DISTRIBUTION SYSTEM PLAN OVERVIEW

1. INTRODUCTION

Hydro Ottawa's Distribution System Plan (DSP) provides a comprehensive overview of how the utility manages its electricity distribution assets and plans for future investments to deliver safe, reliable, and cost-effective service to customers over the 2026-2030 period. The DSP is included in this Application as Schedules 2-5-1 through 2-5-9, and encompasses the following key areas:

- **Coordinated Planning with Third Parties:** Details how Hydro Ottawa coordinates infrastructure planning with customers, transmitters, other distributors, the IESO and other third parties where appropriate.
- **Performance Reporting:** Outlines how Hydro Ottawa tracks key performance indicators to monitor the effectiveness of its asset management practices and ensure performance targets are met.
- **Asset Management Strategy:** Details how Hydro Ottawa identifies, assesses, and manages risks and opportunities associated with its infrastructure. This includes the utility's approach to maintenance, refurbishment and equipment replacement.
- **Capital Expenditure Plan:** Details Hydro Ottawa's planned investments in the distribution system, which includes upgrades, expansions, and new technologies aimed at improving reliability, safety, and accommodating load growth.
- **Material Investments:** Details capital expenditure projects and programs that meet Hydro Ottawa's materiality threshold. Material investments are grouped by the four investment categories identified by the OEB, namely System Access, System Renewal, System Service and General Plant.

Hydro Ottawa's 2026-2030 DSP is a comprehensive roadmap for managing and investing in the electricity distribution system. It outlines a systematic approach used to collect and analyze

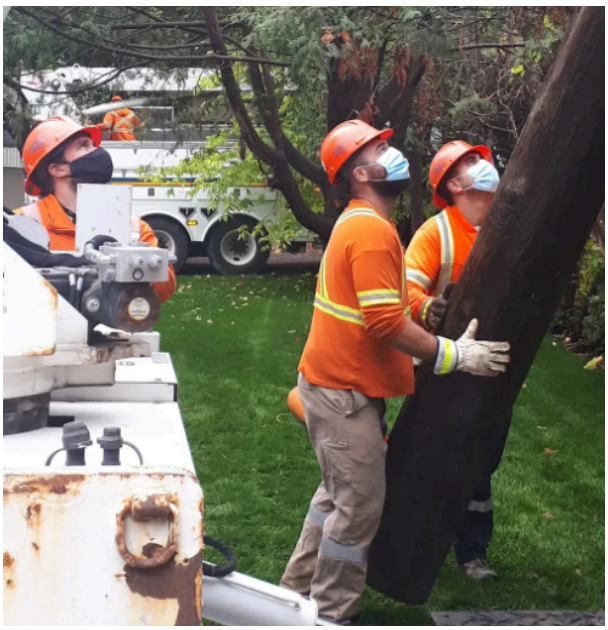
information on physical assets, current and future system operating conditions, and Hydro Ottawa's business and customer service goals. This thorough assessment allows Hydro Ottawa to strategically prioritize and optimize expenditures related to system upgrades, maintenance, and overall operation. The DSP ensures that Hydro Ottawa's investments are aligned with its overarching goals and the current and future needs of customers and the electricity grid.

Hydro Ottawa continuously maintains and improves its robust asset management practices. The ongoing evaluation and adjustment of the processes and information informing the DSP ensure alignment with evolving industry best practices, regulatory changes, and emerging technologies. This proactive asset management approach supports the achievement of the OEB's four RRF performance outcomes: Customer Focus, Operational Effectiveness, Public Policy Responsiveness, and Financial Performance, contributing to the safe, reliable, and sustainable electricity service essential for community growth and economic development.

The DSP was developed in alignment with the OEB's *Chapter 5 Filing Requirements for Electricity Distribution Rate Applications - 2025 Edition for 2026 Rate Applications*, dated December 9, 2024, as well as with the *Handbook for Utility Rate Applications* issued by the OEB in 2016.

1.1. CONTEXT

Between 2021 and 2024, Hydro Ottawa faced an unprecedented series of unforeseen challenges that tested its resilience. These challenges included the COVID-19 pandemic and its associated supply chain disruptions and inflationary pressures; a historic storm (the 2022 Derecho) that caused extensive damage to the electricity grid; eleven other major weather events requiring emergency response; and a 84-day strike in 2023. Despite these obstacles, Hydro Ottawa's robust systems and processes, coupled with its agile approach to adapting priorities and programs, enabled the utility to effectively assess and navigate these extraordinary circumstances. This resilience and adaptability allowed for continued progress towards the goals outlined in the 2021-2025 DSP, underscoring Hydro Ottawa's commitment to operational continuity and achieving its long-term strategic objectives.

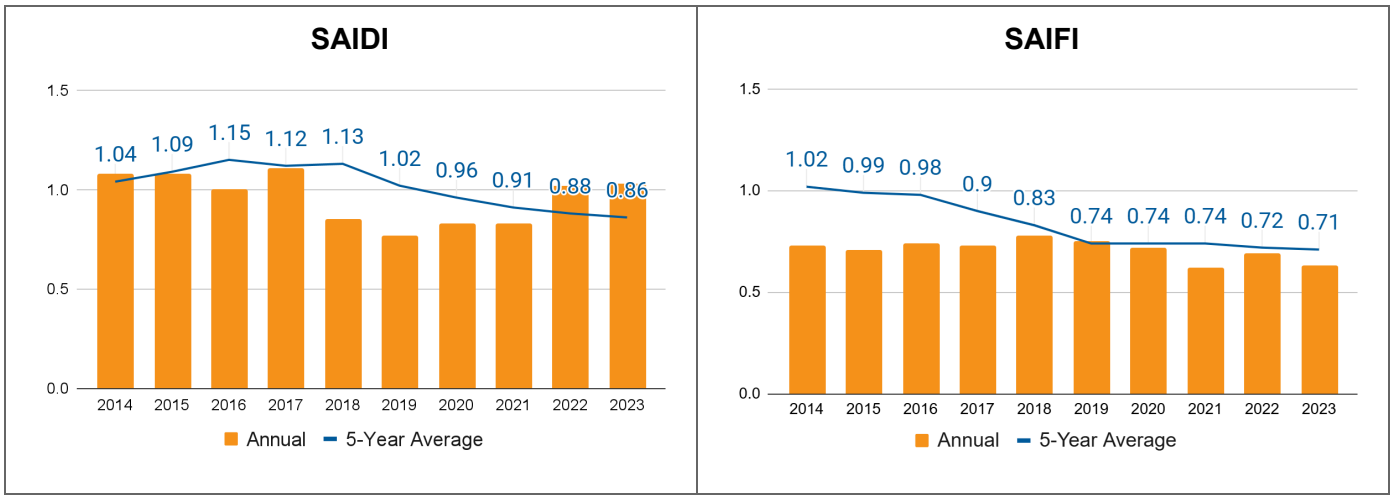


Hydro Ottawa crew during COVID-19

Hydro Ottawa's 2021-2025 DSP, as filed in its 2021-2025 Custom Incentive Rate-Setting (Custom IR) Application,[1] focused on expanding system capacity and renewing aging infrastructure. This included strategic investments to increase system capacity by 160MVA (Cambrian-100MVA, Limebank-33MVA and Uplands-27MVA) through new station construction and upgrades. The distribution capacity upgrade program also significantly unlocked new distribution line capacity. Targeted infrastructure renewal projects supported the overall improvement to system reliability as evidenced by the reduction to the 5-year average SAIDI and SAIFI performance excluding Loss of Supply and Major Event Days, shown in Figure 1.

[1] Hydro Ottawa Limited, *2021-2025 Custom Incentive Rate-Setting Distribution Rate Application*, EB-2019-0261 (February 10, 2020).

Figure 1 - SAIDI & SAIFI - Annual and 5-Year Average (Excluding Loss of Supply and Major Event Days)



Restoration work after the 2022 Derecho

Hydro Ottawa's 2026-2030 DSP outlines a comprehensive investment strategy that aligns with customer expectations and addresses the evolving needs of Hydro Ottawa's electricity grid. The updated 2026-2030 plan incorporates key improvements, including enhanced asset management processes, expanded grid modernization and resilience planning, updated system capacity assessments, and refined long-term forecasting based on customer feedback and system needs.

Hydro Ottawa has identified four strategic investment priorities for its 2026-2030 DSP. These priorities were determined through a comprehensive analysis that considered customer preferences identified through engagement activities, system needs, historical system performance, and trends identified through the business planning process.[2] The four Investment Priorities are:

1. **Growth & Electrification - Powering the Growing Community:** Focusing on expanding grid capacity to serve a growing community and ensure a reliable, resilient electricity system capable of meeting increasing demand driven by new customer connections and distributed energy resources (DERs).
2. **Renewing Deteriorating Infrastructure:** Focusing on mitigating reliability risk by strategically upgrading or replacing deteriorating and critical infrastructure, prioritizing assets with the greatest impact on system reliability and safety based on condition assessments.
3. **Grid Modernization - Enabling the Energy Transition:** Focusing on modernizing the grid through strategic technology adoption and infrastructure upgrades to enable the energy transition, facilitate customer participation, and optimize DER integration, thereby enhancing grid capabilities and efficiency.
4. **Enhancing Grid Resilience:** Focusing on enhancing grid resilience by proactively upgrading infrastructure and implementing measures to protect against increasingly frequent and intense severe weather events and cyber threats.

[2] For further details on Hydro Ottawa's business planning process, see Schedule 1-2-3 - Business Plan.

These four investment priorities address Hydro Ottawa's key distribution system planning challenges and opportunities, supported by two foundational focuses: Managing Rising Costs and Investing in the Workforce. In all aspects of planning, execution and performance monitoring, Hydro Ottawa emphasizes maintaining affordability for customers while ensuring a reliable and resilient electricity system to meet growing demand. To accomplish the priorities set out in this plan, Hydro Ottawa recognizes the importance of workforce development and safety to ensure a skilled and secure energy future.

1.2. 2026-2030 CAPITAL EXPENDITURE PLAN

Hydro Ottawa's planned capital investments for 2026-2030 represent a significant increase compared to the previous five-year period, reflecting the substantial challenge of modernizing and expanding the grid to meet the evolving needs of the community. The scale of these investments underscores Hydro Ottawa's commitment to providing safe and reliable electricity to the City of Ottawa and Municipality of Casselman while ensuring resilience in the face of climate change.

Figure 2 below provides a visual representation of 2026-2030 planned expenditures by Investment Priority.

Clearing damaged equipment after the May 2022 Derecho

Figure 2 - 2026-2030 Capital Expenditure by Investment Priority

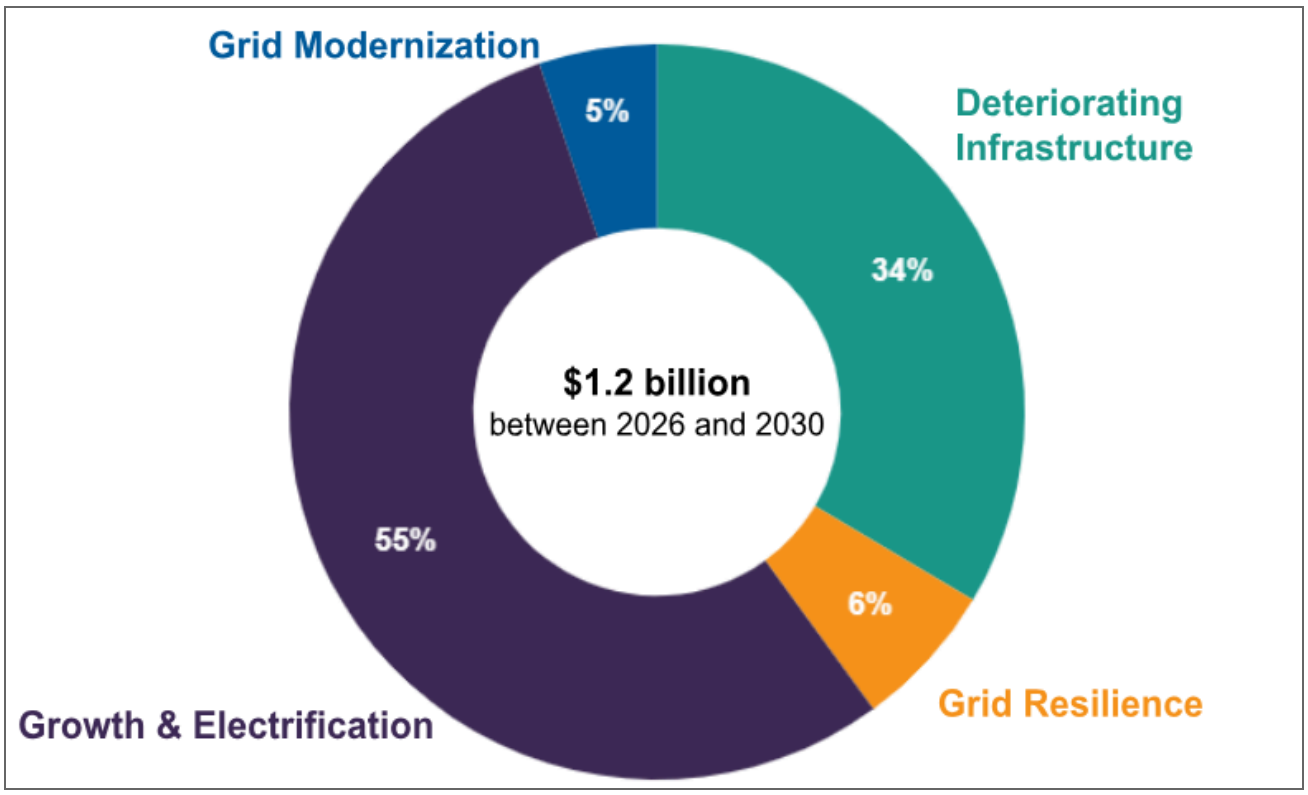


Table 1 below outlines the variance between Hydro Ottawa's 2021-2025 and 2026-2030 planned investments by investment category.

