022 Dx filing will be first Hydro One filing that is *fully* consistent with RRFE[2] framework

1. Relevant benchmarking studies include: Vegetation management program, station refurbishment program, total factor productivity, and compensation 2. Renewed regulatory framework for electricity

Shift to incentive rate mechanism has implications for Hydro One planning and performance management

5-year Dx filing will fall under an incentive rate mechanism...

Three available incentive rate mechanisms:

- **Annual index -** rate increases limited to inflation less a productivity improvement factor
- **Price Cap –** similar to annual index, with tools for recovery of capital from unforeseen events
- **Custom –** applicant must define a custom formula to capture 5-yr capital and O&M needs

Selection of mechanism to be based on balancing flexibility (required to meet Hydro One's needs) with complexity (which drives regulatory risk)

Several features common to all 3 mechanisms:

- In-service variance account calculated annually
- Mandatory OM&A efficiency improvements
- Costs re-based only once every five years
- Earnings sharing mechanism to ensure alignment of incentives with customers

...necessitating an increased focus by Hydro One on three areas

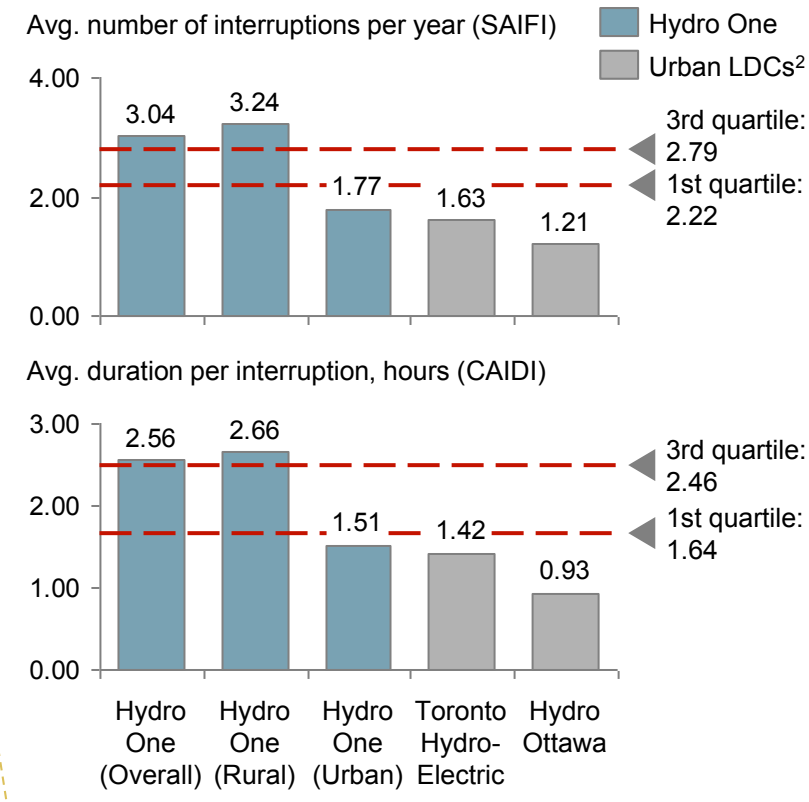
1. **Living within our means – staying within capital envelope**
2. **Improving rigour in planning and execution – need to ensure we "get it right"**
3. **Becoming more efficient – driving and measuring productivity across LOBs**

Distribution system presents a unique set of challenges relative to transmission system

	Transmission	Distribution
Reliability		Consistent 4th quartile reliability
OM&A intensity		Annual OM&A expense ~80% of CapEx
Capital profile		High volume of simple, lower-cost, single-year projects
Customers		~1.3M direct-connected customers • Residential (1.2M) • Industrials • LDCs • Commercial • Small Businesses
Customer satisfaction		~70 – 80%

'13-'15 Reliability

Relative to CEA benchmarks[1]