Table 1 - Capital Expenditure Variance by Investment Category - 2021-2025 DSP vs. 2026-2030 DSP ($'000 000s)

Investment Category	Historical / Bridge Years	Test Years	Variance
	2021-2025	2026-2030	
System Access	$ 293	$ 369	$ 77
System Renewal	$ 232	$ 432	$ 199
System Service	$ 161	$ 473	$ 312
General Plant	$ 76	$ 134	$ 57
Total Capital Expenditures	**$ 762**	**$ 1,409**	**$ 646**
Capital Contributions	$ (162)	$ (213)	$ (51)
Net Capital Expenditures	**$ 600**	**$ 1,195**	**$ 595**

Hydro Ottawa's 2026-2030 DSP strikes a balance between customer priorities and system needs, representing the minimum investment required to ensure a reliable, resilient and sustainable electricity grid. Through strategic planning and prudent investment aligned with customer priorities, Hydro Ottawa is committed to meeting the evolving energy needs of the community while ensuring continued safe, reliable and affordable electricity for its customers.

2. KEY ELEMENTS OF THE DSP

This section details the key elements included within the DSP. It outlines the essential components and considerations that shape the DSP's development and implementation, ensuring a robust and effective approach to managing the distribution system. Key elements of the 2026-2030 DSP include details of the updates to the DSP since filed with the 2021-2025 Rate Application, customer priorities, the challenges and trends faced by the utility, and resulting focus areas that inform investment plans.

2.1. CHANGES IN THE DSP

The following sections detail the key changes that impact the inputs into the DSP since the previous DSP submission in the 2021-2025 rate application.

2.1.1. Asset Management Process

To ensure a reliable, resilient, and customer-centric electricity grid, Hydro Ottawa has made significant enhancements to its asset management process. These improvements, centered on predictive analysis, refined testing, inspection, and maintenance, and a more robust ACA framework, reflect a forward-thinking approach that strategically aligns asset management practices with the company's broader objectives and customer needs. Hydro Ottawa has also continued to demonstrate a commitment to advanced asset management, evidenced by initially achieving ISO 55001 Asset Management Standard certification in 2020 and recertified in 2023. This certification highlights the maturity of the asset management system, which includes enhancements like a comprehensive risk register and targeted mitigation plans. These practices support strategic asset decision-making, balancing cost, risk, and performance to meet customer expectations and regulatory requirements.

A key enhancement is the incorporation of predictive analysis into system renewal investment planning. This involves using the Copperleaf Asset Predictive Analytics (PA) module to model distribution assets and forecast system renewal needs. This predictive capability allows Hydro Ottawa to move towards a more proactive approach by predicting the effects of asset degradation over time and optimizing replacement schedules. The PA module analyzes asset data, including condition and risk information, to forecast the impact of asset degradation and inform investment decisions. This analysis helps determine the optimal timing for interventions like replacements or upgrades, considering factors such as risk mitigation and cost-effectiveness. By leveraging PA, Hydro Ottawa aims to make higher-value investment decisions, ultimately improving the management of its assets.

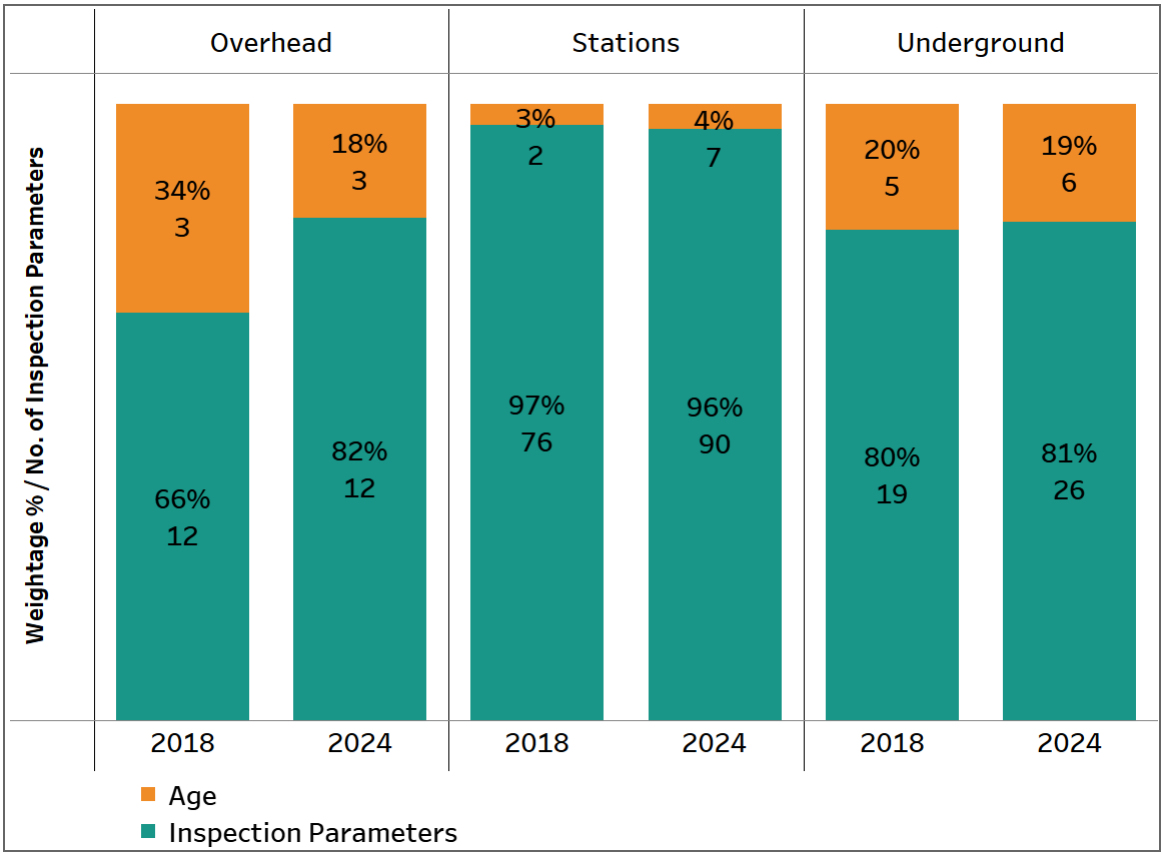
In addition to PA, Hydro Ottawa has also significantly refined its testing, inspection, and maintenance programs. These refinements aim to capture more detailed data on asset conditions. For instance, the overhead asset inspection program now captures information on pole-mounted transformers, switches, and related hardware at every pole inspected, rather than only when an issue is found. This provides a more comprehensive understanding of the health of these assets. For underground infrastructure, Hydro Ottawa has enhanced its cable testing methodology, incorporating advanced testing methods such as Very Low Frequency Tan-Delta, Partial Discharge, and Time Domain Reflectometry. These advanced techniques provide a deeper understanding of the condition of cable components, facilitating more targeted remediation efforts. This improved data collection allows for more precise condition assessments to inform investment planning.

Hydro Ottawa has also enhanced its Asset Condition Assessment (ACA) framework to provide a more accurate and comprehensive evaluation of asset health. A key improvement involves incorporating additional condition parameters derived from testing, inspection, and maintenance programs into the calculation of asset health index scores. This integration of diverse data sources results in a more holistic view of an asset's condition.

Hydro Ottawa's Asset Condition Assessment framework has undergone significant evolution between 2018 and 2024, as evidenced by the data presented in Figure 3 below. A notable shift from age-based to condition-based asset evaluation is demonstrated across various asset categories. For overhead assets, the reliance on age was substantially reduced due to improvements to the condition assessment framework for poles, alongside moderate improvements to condition data quality from Overhead (OH) switches and transformers through ground-based inspections. Station assets saw a significant increase in the number of parameters utilized, reflecting the integration of previously underutilized inspection data, with minimal reliance on age. Underground assets experienced an increase in assessment parameters, though the reliance on age remains comparatively higher. However, Hydro Ottawa has implemented ongoing improvements to the cable testing and vault inspection programs,

demonstrating a commitment to enhancing condition data accuracy. Hydro Ottawa's strategic enhancements to the ACA framework underscore a commitment to proactive maintenance and risk management, aligning with industry best practices and emphasizing the importance of real-time, accurate condition data for informed decision-making.

Figure 3 - Hydro Ottawa's ACA Framework Enhancements



More information on Hydro Ottawa's ACA process can be found in Section 5.1.2.1 of Schedule 2-5-4 - Asset Management Process.

These improvements collectively contribute to a more data-driven and risk-based approach to asset management, enabling Hydro Ottawa to optimize investments, enhance reliability, and

ensure the long-term sustainability of its electricity grid. More details on the improvements that Hydro Ottawa made to its Asset Management Process are provided in Section 4.4 of Schedule 2-5-4 - Asset Management Process.

2.1.2. Grid Modernization

Grid Modernization Strategy & Roadmap Creation

Recognizing the challenges and opportunities of the evolving energy landscape, Hydro Ottawa engaged Hatch in 2022 to develop a comprehensive Grid Modernization Strategy and Roadmap. This initiative prioritized enhancing grid reliability, flexibility, resilience, and sustainability through a methodical, two-phased approach.

The first phase began with establishing a baseline maturity level by completing an assessment of Hydro Ottawa's existing grid infrastructure and operational capabilities. This evaluation was then compared against a desired future state vision across various time horizons, which revealed key areas for improvement. The second phase of the project used these key findings to develop the Grid Modernization Strategy, also drawing upon existing corporate directives, operational plans, ongoing initiatives, and industry best practices to ensure alignment and efficacy. This structured approach was designed to ensure that Hydro Ottawa's grid modernization efforts are strategically aligned, operationally sound, and effectively address the evolving demands of the energy landscape.

The Grid Modernization Strategy translates the corporate priorities into actionable objectives, which are then translated into investment plans by informing the objectives of both the Asset Management and Digital strategies. For more information, please see Section 3.4 of Schedule 2-5-4 - Asset Management Process. This ensures coordinated investment and avoids duplicated effort or inefficiencies that could arise from shared asset accountabilities. Specifically, it allows for sole oversight and coordination of distribution assets under the Asset Management framework and information technology assets under the Digital framework.

The Grid Modernization Roadmap operationalizes the Grid Modernization Objectives in conjunction with the Capital Expenditure plan. The Strategy defines the needs, which are then translated through the Asset Management and Digital Strategies into concrete investment plans. These plans are consolidated within the capital expenditure planning process and monitored through the Grid Modernization Roadmap to ensure the Grid Modernization Objectives are achieved.

April 2023 Ice Storm

More details on the Grid Modernization Strategy are available in Section 3.4.2 of Schedule 2-5-4 - Asset Management Process.

2.1.3. Resilience

As part of Hydro Ottawa's ongoing commitment to grid resilience and service reliability, a 2023 Climate Study Reaffirmation and the Resilience Investment Business Case assessments were undertaken. See Attachment 2-5-4(B) - Addendum Report to Distribution System Climate Vulnerability Risk Assessment and Climate Change Adaptation Plan and Attachment 2-5-4(E) - Resilience Investment Business Case Report, respectively. These assessments support planning to enhance grid resilience and prioritize system reliability in the face of increasingly frequent severe weather events and growing dependence on stable power. The Climate Study Reaffirmation reconfirmed the necessity of continued adaptation and mitigation strategies, while the Resilience Investment Business Case Report offered a data-driven approach to identify and prioritize areas for strategic undergrounding of overhead lines.