1. CEA benchmark composed of large, provincial Canadian electric utilities with comparable rural service territories to Hydro One, including B.C. Hydro, FortisBC, Maritime Electric Company, New Brunswick Power, Newfoundland and Labrador Hydro, and Nova Scotia Power Inc.; benchmark quartiles based on average '11-'13 performance 2. Data for Toronto Hydro and Hydro Ottawa are averages of 2011-2013 (most recent period available), excludes force majeure and includes loss of supply; Source: Toronto Hydro and Hydro Ottawa rate filings

Dx spend divided into foundational and enhancement

Level of enhancement spend and associated performance impact to be informed by customers

Foundational spend

Avg ('18-'22): CapEx $575M/yr, OM&A $365M/yr

Investments required to operate system, maintain reliability risk, and enable expected customer growth

- Continued efficiency and performance improvement through regular system maintenance / renewal
- E.g., Wood pole replacement, new load connections, vegetation management

Foundational spend level to be justified through risk analysis, benchmarks, and growth forecasts

Enhancement spend

Subject to change pending customer inputs

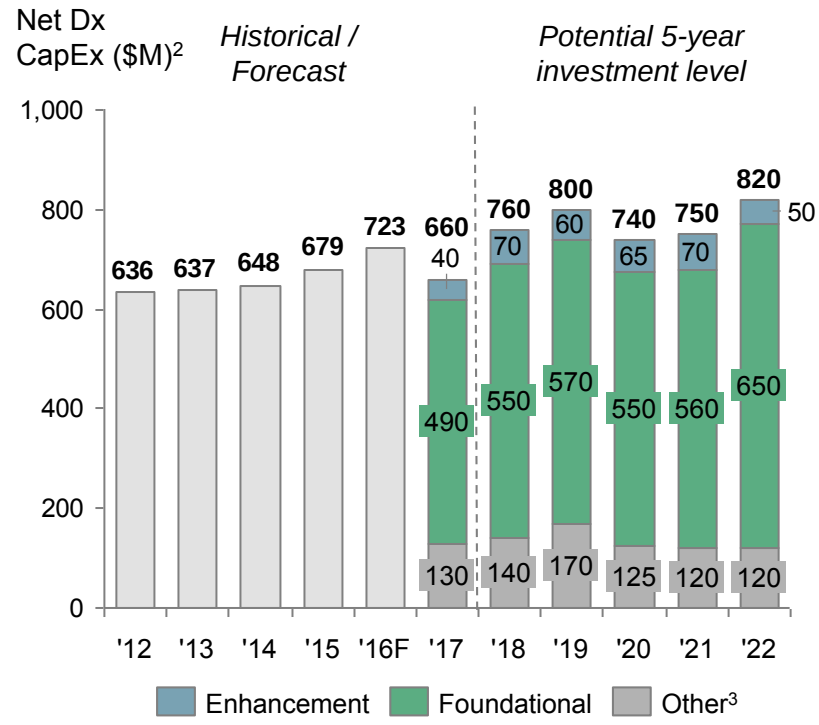
Avg. ('18-'22): CapEx $60M/yr, OM&A $20M/yr

Investments which drive performance improvements

- Targeted at outcomes most valued by customers
- Focused on most cost-effective opportunities
- E.g., Grid modernization, worst performing feeder improvement, optimized vegetation management

Enhancement spend level to be validated through customer consultations → potential to adjust based on customer willingness to pay

Potential Dx investment level by year



Preliminary estimates of impact

Reduce avg. number of interruptions[1] / year by **~10%**
Reduce avg. duration of interruptions[1] by **~8%**

Note: Total CapEx ('18-'22) is $3,840M; includes foundational, enhancement, and "other" spend ($650M), which includes "common", "operating", "customer", and non-wires budget items
1. Includes interruptions caused by loss of supply and excludes force majeure 2. 2016 forecast as of April 8th 2016; Source: Draft_2017-2022 Accomplishment_File_April 8
3. Other includes "Common," "Customer," and "Operating" budget items, non-wires spend (e.g., Security, IT,), and capitalized personnel costs (union share grants, ESOP, LTIP)