Hydro Ottawa's resilience assessment aligns with the OEB's new and ongoing Vulnerability Assessment and System Hardening (VASH) framework, which intends to set out how distributors should incorporate climate resilience into their asset and investment planning to mitigate climate-related vulnerabilities. Hydro Ottawa uses an asset-based approach, leveraging climate forecast data from models developed by Burns & McDonnell's subsidiary 1898 & Co. by quantitatively comparing asset threshold criteria with the probability of extreme weather events during the project evaluation stage, Hydro Ottawa ensures investments enhance climate resilience within the distribution system.

Assessing Damage after the 2022 Derecho

Climate Study Reaffirmation

In 2023, Hydro Ottawa commissioned Stantec Consulting Ltd. to conduct a study to update the 2019 climate risk assessment,[3] incorporating the latest climate projection data and factoring in recent extreme weather events, including the 2022 Derecho storm. This comprehensive assessment utilized updated climate models and regional projections to refine the probability estimations of extreme weather events. Notably, two new wind speed thresholds, exceeding 130 km/h and 180 km/h, were introduced based on updated criteria and empirical observations from the 2022 Derecho storm. This led to a reassessment of potential high-wind impacts on infrastructure, resulting in elevated consequence ratings.

Despite the increased risk scores associated with severe wind events, the overall risk level for the majority of Hydro Ottawa's infrastructure remains unchanged. This finding indicates that the adaptation and mitigation measures outlined in the 2019 plan retain their efficacy. Consequently, the primary areas of vulnerability within Hydro Ottawa's system, namely overhead assets, remain consistent with previous assessments.

As a result, Hydro Ottawa commissioned a further study to explore strategic opportunities for undergrounding vulnerable sections of overhead lines to enhance the overall resilience of the electricity distribution system. Further details on the study's findings can be found in Section 4.4.8 of Schedule 2-5-4 - Asset Management Process.

Resilience Investment Business Case

Hydro Ottawa engaged 1898 & Co. to conduct a comprehensive assessment and develop a Resilience Investment Business Case for strategically burying vulnerable sections of the overhead distribution system. Refer to Attachment 2-5-4(E) - Resilience Investment Business Case Report. The report emphasizes the growing importance of grid resilience, highlighting the

[3] See Hydro Ottawa Limited, *2021-2025 Custom Incentive Rate-Setting Distribution Rate Application*, EB-2019-0261 (February 10, 2020), Attachment 2-5-4(B): Addendum Report to Distribution System Climate Vulnerability Risk Assessment and Climate Change Adaptation Plan.

increasing frequency of severe weather events and the community's dependence on reliable service. Employing a data-driven model, the study identified and prioritized resilience investments, focusing on the strategic conversion of overhead lines to underground systems.

Hydro Ottawa integrated the study's findings with empirical evidence from recent storm events to proactively incorporate resilience investments into the capital plan. The resulting Distribution System Resilience program encompasses a multi-faceted approach, including:

- Strategic undergrounding of vulnerable overhead lines;
- Reinforcement of existing overhead infrastructure;
- Feeder reconfiguration;
- Undergrounding of station egress points; and
- Relocation of lines.

April 2023 Ice Storm

These investments are designed to mitigate system disruptions caused by severe weather events, ultimately minimizing restoration costs, customer outage durations, and overall system recovery time.

A detailed description of the Distribution System Resilience program is provided in Section 3 of Schedule 2-5-8 - System Service Investments.

2.1.4. System Planning

Decarbonization Study

Decarbonization targets set out by federal and municipal bodies are increasingly impacting Hydro Ottawa's distribution system. Traditional forecasting methods which primarily rely on historical consumption patterns and projected growth based on known and observable trends fail to capture the uncertainties introduced by decarbonization goals and the resulting electrification of building, water heating and transportation. Recognizing this gap, the IESO created a Decarbonization Sub-Working Group to support studying the impacts of electrification on regional forecasts. In support of this sub-working group, Hydro Ottawa commissioned Black & Veatch in 2023 to conduct a Decarbonization Study, included in this Application as Attachment 2-5-4(F) - Decarbonization Study. This study evaluates the potential impacts of societal electrification trends on Hydro Ottawa's distribution system out to 2050 with a scenario-based approach. Five scenarios with varying assumptions of decarbonization initiatives on the distribution system are assessed in the Study with refinement from the Decarbonization Sub-Working Group. More details about this group are provided in Section 4 of Schedule 2-5-2 - Coordinated Planning with Third Parties.

Hydro Ottawa is utilizing the Decarbonization Study's Reference Scenario forecast to inform its Integrated Regional Resource Plan (IRRP) forecast. This alignment is crucial for long-term regional transmission planning, given the extended lead times of transmission grid investments. Recognizing the uncertainties associated with government policies and technological advancements, Hydro Ottawa leveraged the forecast derived from the Decarbonization Study's

Reference scenario to augment its own investment decisions. Hydro Ottawa's 2026-2030 capital expenditure plans balance investment needs with affordability by prioritizing a mix of wire and Non-Wire Solutions (NWSs). Investments are focused on already constrained regions and areas with immediate, confirmed, and committed load requirements necessary to meet customer service obligations. These infrastructure investments were sized to accommodate demand growth projections in the IRRP forecast through 2035 to ensure efficient capital deployment. The most notable examples of projects, programs or updates that were informed by the decarbonization study include (a) the decision to increase the capacity of the Hydro Road, Cyrville, Kanata North and Greenbank stations to align with Hydro Ottawa's standard 100MVA design, (b) the decision to convert voltage levels to 13kV when replacing deteriorated 4kV station assets to support intensification and other known large projects such as the New Ottawa Hospital and (c) the reaffirmation of Hydro Ottawa's residential transformer sizing guideline. This strategic approach balances immediate operational demands with long-term sustainability goals thereby optimizing capital allocation and asset utilization. By leveraging decarbonization projections to inform the mid to long term outlook (beyond 2030) and aligning investments with both near-term (until 2030) and future needs, Hydro Ottawa ensures the development of a reliable, resilient, and cost-effective power grid capable of supporting the transition to a sustainable, net-zero energy future.

Further details on the Decarbonization Study are available in Section 9 of Schedule 2-5-4 - Asset Management Process, and Attachment 2-5-4(F) - Decarbonization Study.

2.2. CUSTOMER PRIORITIES

Hydro Ottawa prioritizes ongoing customer engagement as a core component of its business operations. This commitment is reflected in various initiatives and channels designed to gather customer feedback, understand evolving needs, and ensure a customer-centric approach to service delivery. For details on Hydro Ottawa's ongoing customer engagement initiatives, please see Schedule 1-4-1 - Customer Engagement Ongoing. Hydro Ottawa's 2026-2030 DSP was developed with extensive and targeted customer input gathered in two phases in collaboration

with Innovative Research Group Inc, a national consulting firm with extensive expertise in public opinion research and specifically in the context of energy policy and utility operations. Phase I focused on strategy, and sought input aimed at understanding customer needs and preferences. This was distilled into priorities and principles that Hydro Ottawa planners and subject matter experts were guided by in developing the draft distribution system and business plans (as reflected in the "Needs and Preferences Planning Placemat" in Appendix.08 of the consolidated Customer Engagement Report found in Attachment 1-4-2(A) - Customer Engagement Report on Hydro Ottawa's 2026-2030 Rate Application). In Phase II, the Customer Engagement process focused on gathering customer feedback on Hydro Ottawa's proposed investment plan. This was achieved through an online survey that presented the plan's four key categories: Growth and Electrification, Aging Infrastructure, Grid Modernization, and Grid Resilience. The survey aimed to gauge customer investment preferences across these categories and assess the overall level of support for the proposed plan by outlining priority investment options with varying paces and cost impacts, enabling them to directly influence the final plan by providing feedback on their preferred balance of cost, timing, and system outcomes (reliability, resilience, renewable integration).

Key Findings:

- **Strong Support for the Plan:** The results demonstrated strong overall support for the plan, particularly among commercial customers who recognize the value of a reliable and modern electricity grid. An average of 87% of customers, across all rate classes, gave Hydro Ottawa social permission to proceed with its draft plan. These customers provided social permission by indicating either:
    - 16% think Hydro Ottawa should accelerate spending beyond the level in the draft plan to deliver better system outcomes.
    - 28% support the proposed rate increase that is reflected in the draft plan, or
    - 43% feel that the proposed rate increase in the draft plan is necessary, even though they don't like the proposed rate increase.

- **Acceptance of Necessary Increases:** While many customers expressed a general dislike for bill increases, a majority within each customer category acknowledged the necessity of these increases to fund critical system investments.
- **Desire for Accelerated Investment:** A significant minority of respondents favored an even faster pace of investment, indicating a willingness to absorb higher near-term costs to expedite system upgrades and realize their associated benefits sooner.

A summary of Hydro Ottawa's customer engagement on the 2026-2030 Application priorities are summarized below, with fulsome details available in Schedule 1-4-2 - Customer Engagement on the 2026-2030 Application.

Phase I

Phase I took place from February to May 2024 and focused on understanding customer needs through focus groups and interviews. This comprehensive approach ensured that diverse customer perspectives were gathered and analyzed to shape Hydro Ottawa's investment plan from its early stages.

Engagement results and key findings from Phase I, in relation to satisfaction and general priorities, include:

- Customer satisfaction has improved relative to 2019 for residential and small business customers.
- Residential and small business customers prioritize very similar general outcomes, with both ranking "maintaining reliable electricity service" as their top priority.
- Commercial and industrial and key account customers have more distinctive prioritizations, with reliable service being important, but outranked by the related and more specific objective of hardening the grid to withstand severe weather. Capacity to meet future demand was also a high-ranked priority of these customer classes.

Phase II

Phase II was conducted from September to October 2024 through an online survey to gauge customer investment preferences across four investment priorities that were identified throughout Phase I. These four priorities are: Growth and Electrification, Aging Infrastructure, Grid Modernization, and Grid Resilience. The majority of customers across all categories supported the proposed plan, with many even encouraging Hydro Ottawa to exceed it. Feedback was obtained from 21,8399 customers during this phase. Table 2 outlines the identified priority rankings by customer class.

Table 2 - Customer Priority Ranking by Category[4]

Investment Priority	Customer Category		
	Residential	Small Business	Commercial & Industrial and Key Account
Grid Resilience	1	1	2[5]
Grid Modernization	2	2	2
Aging Infrastructure (replacing equipment)	3	3	1
Metering Renewal	4	5	5
Growth and Electrification	5	4	4

In Phase II customers reviewed a draft plan outlining the four identified priority investment categories, presenting various options with different paces and cost implications. This allowed customers to directly influence the final plan by providing feedback on their preferences regarding the balance between cost, timing, and system outcomes (i.e. reliability, resilience, renewable integration).

2.3. INVESTMENT PRIORITIES

Through business planning and asset management processes, Hydro Ottawa has identified four

[4] Customer priority ranking was determined by adding support for Accelerated Pace and Draft Plan
[5] Grid Resilience and Grid Modernization received the same ranking

strategic Investment Priorities in this DSP. These priorities have been validated through customer engagement, ensuring that investments address the most pressing needs of both the community and the electricity grid, and are aligned with customer's top concerns: resilience against severe weather, reliability, reasonable rates, and grid capacity expansion. By focusing on these key areas, Hydro Ottawa aims to create a resilient and sustainable electricity system that can meet the evolving demands of the community while ensuring service remains safe, reliable, and affordable.

The four Investment Priorities are:

- **Growth & Electrification:** Powering a Growing Community
- **Renewing Deteriorating Infrastructure**
- **Grid Modernization:** Enabling the Energy Transition
- **Enhancing Resilience**

These Investment Priorities are underpinned by two Focus Areas:

- **Managing Rising Costs:** Ensuring customer affordability amidst economic uncertainties.
- **Investing in the Workforce:** Developing a robust and skilled workforce to navigate the evolving energy landscape.

By strategically balancing system upgrades with affordability and investing in its workforce, Hydro Ottawa is building a resilient and sustainable electricity system. Customer surveys, detailed in Section 3.3 of Schedule 2-5-4 - Asset Management Process, demonstrate strong support for the capital plan, confirming the effectiveness of this customer-centric approach.

2.3.1. Growth & Electrification - Powering a Growing Community

Focusing on expanding grid capacity to serve a growing community and ensure a reliable, resilient electricity system capable of meeting increasing demand driven by new customer connections and distributed energy resources (DERs).

To meet Ottawa's growing energy needs driven by electrification and expansion, Hydro Ottawa is strategically evolving its infrastructure and operations through 2030.

The City of Ottawa is experiencing consistent expansion, with ongoing residential development driving increasing demands on Hydro Ottawa. The utility's residential customer connection volumes illustrate this growth. These volumes have increased from a budgeted annual average of 3,190 to actuals of 6,067 over the 2021-2023 period. This upward trend is projected to

continue, fueled by the City of Ottawa's forecasted population growth at a rate of 1.3% CAGR[6] over the 2026-2031 period and provincial emphasis on new housing development, as evidenced by the *More Homes Built Faster Act, 2022.*[7] For details on this, see Section 3.5.1, Schedule 2-5-6 - System Access Investments.

Electrification is also profoundly influencing electricity demand, adding significant pressure to the system. And this trend is expected to continue as Federal Government legislation requires 60% of all light duty vehicles sold in Canada to be electric vehicles by 2030 and 100% by 2035, compared to 9% of vehicles sold in 2021.[8] The increasing adoption of electric vehicles represents a substantial load growth factor, with the electrical demands of EV charging, particularly when concentrated and simultaneous, requiring robust grid reinforcement, especially around public charging facilities. For example, Hydro Ottawa has planned grid infrastructure investments to support the City of Ottawa's plan to procure 354 electric buses by 2027 and a full transition to electric buses by 2036[9]. Refer to Section 4.3.2, Schedule 2-5-6 - System Access Investments for additional details.

Similarly, the growing adoption of electric space heating contributes to increased electricity consumption, particularly during peak winter demand periods. These trends necessitate infrastructure upgrades to accommodate higher loads and maintain system reliability with heat pumps projected to provide more than 50% of residential space heating needs by 2050, up from 6% in 2021.[10]

[6] City of Ottawa, "Growth projections for Ottawa: 2018-2046," https://ottawa.ca/en/living-ottawa/statistics-and-demographics/growth-projections-ottawa-2018-2046#section-26e79cf6-0a3c-4ab0-92fe-6a0c44150b93
[7] Legislative Assembly of Ontario, "Bill 23, *More Homes Built Faster Act, 2022.*"
[8] Statistics Canada, "Watt's up? Electric Vehicles and future electricity generation needs," https://www.statcan.gc.ca/o1/en/plus/5497-watts-electric-vehicles-and-future-electricity-generation-needs
[9] Ottawa-Carleton Transportation, "Zero-Emission Bus," https://www.octranspo.com/en/our-services/vehicles/zero-emission-bus/
[10] Canada Energy Regulator, "Canada's Energy Future 2023: Energy Supply and Demand Projections to 2050," https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/

Hydro Ottawa is witnessing a significant escalation in large load requests, exceeding 5 MVA, fueled by the accelerating trend of electrification. Since 2018, the utility has recorded a marked upswing in large load connection requests and inquiries, and the pace of demand notably quickened from 2023 onwards. This burgeoning load profile is clearly depicted in Figure 4, which breaks down 110 MVA of large loads successfully integrated into the grid between 2010 and 2023 (blue), 113 MVA of confirmed customer commitments, secured through signed Offers to Connect and slated for completion by 2028 (orange), and a further 199 MVA of potential load requests, encompassing preliminary inquiries through to formal load summary submissions (grey and green). Should these potential requests materialize by 2030, Hydro Ottawa anticipates an unprecedented 312 MVA increase in its total load demand over the 6 year span of 2024-2030; a three-fold increase from the 110MVA connected in the previous 10 years.

Figure 4 - Large Load Connections, Commitments, Requests & Inquiries

If all these requests materialize, this would represent an increase of 312 MVA by 2030, tripling the amount connected during the previous 14-year period.

Key examples of the projects driving these large load requests include the Ottawa Hospital's New Campus, OC Transpo's Zero Emission Buses, Department of National Defence Dwyer Hill Training Center Upgrade, new laboratory facilities for the Regulatory and Security Science Main Project (located at the Canadian Food Inspection Agency's Ottawa Laboratory), and the TerraCanada National Capital Area project (located at the National Research Council of Canada facilities).

To effectively address these converging challenges—increased residential connections, the electrification surge, and escalating demand from large-load customers—Hydro Ottawa is pursuing strategic and substantial investments, with a focus on:

Capacity Expansion: Investments in new substations, upgrades to existing facilities, and expansion of the distribution network to effectively manage increased load and ensure service reliability.

Grid Modernization: Initiatives to modernize the grid to better accommodate the dynamic load profiles associated with EV charging and electric heating, enhance grid flexibility and responsiveness, and DERs and integrate smart grid technologies.

Non-Wires Solutions (NWSs): Strategic implementation of NWSs, such as utility-owned battery energy storage systems and a Non-Wires Customer Solutions Program, to proactively manage peak demand, defer or avoid traditional infrastructure investments, and enhance grid reliability.

With anticipated growth and rapid rate of change across the City of Ottawa, Hydro Ottawa is committed to collaboration, working with developers and the City of Ottawa through various working groups, including the Utility Coordinating Committee, Energy Evolution, and the Decarbonization Working Group. These partnerships are essential to developing well-informed grid capacity enhancement plans and ensuring the continued provision of reliable electricity services to a dynamic and expanding community. This collaborative approach aims to support ongoing residential and commercial development, facilitate urban intensification initiatives, and enable major infrastructure projects within the community in a cost-effective manner.

2026-2030 Capital Expenditure Overview

Hydro Ottawa's proposed capital investments are driven by the need to adapt to the evolving energy landscape that is being reshaped by Growth & Electrification. The portfolio of

investments under Growth & Electrification focuses on expanding the electricity system to accommodate customer connections, forecasted demand and support the integration of DERs. This is achieved through investments in the System Access category, which includes programs like Customer Connections to facilitate new residential and commercial developments, System Expansion to address major infrastructure projects like new stations, and Generation Connections to enable the connection of customer-owned DERs. It is also achieved through investments in the System Service category where although the primary driver is dealing with capacity constraints it also allows efficient investment in programs that prepare the grid for the projected impacts of decarbonization and integration of distributed renewable energy resources. These proactive initiatives are essential to ensure the continued provision of reliable and sustainable electricity services, effectively managing the challenges and opportunities presented by these transformative trends, and ultimately, enabling a robust energy transformation in Ottawa.

2.3.2. Renewing Deteriorating Infrastructure

Focusing on mitigating failure risk by strategically upgrading or replacing deteriorating and critical infrastructure, prioritizing assets with the greatest impact on system reliability and safety based on condition assessments.

To ensure continued, safe, and reliable electricity delivery to its customers, Hydro Ottawa must proactively invest in renewing its deteriorating infrastructure.

Hydro Ottawa's enhanced asset management process, detailed in Section 4.4 of Schedule 2-5-4 - Asset Management Process, includes comprehensive ACAs to determine asset health and facilitate holistic risk assessment. These assessments reveal that 54% of Hydro Ottawa's assets have reached the end of their typical useful life (TUL) as shown in Figure 5 below, and 6% are in degraded (Poor or Very Poor) condition as shown in Figure 6 below.

Without intervention, these figures will worsen significantly. By 2030, the proportion of assets beyond their TUL is projected to increase to 67% as shown in Figure 7, and the percentage in degraded condition will rise to 10%, see Figure 8. This presents a growing and immediate risk of

asset failure, with the potential to disrupt electricity service. Hydro Ottawa estimates that replacing all assets projected to be in degraded condition by 2030 would cost $862M, as shown in Table 4.

Figure 5 - 2024 Overall Asset Age Demographics (Current State)

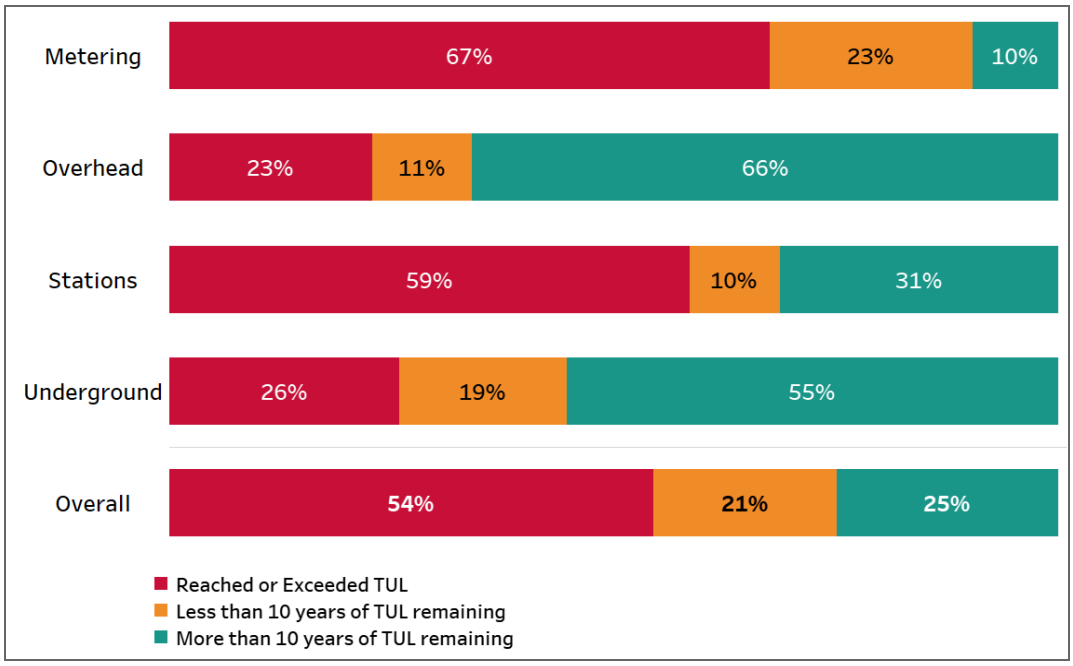


Figure 6 - 2024 Overall Asset Condition Profile (Current State)

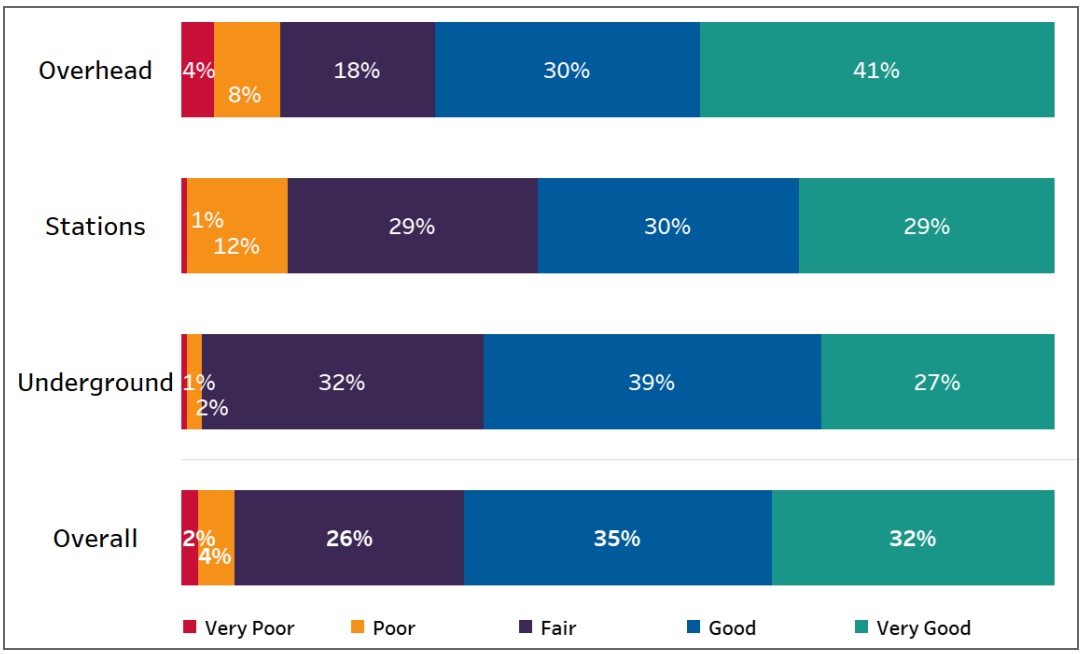


Figure 7 - 2030 Overall Projected Asset Age Demographics - 2030 (No Investment)