Planned engagement approach for each customer segment

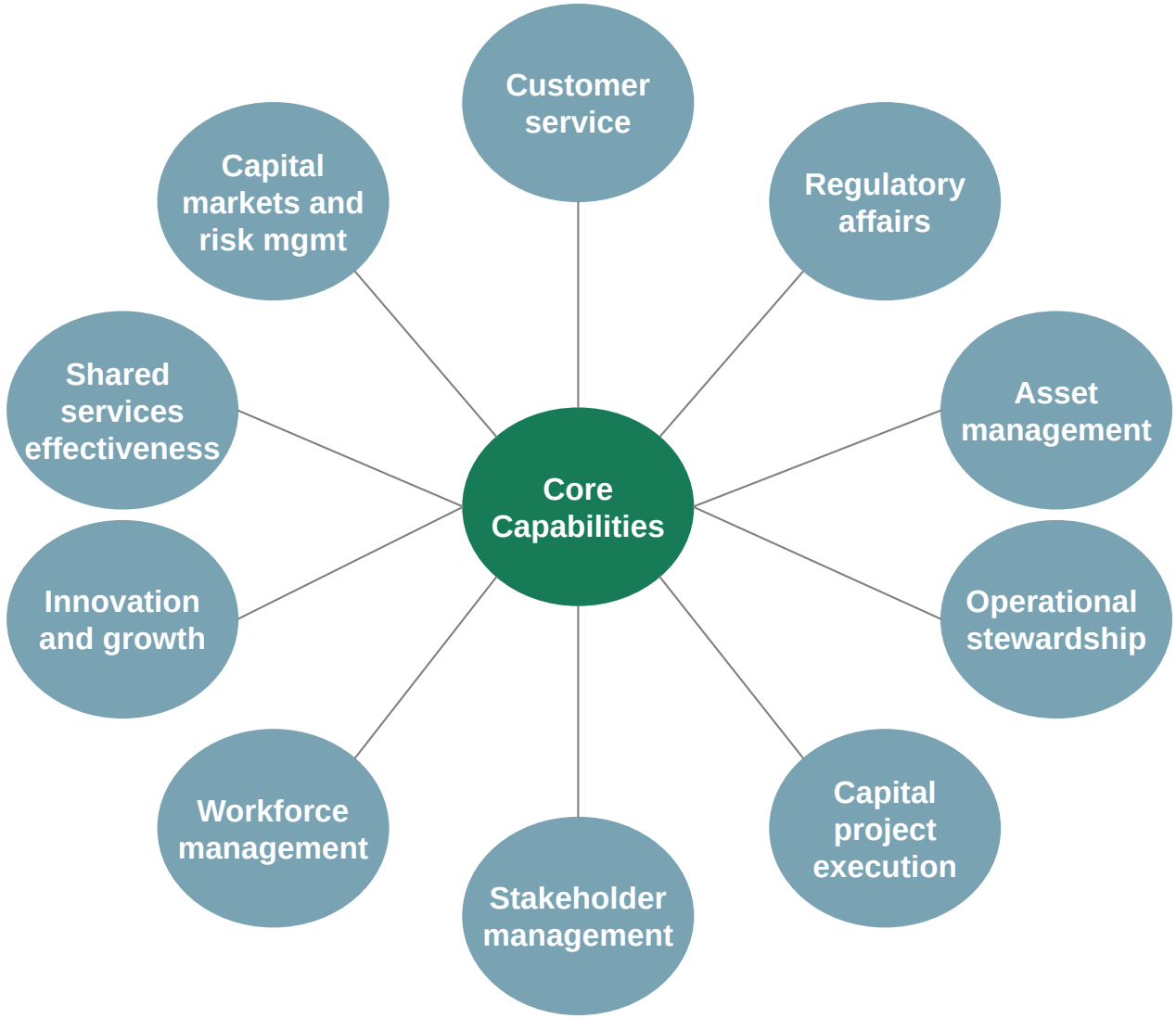
Customer segment

Residential & Small Business	Commercial & Industrial	Large Dx account	LDC[1]	First Nations and Métis
Online survey / workbook[2] • Educates customers on context, recent performance and investment options • Solicits input on customer expectations and priorities • Wave 1: Capture input from representative sample of residential customers • Wave 2: Open to all customers: Give all interested customers an opportunity to provide input over an extended timeframe	*Online survey / workbook will be open to all customers although expect limited participation from non-residential segments given other utility experiences*			
	Group workshop (commercial) • Format used successfully for Tx	**Group workshop** • All customers invited to nearest location	**Group workshop** • All customers invited to nearest location	**Town hall** • Organized by First Nations and Metis team