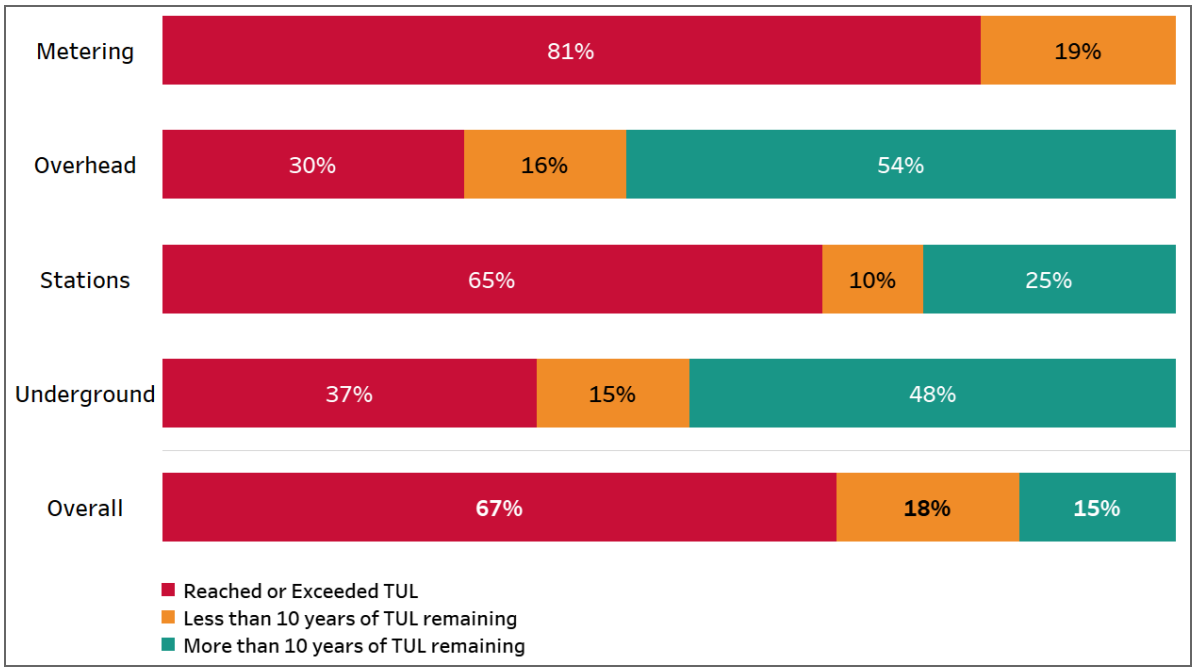
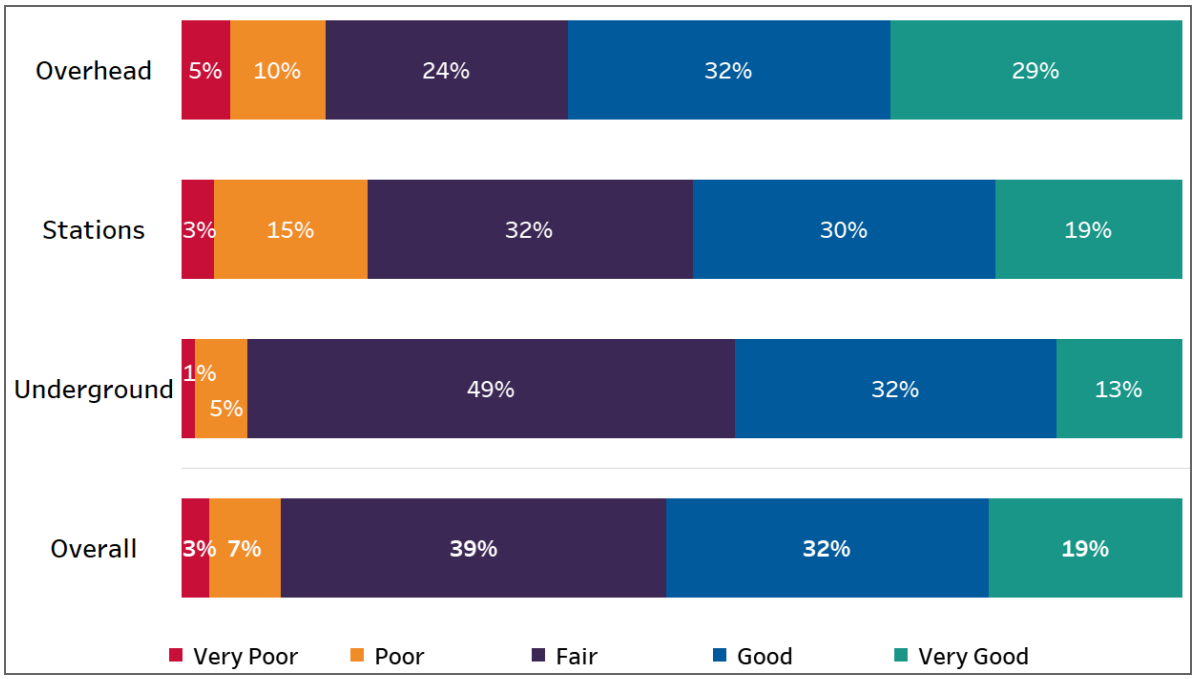


Figure 8 - 2030 Overall Projected Asset Condition Profile - 2030 (No Investment)

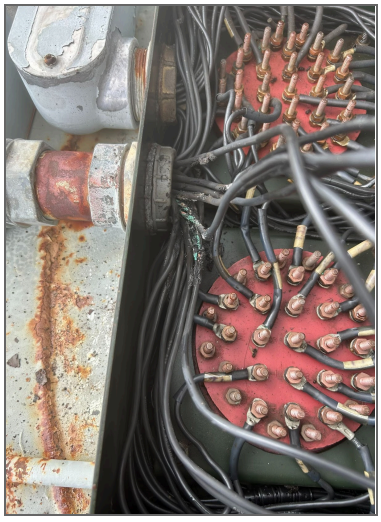


Figures 9 to 11 illustrate examples of deteriorating asset infrastructure found through inspection and maintenance programs.

Figure 9 - Examples of Station Asset Deterioration

(a) Station transformer corrosion and leaks

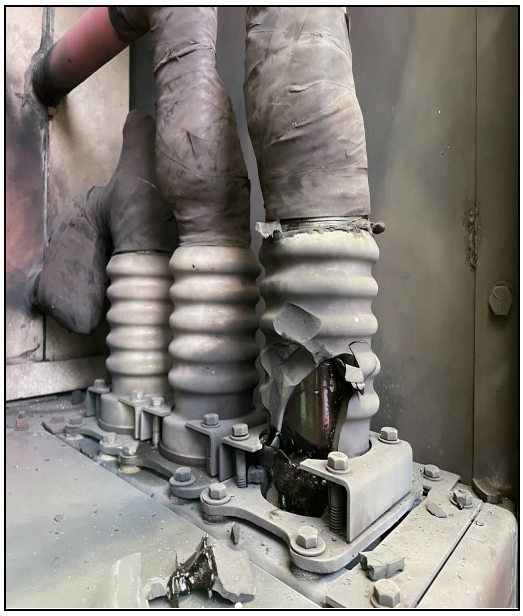
(b) Switching equipment lubrication leaks



(c) Corroded connections and burnt wiring

(d) Switchgear failure and fire

(e) Station outdoor infrastructure deterioration



(f) Pothead failure connected to station bus

Figure 10 - Examples of Underground Distribution Asset Deterioration

(a) Underground transformer corrosion

(b) Underground cable failure

1

Figure 11 - Examples of Overhead Distribution Asset Deterioration

(a) Pole decay

(b) Overhead switch operational defect

Hydro Ottawa's asset renewal strategy is to replace assets at a pace which maintains a consistent percentage of assets in degraded condition with the aim of maintaining overall system reliability. Hydro Ottawa prioritizes replacement of assets that pose the highest overall system risk by leveraging Predictive Analytics to forecast asset degradation based on the age and condition of assets. While safety, financial, environmental, and compliance risks are considered, reliability is the primary driver of the overall risk value.

Table 3 demonstrates the outcomes of the risk mitigation approach proposed by Hydro Ottawa for the 2026-2030 period. As outlined in the table, the investment required to replace all assets that are projected to be in degraded condition by 2030 is estimated at $862M - this would effectively reduce the percentage of assets in degraded condition to 0% by 2030. Competing financial priorities, notably growth, electrification, grid modernization, and resilience, render this investment level impractical. Alternatively, Hydro Ottawa is proposing an investment of $261M over the 5-year period, which is projected to result in 8% of the overall assets being in degraded condition by 2030, a 2% increase compared to 2024. Hydro Ottawa has demonstrated strong

reliability results through the 2021-2025 period, see Schedule 2-5-3 - Performance Measurement for Continuous Improvement. Despite the increase forecasted in overall percentage of assets in degraded condition, Hydro Ottawa expects to maintain the same level of service over the 2026-2030 period due to the improved risk prioritization stemming from the use of Predictive Analytics and the enhancements to the inspection and maintenance programs. Details of Hydro Ottawa's proposed System Renewal investments are provided in Schedule 2-5-7 - System Renewal Investments.

Table 3 - 2024 and 2030[11] Asset System Renewal Needs by Condition

Asset System	Hydro Ottawa's Current (2024) % of Assets in Degraded Condition	Investment Required to Replace all Assets Projected to be Degraded by 2030 (in 2024 dollars)	Hydro Ottawa's 2026-2030 Proposed System Renewal Investment	Hydro Ottawa's 2030 Projected Outcome for % Assets in Degraded Condition (after investment)
Overhead	12%	80 Overhead (OH) Switches, 5,737 Poles **$199M**	340 OH Switches, 1,975 Poles **$68M**	10%
Stations[12]	13%	53 Station Batteries,177 Station Breakers, 12 Station Transformers **$205M**	14 Station Batteries, 83 Station Breakers, 11 Station Transformers **$90M**	15%
Underground	3%	114 Cable Chambers, 28 Underground (UG) Switchgear, 336 km XLPE Cable, 1,972 Vault Transformers, 18 Vault Switchgear **$458M**	30 Cable Chambers, 30 UG Switchgear, 61 km XLPE Cable, 90 Vault Distribution Transformers, 30 Vault Switchgear **$103M**	6%
Total	**6%**	**$862M**	**$261M**	**8%**

[11] All costs are in 2024 dollars
[12] For Stations, the dollars shown don't consider relays, RTUs, station minor assets, buildings/facilities and transfer trip installations, as these asset types don't have condition information associated with them. These specific station assets follow an age-based replacement criteria and Hydro Ottawa has considered them in the 2026-2030 system renewal investment plans.

Hydro Ottawa's risk-mitigation asset renewal strategy relies heavily upon condition information from maintenance inspections. This necessitates adjustments to both the frequency and scope of the distribution and stations testing, inspection, and maintenance programs. To improve data accuracy, Hydro Ottawa will implement advanced inspection technologies, including drone inspections for overhead assets, enabling targeted maintenance and improved asset health assessments. For underground assets, advanced techniques like Very Low Frequency Tan-Delta, Partial Discharge, and Time Domain Reflectometry will identify vulnerabilities and optimize investments. Cost-effective refurbishment, such as cable accessory replacement, will extend underground asset life. Hydro Ottawa's asset renewal strategy does not prioritize replacing assets that have reached or exceeded their typical useful life (TUL). As such, an increase in the frequency of inspections of assets that have reached TUL is also proposed for certain assets. Details of Hydro Ottawa Operations & Maintenance plans are provided in Schedule 4-1-2 - Operations, Maintenance and Administration Program Costs.

In addition to its distribution assets, Hydro Ottawa relies on a diverse fleet of 237[13] vehicles and 44 other units of transportation equipment to support its operations, maintenance and administration (OM&A) and capital work programs. The vehicles and equipment are essential for providing efficient and reliable customer service including timely power restoration, efficient distribution system construction and maintenance, and ensuring worker and public safety. Of the 281 vehicles and equipment, 154 (55%) will be at or beyond their replacement criteria age in the 2026-2030 rate period. More details on the Fleet strategy and capital investment plan can be found in Section 3.4.5 of Schedule 2-5-4 - Asset Management Process and Section 11 of Schedule 2-5-9 - General Plant Investments.

2026-2030 Capital Expenditure Overview

Recognizing the importance of maintaining a reliable and safe electricity network, Hydro Ottawa prioritizes Renewing Deteriorating Infrastructure. This involves dedicating a substantial portion

[13] As of September 30, 2024

of the capital investment plan to the System Renewal category, which focuses on replacing deteriorating assets and upgrading critical infrastructure components. Key programs within this category include Stations and Buildings Infrastructure Renewal to replace deteriorating station assets, UG Distribution Assets Renewal to address deteriorating underground assets, OH Distribution Assets Renewal to renew deteriorating overhead infrastructure, Metering Renewal to modernize metering infrastructure, and Corrective Renewal to enable rapid response to unexpected failures. The capital investment plan for Fleet is included under the General Plant investment category.

2.3.3. Grid Modernization - Enabling the Energy Transition

Focusing on modernizing the grid through strategic technology adoption and infrastructure upgrades to enable the energy transition, facilitate customer participation, and optimize DER integration, thereby enhancing grid capabilities and efficiency.

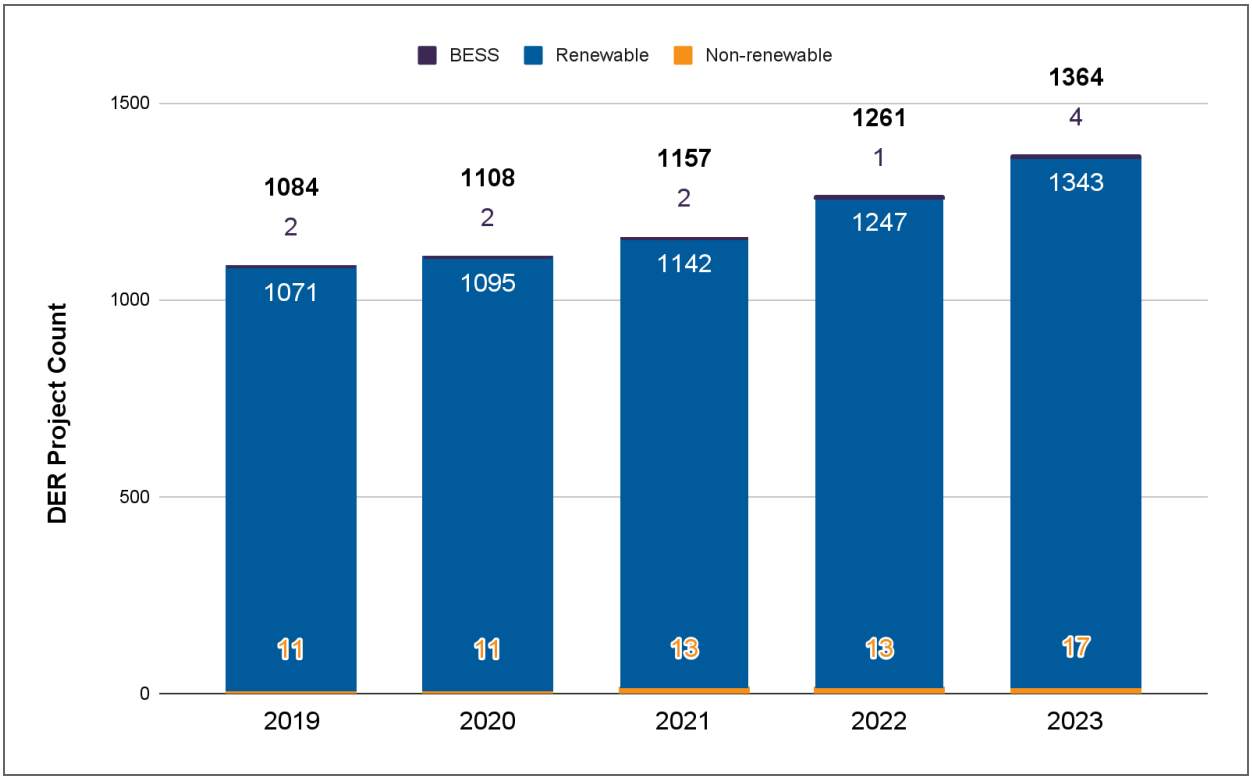
Hydro Ottawa is committed to enabling the energy transition by modernizing the grid to facilitate customer participation, enable widespread electrification, and optimize the penetration and integration of DERs.

Market forces, regulatory drivers, and funding opportunities are converging to create a compelling case for grid modernization to enable the energy transition. This need is underscored by Ontario's own energy policies, such as the recently released *Ontario's Affordable Energy Future: The Pressing Case for More Power,*[14] which explicitly identifies the need to modernize distribution grids to facilitate active monitoring of systems, build better resilience, and provide customers the energy and services they will need into the future.

Customer demand for DERs within Hydro Ottawa's territory is increasing. Electricity Canada engaged Innovative Research Group Inc. to conduct a national Behind the Meter (BTM) Survey in 2021 to explore Canadian attitudes towards new technologies designed to help consumers better manage their energy use and enable the energy transition. The survey showed that 14% of respondents already had, or would actively take steps to acquire solar panels. Please refer to Attachment 1-4-1(F) - Behind the Meter Survey. To illustrate, from 2019 to 2023, the number of connected DERs on Hydro Ottawa's grid increased by over 25% as per Figure 12. See Schedule 2-5-4 - Asset Management Process for more details.

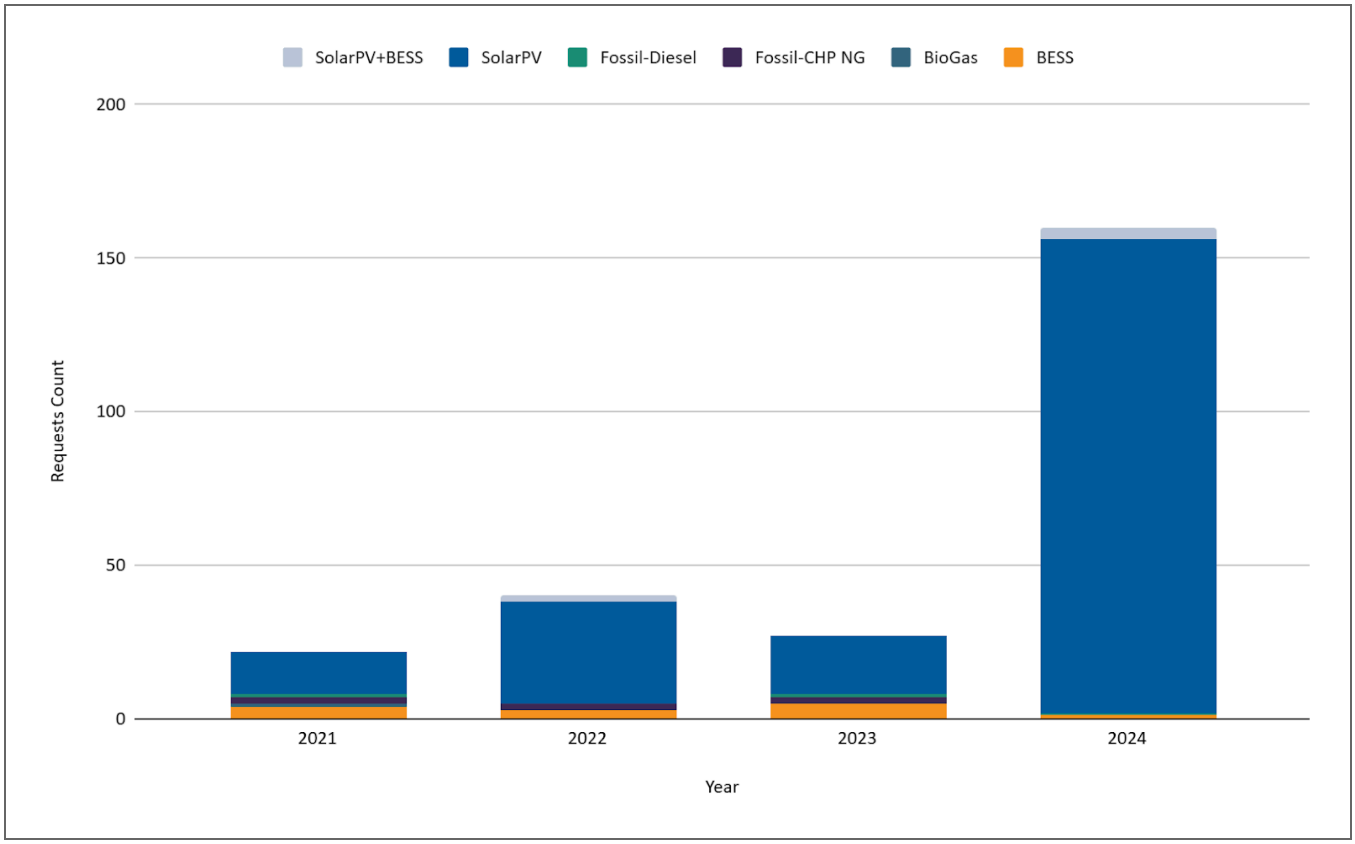
[14] Ministry of Energy and Electrification, *Ontario's Affordable Energy Future: The Pressing Case for More Power*, https://www.ontario.ca/page/ontarios-affordable-energy-future-pressing-case-more-power

Figure 12 - Total System Generator Count 2019-2023



Hydro Ottawa has seen a steady rise in preliminary connection impact assessment requests for DERs, alongside the growing number of annual DER connections. This is particularly evident in 2024, with a significant surge in requests attributed to the IESO's Ottawa DER Large Solar PV Funding Incentive program launched in January 2024, see Figure 13. The program's expansion to province-wide customers in January 2025 suggests that this trend will likely persist, although not all inquiries result in actual projects. These incentive programs are clearly stimulating public interest and participation in DER.

Figure 13 - DER Annual Requests Count 2021-2024



This surge, coupled with customer expectations for enhanced reliability during extreme weather events and a growing interest amongst customers to store energy for their own use and potentially for system benefit, necessitates a more flexible and responsive grid. As outlined in Schedule 1-4-2 - Customer Engagement on the 2026-2030 Application, a majority of customers surveyed across all customer classes support Hydro Ottawa's proposed investment plan, citing the need for the utility to prepare its grid for the future.

"Ontario's Affordable Energy Future: The Pressing Case for More Power"[15] and the 2024 Minister of Energy and Electrification's Letter of Direction to the OEB[16] emphasize the critical role of grid modernization in achieving Ontario's energy goals. This includes meeting growing electricity demand, integrating renewable energy, and enabling the energy transition by advancing NWSs, customer enabled solutions, and future utility business models. The OEB, which is also prioritizing grid modernization in its strategic planning,[17] has streamlined DER connection processes, and is encouraging innovation through its regulatory frameworks and Innovation Sandbox. Although policy and regulatory frameworks must continue to adapt to support customer choice, address barriers to DER adoption, and optimize the use of DERs to meet energy demands, the grid modernization investments Hydro Ottawa is implementing are crucial for facilitating this transition to a more distributed grid.

Further bolstering these efforts, Natural Resources Canada (NRCan) has provided substantial financial support to the utility sector through programs like the Smart Renewables and Electrification Pathways Program and the Energy Innovation Program's Smart Grid Call. This confluence of customer needs, provincial policy alignment, OEB regulatory support, and Federal funding creates a clear and compelling market signal supporting strategic investments in grid modernization for a sustainable energy future. By responding to these drivers, Hydro Ottawa is proactively building a grid that can meet the evolving needs of its customers, support the energy transition, and contribute to a more reliable and resilient electricity system.

To achieve this objective, Hydro Ottawa is focusing on:

- **Amplifying Grid Observability:** Increasing visibility and understanding of the grid's operational status, including constraints, to enhance operational decision making and to inform targeted system upgrades. Hydro Ottawa will achieve this by investing in AMI 2.0, advanced sensors, monitoring systems, and data analytics.

[15] https://www.ontario.ca/page/ontarios-affordable-energy-future-pressing-case-more-power
[16] Ministry of Energy and Electrification, *Letter of Direction to the OEB* (December 19, 2024).
[17] OEB, *Strategic Plan 2021/22 - 2025/26* (April 30, 2021).

- **Improving Grid Controllability:** Improved grid controllability will focus on increasing the level of control Hydro Ottawa has over the grid. This will allow for more dynamic operation, facilitating optimized performance and improving reliability and resilience through redundancy. These capabilities will be unlocked by investing in remotely operable control devices, advanced control systems, and observability enhancements.
- **Meeting Electrification Capacity Needs:** Hydro Ottawa has integrated electrification demand projections into its investment planning framework to strategically address the anticipated increase in electricity demand associated with a decarbonized future. This forward-looking approach ensures the efficient deployment of capital to ensure that grid upgrades provide the necessary foundation for growth and a sustainable electricity grid.
- **DER Enablement:** Hydro Ottawa is committed to enabling the widespread adoption and utilization of DERs by connecting customers to available financial incentives, see further details in Section 2.4.3 of Schedule 1-4-1 - Customer Engagement Ongoing, fostering collaborative partnerships, and implementing strategic programs. This increased integration of DERs, NWSs combined with advancements in grid observability and controllability, will allow Hydro Ottawa to accommodate two-way flow of electricity generated by these sources and leverage DERs and other controllable devices to reduce peak load and integrate local renewable energy sources within its service territory, enhancing operational flexibility.