Focus group (residential) • Discussions with customers to test and refine understanding of survey themes	**Group workshop (industrial)** • Match commercial			
Focus group (small bus.) • Detailed input gathered with representation across key sub-segments	**One-on-ones** • As needed	**One-on-ones** • As needed and for remote customers	**One-on-ones** • As needed and for remote customers • In-person and webex	

Format | Online survey | Group | One-on-one

1. Includes only distribution-embedded LDCs 2. Intent is to create a single workbook targeted for residential customers but open to all participants, based on Toronto Hydro and Hydro Ottawa experiences

We identify 10 core capabilities for T&D operators



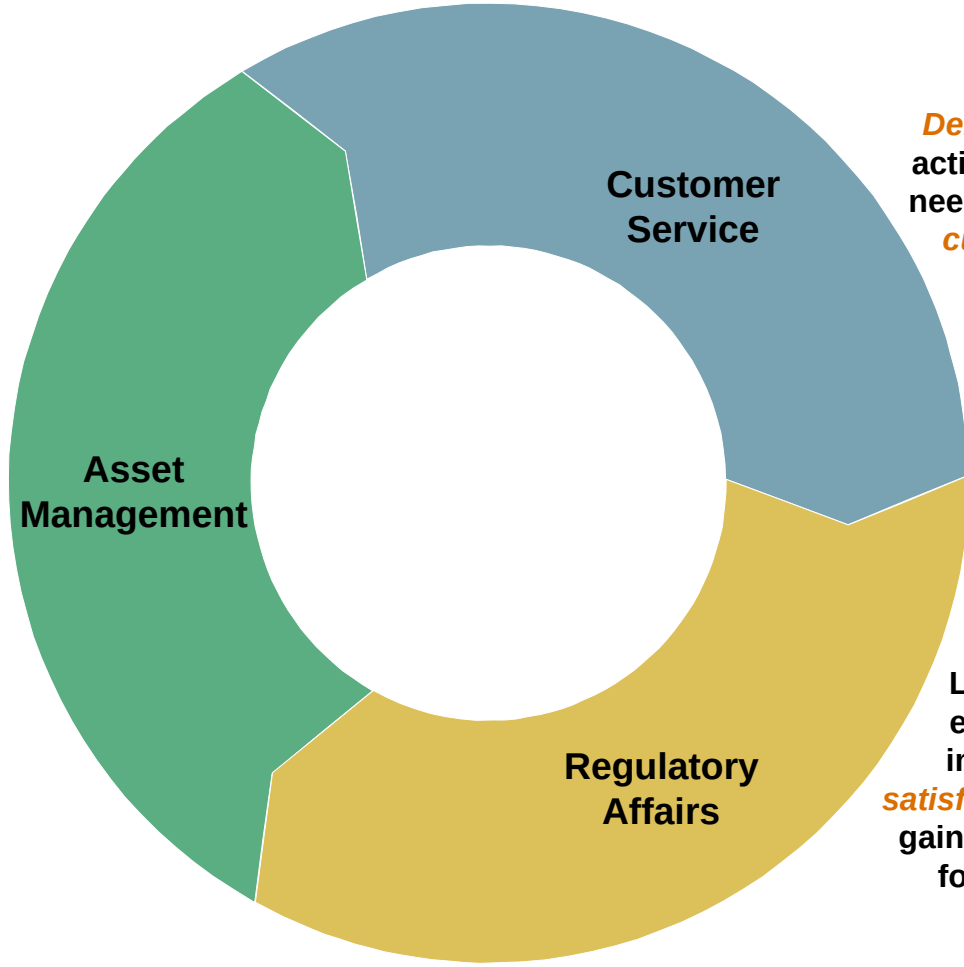
Several dimensions critical for each capability (I)