Through strategic investments in grid modernization, Hydro Ottawa is building a foundation for a more sustainable and resilient energy future. This will enable greater customer participation, support the widespread adoption of electric vehicles and other technologies, and facilitate the integration of DERs.

2026-2030 Capital Expenditure Overview

Grid Modernization is a key focus of Hydro Ottawa's investment plan, with initiatives spread across multiple categories. These initiatives aim to leverage technologies and enhance grid capabilities to enable DER connections, improve efficiency, reliability, and resilience. This includes Capacity Upgrades to increase capacity through various means, including NWSs,

Distribution Enhancements to improve system observability through initiatives like advanced grid monitoring, Grid Technology to enable enhanced monitoring and control, cyber security and IT Infrastructure to strengthen IT systems and protect against cyber threats, and Data and System Integrations to consolidate data systems and improve decision-making.

2.3.4. Enhancing Resilience

Focusing on enhancing grid resilience by proactively upgrading infrastructure and implementing measures to protect against increasingly frequent and intense severe weather events and cyber threats.

Performing restoration work in the Pineglen neighbourhood post May 2022 Derecho

Extreme Weather

As noted in Hydro Ottawa's Customer Engagement survey, which can be found in Schedule 1-4-2 - Customer Engagement on the 2026-2030 Application, Ottawa has become the weather-alert capital of Canada.[18] Extreme weather events such as high heat, high winds, flooding and ice storms are increasingly straining and damaging the electricity grid.

[18] Environment and Climate Change Canada

The City of Ottawa, in partnership with the National Capital Commission and Environment and Climate Change Canada developed climate projections for the National Capital Region which were published within *"The Climate Change Vulnerability & Risk Assessment"*[19]. The report states:

> "People are feeling the impacts of climate change globally and locally. Research predicts these impacts will intensify and affect the National Capital Region for decades to come. As such, the region will experience more extreme weather events like floods, wildfires, droughts, heatwaves, freeze-thaw spells and tornadoes."

The OEB is also addressing climate-related challenges by focusing on enhancing distribution sector resilience, responsiveness, and cost efficiency. Following the Minister of Energy's 2022 Letter of Direction, the OEB released a report on June 29, 2023, outlining actions to mitigate vulnerabilities to severe weather events. The OEB is now implementing these recommendations and pursuing policy consultations, including the Distribution Sector Resilience, Responsiveness & Cost Efficiency (EB-2023-0003), which has led to further work in the Reliability and Power Quality Review (EB-2021-0307) and the Vulnerability Assessment & System Hardening Project (EB-2024-0199).

[19] National Capital Commission, Climate Change Vulnerability & Risk Assessment (June 2022), page i.

City of Ottawa Climate Resiliency - What will Ottawa's climate look like in the future?[20]

Hydro Ottawa has experienced firsthand the impact of these events, with a series of severe storms in recent years causing significant damage and disruption to the electricity grid.

[20] City of Ottawa, "Climate Resiliency," https://ottawa.ca/en/climate-resiliency

The effects of the May 2022 Derecho on Hydro Ottawa equipment

Recent events, as detailed in Table 4 below, include:

- 2017: Freezing rain, heavy snow, flooding, and a severe thunderstorm which impacted thousands of customers.
- 2018: Tornadoes, freezing rain, and high winds caused widespread outages, impacting over 200,000 customers.
- 2019: A flash storm, flooding, lightning strikes, and high winds which caused repeated disruptions throughout the year.
- 2021: Lightning strikes caused further outages.

- 2022: The devastating Derecho, with record-breaking wind speeds, which impacted over 180,000 customers and became the 6th costliest natural disaster in Canada's history. This was followed by a bomb cyclone in December, causing further outages.
- 2023: Tornadoes, an ice storm, freezing rain, and multiple lightning strikes continued the trend of severe weather impacts.

Downed poles after the May 2022 Derecho

Table 4 - Historical Weather Events & Impacts

Year	Severe Weather Event	Description & Impacts
2017	Freezing rain & heavy snow (January)	• 19,130 customers (6% of customer base)
	Flooding (May)	• 1-in-100-year flood levels for Ottawa River
	Thunderstorm (September)	• 11,391 customers (3% of customer base)
2018	Freezing rain (April)	• 55,101 customers (17% of customer base)
	High winds (May)	• 63,869 customers (19% of customer base)
	Tornadoes (September)	• 216,000 customers (65% of customer base) • Class EF-2 and EF-3 tornadoes; 260 km/h winds • 90% of customers restored within 2.5 days
2019	Flash storm (April)	• 44,511 customers (13% of customer base) • Loss of supply and substation flooding
	Flooding (May)	• 1-in-1000-year flood • Highest water levels on record for Ottawa River
	Lightning (July)	• 70,069 customers (21% of customer base) • Four separate loss of supply outages
	High winds (November)	• 14,228 customers (4% of customer base)
2021	Lightning (June)	• 17,441 customers (5% of customer base) • Lightning and loss of supply
2022	Derecho (May)	• 180,946 customers (52% of customer base) • Highest wind speeds on record in Ottawa & Ontario • Severity of wind speeds greatly exceeded forecast • 6th costliest natural disaster in Canada's history • $24M in restoration costs for Hydro Ottawa • 90% of customers restored within seven days
	Bomb cyclone (December)	• 67,710 customers (19% of customer base) • Intense freezing rain and snow; loss of supply
2023	Ice storm and freezing rain (April)	• 163,448 customers (45% of customer base) • 90% of customers restored within two days
	Lightning (June)	• 15,413 customers (4.25% of customer base) • Loss of supply
	Tornados, lightning, hail and wind (July)	• 37,821 customers (10.4% of customer base) • >6,000 total lightning strikes during month of July 2023 (8 times as many as July 2022)

These events have contributed to increased spending on emergency asset replacement and have significantly impacted the system reliability performance, see Figure 14, underscoring the need for proactive investment in grid resilience.

Figure 14 - Weather Related Reliability Impact

To combat the growing risks associated with major events, Hydro Ottawa is focusing on proactive measures such as strategic undergrounding of overhead lines, increasing tree trimming, strengthening the grid through infrastructure upgrades, and hardening assets. These measures are aimed at reducing the likelihood of storm damage, thereby enhancing resilience against extreme weather events.

Cyber security

In response to the rising threat of cybercrime impacting Canadian organizations, and the strategic importance of Ottawa as a G7 capital, Hydro Ottawa maintains a strong focus on strengthening cyber security protections and controls for its essential assets and networks. Moreover, cybercrime is on the rise across Canada. As the capital city of a G7 country which is a high-value target for malicious actors, investing in grid resilience is essential to protect the community's electrical system from the increasing frequency and intensity of cyber threats. This focus is essential to prevent compromises that could impact reliability and put customers at risk. As is highlighted in the National Cyber Threat Assessment 2025-2026 (NCTA) published by the Canadian Centre for Cyber Security, Ransomware is the top cybercrime threat facing Canada's critical infrastructure, including the energy sector[21]. From 2021-2024, Ransomware incidents saw a 26% year-over-year growth with predictions of this to continue to trend upwards.[22] Statista's Market Insight also predicts that from 2024 to 2028, the global cost of cybercrime will rise from $9.22 trillion to $13.82 trillion[23]. The NTCA also emphasizes threats from nation states as geopolitical events will continue to impact critical infrastructure as well as the continued rise of an expanded attack surface that will exponentially grow as more connected devices are brought online and require access to the OT infrastructure. This further enforces the need for a holistic cyber security approach towards key investment priorities such as Grid Modernization and Grid Resilience.

These areas of focus align with industry standards and regulatory requirements for grid resilience, including compliance with the OEB's Vulnerability and System Hardening requirements. Hydro Ottawa is also actively implementing measures outlined as in Attachment 2-5-4(B) - Addendum Report to Distribution System Climate Vulnerability Risk Assessment and Climate Change Adaptation Plan and Attachment 2-5-4 (E) - Resilience Investment Business Case Report to enhance resilience against future extreme weather events.

[21] Canadian Centre for Cyber Security, "National Cyber Threat Assessment 2025-2026," https://www.cyber.gc.ca/sites/default/files/national-cyber-threat-assessment-2025-2026-e.pdf
[22] *Ibid*
[23] Statista, "Cybercrime Expected To Skyrocket in Coming Years" (February 22, 2024)

By focusing on grid resilience, Hydro Ottawa is taking proactive steps to protect its customers and ensure a reliable and resilient electricity supply for the future, despite the growing challenges posed by a changing climate and increasing cyber threats.

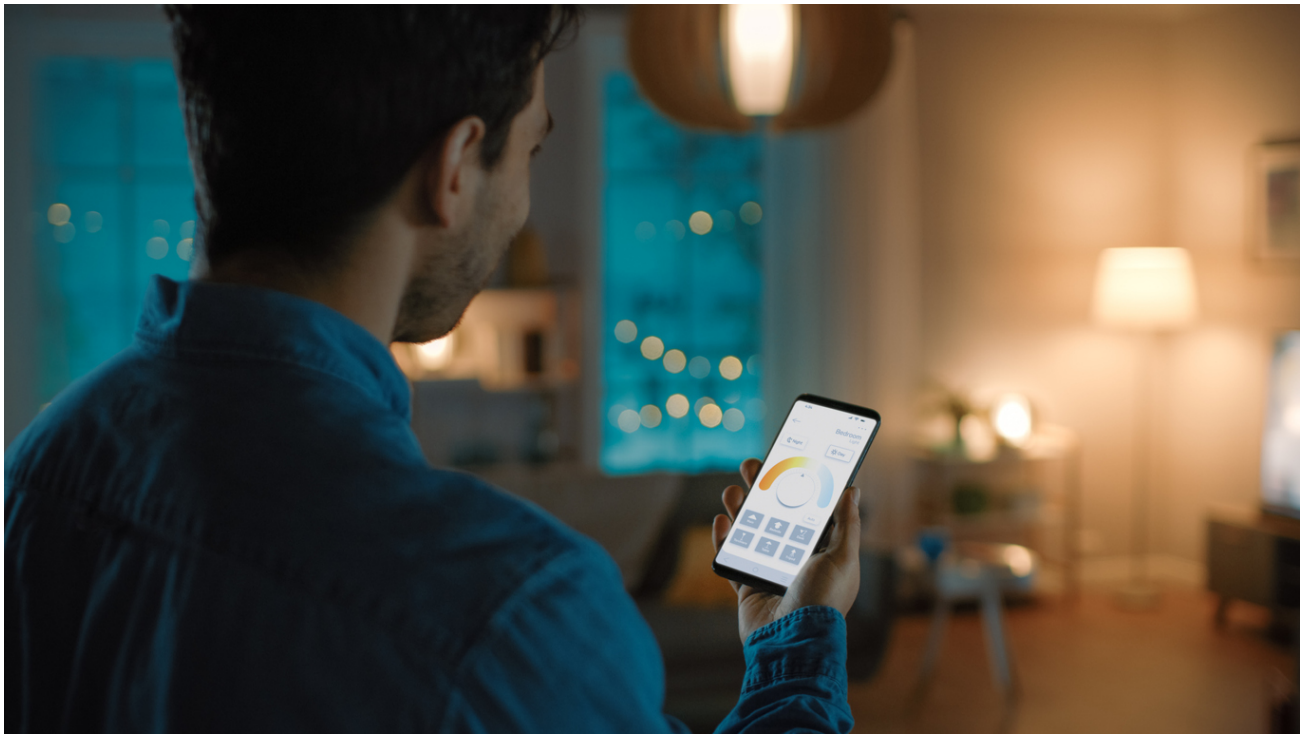
2026-2030 Capital Expenditure Overview

Grid Resilience is a priority embedded throughout Hydro Ottawa's investment plan. Initiatives focus on strengthening the grid against various threats, including extreme weather events, equipment failures, and cyberattacks. This is achieved through System Renewal to replace deteriorating infrastructure and improve reliability, Distribution Enhancements to implement initiatives like strategic undergrounding of overhead lines and storm hardening initiatives, control and optimization to improve grid flexibility through advanced monitoring and control capabilities, cyber security and IT Infrastructure to enhance IT security measures, and Grid Technology to focus on improving resilience to extreme weather events and integrating new technologies.

2.3.5. Focus Areas

Hydro Ottawa's investment planning for the 2026-2030 period is fundamentally anchored in two critical focus areas: ensuring customer affordability amidst economic uncertainties, and investing in a robust and skilled workforce to navigate the rapidly evolving energy landscape. These dual priorities are essential for maintaining service reliability and facilitating the necessary infrastructure upgrades and grid modernization, all while mitigating the impact on customer rates.