Core T&D Capability	High-level definition of capability
Customer service	**Customer satisfaction** • Deliver superior service to all customer segments • Gain trust of our customers **Customer experience** • Define vision for customer experience • Make "Voice of Customer" central to all decision making **Service Delivery** • Invest in programs and functionality to help customers manage energy usage • Utilize customer usage data to develop innovative products and services
Regulatory affairs	**Regulatory strategy** • Define clear regulatory strategy and roadmap • Effective regulatory relationship management • Proficiency in rate filing and case management
Asset management	**Capital allocation** • Optimize capital allocation across programs and asset classes **Investment program design** • Utilize asset condition, field info and analytics to inform investment strategy • Manage asset replacement cycles to balance risk-reliability tradeoffs
Operational stewardship	**Maintenance and Operations** • Operate the grid and execute the work program in "safety first" manner • Plan maintenance activities based on asset condition and reg requirements • Execute field activities in a cost efficient manner • Deploy advanced technologies to increase productivity of field crews **Emergency response** • Effectively triage and respond to emergencies based on criticality • Deploy modern tools and analytic capabilities to enable real time grid monitoring
Capital project execution	**Project delivery** • Utilize a lean process to progress projects from concept to implementation • Deliver capital projects safely, on time and on budget • Optimize mix of internal vs. outsourced projects

Several dimensions critical for each capability (II)

Core T&D Capability	High-level definition of capability
Stakeholder management	**Stakeholder management** • Engage legislative and government stakeholders to shape policy decisions • Gain confidence of stakeholders at local and regional level • Consult with and gather inputs from key groups and intervenors
Workforce management	**Talent management** • Manage talent to deliver skills against strategic business needs • Conduct strategic workforce planning for succession and knowledge transfer **Contractor management** • Develop effective approaches to manage contractors and unionized employees
Innovation and growth	**Innovation** • Set-up an innovation centre and effective approach to screen opportunities **Growth** • Develop expertise and experience in M&A and post merger integrations • Manage strategic partnerships and Joint-Ventures to support growth
Shared services effectiveness	**IT** • Streamline IT operations to enable and strengthen core business processes • Develop analytics capabilities to leverage customer and operational data **Vendor Management** • Define and document contracting strategy support for entire organization • Develop approach for Service level mgmt to govern contract performance **Program management** • Enhance program and project management skills across organization • Deploy effective performance management systems
Capital markets and risk management	**Risk management** • Manage risk to match investor risk appetite, adapt to changing circumstances **Capital markets management** • Fund business activities competitively vs. peers via low cost of capital • Facilitate advantaged access to diversified sources of capital • Manage relationships with investor community

3 of these capabilities work hand in hand and are critical to deliver value for our current business ...



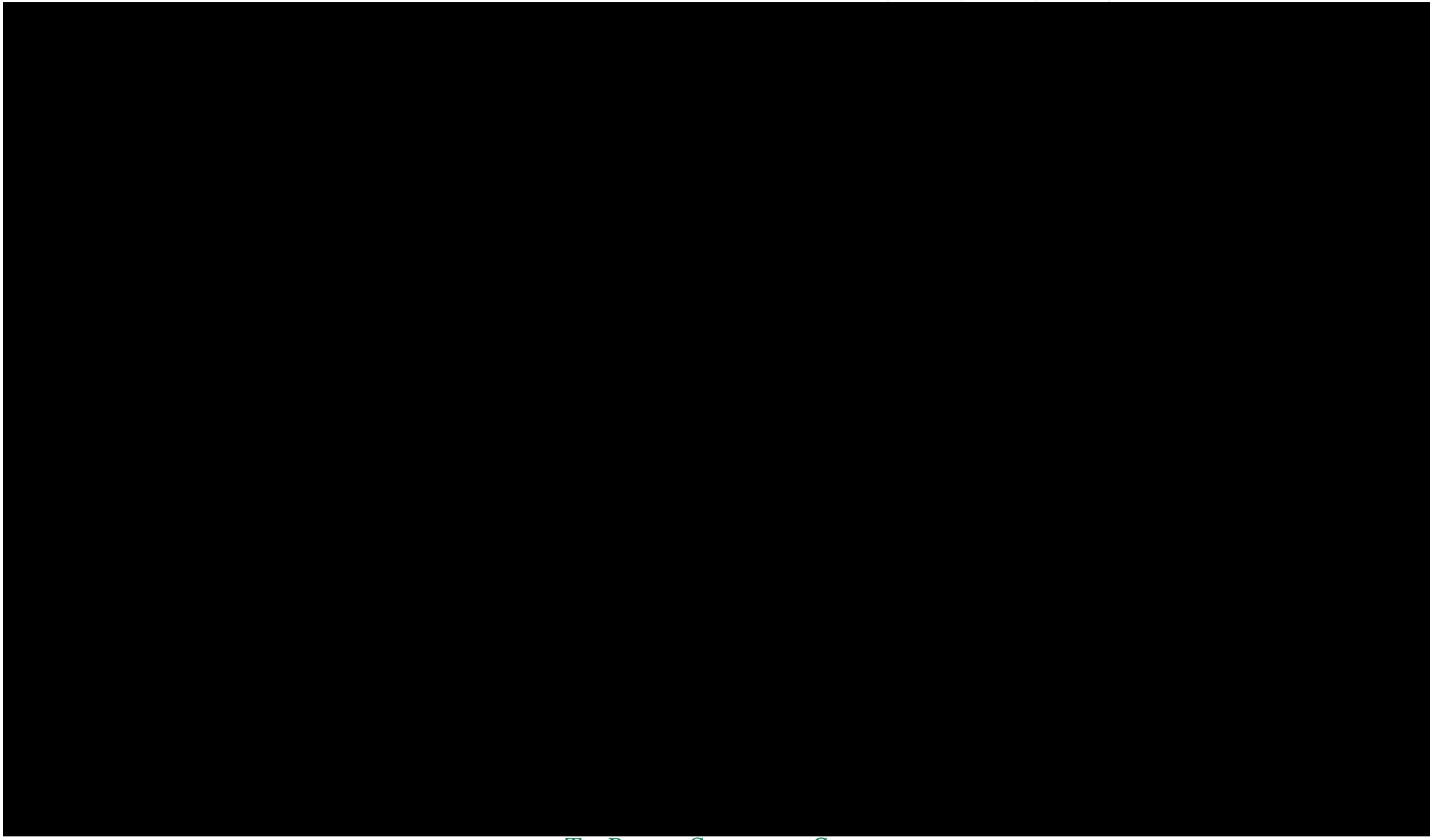
Delight **customers by pro-actively responding to their needs and making** ***"voice of customer"*** **central to all decision making**

Ground **our asset management program and investment plans in** ***direct customer outcomes*** **to deliver on** ***regulatory objectives***

Leverage ***reliability*** **enhancements and improved** ***customer satisfaction*** **as key levers to gain** ***regulatory approvals*** **for investment plans**

These are the capabilities we should invest in to drive best-in-class performance

... and will also be important drivers for our future growth



3 steps to conduct a holistic capabilities assessment

	Define framework *What are core capabilities to be a strong T&D operator*	**Assess capabilities** *How well is H1 placed against core capabilities*	**Address gaps** *How do we close performance gaps*
Key questions	• What capabilities are core? • Which ones should we invest in to deliver best-in-class performance? • Which ones will drive value for future growth	• Where is H1 today? • Where do we see the biggest gaps? • What improvement is required to deliver on strategy?	• How do we best address gaps in our capabilities • What concrete levers are needed to enhance each required capability?
Approach	• BCG experience and discussions with experts • Learnings from work completed to date • Industry trends and H1 context	• Structured rubric to evaluate current performance • Self assessments by each LoB	• Implementation plans by LoB using mix of levers – Org (structure, op model, process, policy) – People (train, hire, etc) – Tools – Academy

Program summary: initiative pipeline

		Program execution objective	Initiatives
Service delivery	1 Regulatory	• Successfully execute Tx cost of service (May '16) and Dx custom incentive rate mechanism (May '17) filings	• Tx filing • Dx filing • Dx customer consultation
	2 Asset management	• Demonstrate outcomes-based planning and measurement ahead of Dx filing in May '17	• Integrated investment planning process (including data integrity and asset analytics)
	3 Capital delivery	• Transform stage gate process and delivery model to predictably and efficiently execute work program	• Execution efficiency (project controls, field) • Contract management and quality control • Stage gate process and advanced readiness • Work program KPI[2] s and benchmarks
	4 Customer service	• Execute priority customer initiatives to progressively improve satisfaction across segments	• Two key near-term R&SB[1] initiatives: – E-Billing, My account • Plus 10 other initiatives across segments
Efficiency	5 Procurement	• Execute waves of sourcing events to deliver impact starting in '16; enable org. with new capabilities	• Four waves covering 18 categories • Wave 1: Staff augmentation, general hardware, transformers, IT software and professional services
	6 O&M efficiency	• Execute O&M efficiency initiatives to deliver impact starting in '17	• 7 initiatives including: labour mix optimization, Dx brush outsourcing, preventive maintenance
	7 SG&A effectiveness	• Execute near-term initiatives in '16, prepare full cascaded org and process redesign by '17	• Action plans by lines of business for realization of near term SG&A[3] opportunities
	8 Labour & Outsourcing	• Execute HR processes and controls, and Labour and Inergi contract strategies	• Inergi strategy • Labour strategy

1. RS&B is residential and small businesses customer segment 2. KPI is key performance indicator 3. SG&A is sales, general and administration

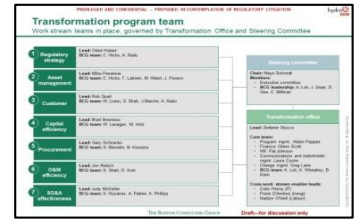
Rigorous program management process in place

Clear program structure in place
- Dedicated TMO resources
- Defined governance structure

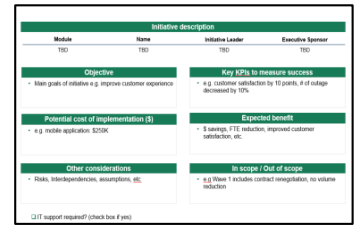
Detailed execution planning
- Clear milestone plans
- Measurable KPIs and targets

Rigorous tracking and monitoring
- Status of individual milestones
- Management of risks and interdependencies

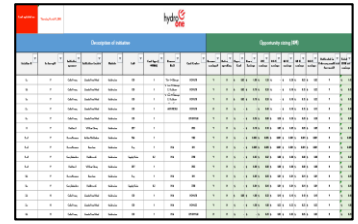
Clear information flow and escalation paths
- Defined reporting cadence
- Formal issue resolution and change processes



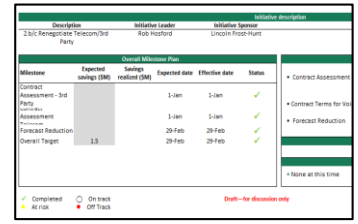
Team structure



Initiative charter



Tracker



Status report

Future Board meetings to include Good to Great program status summary with initiative impact quantified

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