Managing Rising Costs



Focusing on managing rising costs to maintain affordability for customers while ensuring a reliable and resilient electricity system to meet growing demand.

Hydro Ottawa is operating within a complex landscape characterized by heightened customer sensitivity to electricity costs, persistent inflationary pressures, elevated interest rates, and an increasing reliance on an uninterrupted power supply. The period from 2021 to 2025 was particularly challenging for Hydro Ottawa, marked by the COVID-19 pandemic, the highest inflation in 40 years, a weakened Canadian dollar, supply chain disruptions, and extreme weather events, including the devastating May 2022 Derecho storm. These compounding factors placed considerable financial strain on the company, yet it prioritized customer affordability by forgoing a Z-factor application which would have allowed Hydro Ottawa to recover approximately $8.7M in OM&A costs and depreciation up to the end of 2025 associated

with $15.1M in Derecho capital additions. This decision reflected a commitment to supporting customers during difficult times.

Furthermore, Hydro Ottawa strategically managed its capital expenditures by deferring planned projects, resulting in a $44.2M budget adjustment. Please refer to Table 4 in Section 4.1.2 of Schedule 2-5-5 - Capital Expenditure Plan for additional information. This proactive approach mitigated further financial variances and demonstrated a commitment to responsible fiscal management despite these challenging circumstances. To achieve this outcome, Hydro Ottawa relied heavily upon its robust asset management framework for decisions around investment priorities. The company's strong project and program oversight, alongside stringent budgetary controls refined during the 2021-2025 period, will continue to guide the company in mitigating rising costs and optimizing capital expenditures throughout the next rate period. Furthermore, the operational efficiencies achieved through targeted process improvements and digital transformation will be systematically maintained, ensuring sustained service reliability and cost-effectiveness for customers. Please refer to Schedule 1-3-4 - Facilitating Innovation and Continuous Improvement, for details on these efficiencies and improvements.

Looking ahead to the 2026-2030 period, Hydro Ottawa faces continued economic uncertainties, including high inflation and the general tariff related uncertainty, and must address the urgent need to renew deteriorating infrastructure, modernize the grid, and add significant capacity due to increased growth and electrification and ensure the resilience of the system. To address these challenges while maintaining customer affordability, Hydro Ottawa has implemented a comprehensive cost management strategy that includes:

- **Advanced Asset Management:** Implementing an Enterprise Asset Management (EAM) system to further optimize investment prioritization through integrations with Predictive Analytics and to optimize maintenance schedules through Condition-Based Monitoring.
- **Proactive Risk Management:** Implementing strategies to minimize project delays and disruptions.

- **Benchmarking:** Conducting comparative analysis to identify improvement opportunities.
- **Continuous Improvement and Innovation:** Modernizing the grid and operations by leveraging digital tools and automation.
- **Digital Transformation:** Enhancing service delivery through technology.
- **Infrastructure Efficiencies:** Optimizing asset utilization and leveraging NWSs.
- **Process Improvements:** Investing in workforce development and operational effectiveness.

Hydro Ottawa is also actively considering the impact on costs and affordability by increasing System O&M programs with more frequent inspections, testing, and maintenance to mitigate the risk associated with the deferral of near-term capital investments.

Hydro Ottawa's planning is rooted in a thorough analysis of the risks posed by deteriorating infrastructure, increasing electricity demand, and the imperative for grid modernization and resilience. Recognizing the critical importance of aligning with customer priorities, the utility proactively sought feedback through a comprehensive engagement survey. The survey confirmed that, even with a clear understanding of the associated bill impacts, customers overwhelmingly support the proposed plan for essential grid investments and infrastructure renewal as outlined in Section 2.2 - Customer Priorities. This valuable insight directly informs our investment decisions, reinforcing our commitment to balancing necessary upgrades with affordability. Cost control and efficiency remain paramount, with a focus on continuous improvement across all operations and capital projects. To minimize rate impacts, Hydro Ottawa will carefully prioritize and phase investments, addressing the most critical system risks first. This approach ensures that all decisions are guided by cost consciousness, customer value, and the long-term reliability of our electrical system.

Investing in the Workforce

Focusing on workforce development and safety to ensure a skilled and secure energy future.

While maintaining a relatively stable headcount over the past two rate periods, Hydro Ottawa now faces a confluence of escalating operational demands, rapid technological advancements, and the intensifying impacts of climate change, necessitating a strategic and significant investment in its workforce. This investment is not merely a reactive measure to address immediate pressures, but a proactive and crucial step to ensure long-term resilience, maintain service reliability, and effectively navigate the complex and evolving energy landscape. The need for specialized skills, expanded capacity, and enhanced responsiveness is paramount to meet the growing demands of the customer base and to safeguard the critical infrastructure upon which the community depends.

Hydro Ottawa recognizes that investments in both assets and a skilled workforce are paramount. While investments in infrastructure and maintenance are critical, the company acknowledges that during challenging times – such as storms, pandemics, and labour disruptions – it is the dedication and expertise of its workforce that is essential to maintain reliable service and ensure the continued provision of electricity to its customers. The challenges of recent years have underscored the critical importance of a well-resourced and resilient workforce. Hydro Ottawa has faced an unprecedented series of challenges, including:

- A near-strike in 2021 and an 84-day strike in 2023, which disrupted operations and highlighted the need for robust contingency planning and workforce stability. These disruptions also reflected, among other factors, underlying staffing concerns.
- Increasingly frequent and severe weather events, with storm after storm demonstrating the vulnerability of the electricity grid and the essential role of skilled personnel in rapid restoration efforts.
- Deteriorating infrastructure and evolving customer energy demands are driving the need for grid modernization, enhanced resilience, and the integration of new technologies.

In addition to the aforementioned, in 2021-2023, Hydro Ottawa experienced an unforecasted surge in customer-driven growth projects, encompassing unforeseen large-scale developments and a residential subdivision boom. This growth significantly amplified the demand for technical and trade staff. Concurrently, engineering resources faced escalating pressure due to the rising complexity and volume of large load and Distributed Energy Resource (DER) connection requests, requiring specialized engineering expertise. Moreover, the implementation of the Advanced Distribution Management System (ADMS) and the broader Grid Modernization Strategy highlighted the need for new engineering roles to manage advanced technologies. Finally, the need for enhanced oversight of larger, more complex projects, combined with a less tenured workforce, strained Hydro Ottawa's leadership and data analytics capabilities. In

response to these immediate and escalating pressures, Hydro Ottawa could not defer action and added 50 new positions to its workforce in 2024.

Looking ahead to 2026-2030, in order to support the proposed capital and OM&A program investments, and to navigate the rapidly evolving utility landscape driven by grid modernization and the energy transition, Hydro Ottawa must continue to strategically expand its workforce. To determine headcount needs for its direct-labour workforce, Hydro Ottawa's employed a robust, data-driven workforce planning model, ensuring staffing levels are strategically aligned with operational needs and objectives. This model, detailed in Attachment 4-1-3(B) - Workforce Planning Strategy, systematically analyzes current and projected workloads, including capital project volumes, maintenance requirements, and customer growth, to identify required skills and competencies. By assessing the existing workforce and identifying gaps, the model facilitates the development of targeted hiring, training, and development initiatives. This comprehensive approach ensures that workforce needs are addressed proactively, rather than reactively.

For workforce needs not directly attributed to the capital and OM&A projects, Hydro Ottawa took the approach of engaging senior leadership to assess current and future skill requirements, particularly in emerging technological areas. All identified needs were then consolidated, rigorously reviewed, and challenged by executive management. This systematic approach ensures that workforce needs are not addressed in an ad hoc manner, but rather through a comprehensive and data-driven process. The combination of these assessments resulted in a proposed staffing plan that includes the addition of 127 new headcount over the 2026-2030 period. The increased headcount is primarily driven by the following key factors:

Significant Capital Program Growth: A near doubling of capital investment necessitates a substantial increase in skilled trades and technical staff to execute projects related to growth and electrification, infrastructure renewal, grid modernization, and resilience. This includes additional workforce to substantiate substation construction, battery energy storage system installations, and the replacement of deteriorating assets.

Increased Complexity and Volume of Projects: The rising complexity of projects, especially those involving grid modernization and the integration of Distributed Energy Resources (DERs), demands specialized engineering and technical expertise. This includes roles focused on new technologies, standards development, and advanced grid operations.

Deteriorating Infrastructure and Enhanced Maintenance: The need to renew deteriorating infrastructure and implement enhanced testing, inspection, and maintenance programs requires additional resources, particularly in skilled trades and technical positions.

Enhanced Oversight and Support Functions: The growth in project volume and workforce size requires strengthening support functions such as system operations, contractor management, project execution planning, and leadership to ensure efficient and safe operations.

Technological Advancement and Digital Transformation: The increasing complexity of IT and OT systems, cyber security needs, and digital customer experience enhancements drive the demand for specialized IT expertise.

Increased Regulatory and Compliance Demands: Growing safety training, business continuity, sustainability initiatives, and complex regulatory requirements necessitate dedicated compliance and policy resources.

Strengthening Internal Support Structures: Increased recruitment, HR technology evolution, and complex financial reporting drive the need for expanded HR and finance support.

As highlighted in Schedule 4-1-3 - Workforce Staffing and Compensation, the percentage of work being completed by external contractors has remained relatively stable at 44-46% of total gross capital expenditures, from 2021-2025 through to the 2026-2030 projections. This consistency indicates that Hydro Ottawa is effectively managing its contractor usage while

prioritizing the addition of permanent staff to address both immediate and long-term needs. It is anticipated that this increased staffing will be necessary not only for the next few rate cycles, but also in the decades beyond, as these challenges are expected to persist and evolve.

3. CAPITAL EXPENDITURE PLAN

Hydro Ottawa is embarking on a period of transformative growth, with a proposed capital expenditure plan for 2026-2030 that nearly doubles the investment of the previous five years. This plan prioritizes system capacity enhancements, the renewal of deteriorating infrastructure, grid modernization, and bolstering overall resilience. Please refer to Table 5 for details on the historical Capital Expenditure Plan and Table 6 for details of the 2026-2030 proposed Capital Expenditure plan. Refer to Schedule 2-5-5 - Capital Expenditure Plan for further details on the historical and planned capital expenditures. The $102.8M variance between Hydro Ottawa's expected net capital expenditures and the OEB-Approved amounts is explained in Section 4 of Schedule 2-5-5 - Capital Expenditure Plan.

Table 5 - Capital Expenditure Historical Year Summary ($'000 000s)

Investment Category	Historical Years			Bridge Years		Total
	2021	2022	2023	2024	2025	2021-2025
System Access	$ 48	$ 47	$ 53	$ 69	$ 76	$ 293
System Renewal	$ 43	$ 65	$ 40	$ 42	$ 41	$ 232
System Service	$ 24	$ 14	$ 17	$ 47	$ 60	$ 161
General Plant	$ 24	$ 11	$ 13	$ 15	$ 13	$ 76
TOTAL CAPITAL EXPENTIDURES	**$ 139**	**$ 138**	**$ 123**	**$ 173**	**$ 189**	**$ 762**
Capital Contributions	$ (27)	$ (28)	$ (29)	$ (37)	$ (41)	$ (162)
NET CAPITAL EXPENDITURES	**$ 112**	**$ 110**	**$ 94**	**$ 136**	**$ 148**	**$ 600**

Table 6 - Capital Expenditure Test Year Summary ($'000 000s)

Investment Category	Test Years					Total
	2026	2027	2028	2029	2030	2026-2030
System Access	$ 86	$ 79	$ 66	$ 67	$ 71	$ 369
System Renewal	$ 85	$ 83	$ 81	$ 87	$ 95	$ 432
System Service	$ 99	$ 125	$ 76	$ 86	$ 87	$ 473
General Plant	$ 38	$ 24	$ 33	$ 28	$ 11	$ 134
Total Capital Expenditures	**$ 309**	**$ 311**	**$ 256**	**$ 268**	**$ 265**	**$ 1,409**
Capital Contributions	$ (51)	$ (51)	$ (38)	$ (32)	$ (41)	$ (213)
Net Capital Expenditures	**$ 258**	**$ 260**	**$ 218**	**$ 235**	**$ 224**	**$ 1,195**

The largest variance between the 2021-2025 and 2026-2030 plans is seen in the increased investment in System Service, driven primarily by capacity upgrades. This is followed by increased investment in System Renewal, primarily for station equipment renewal. System Access also sees increased investment, driven by rising customer connections. Finally, General Plant expenditures are higher, primarily due to Connection and Cost Recovery Agreements for capacity upgrades and Fleet Replacement. The following sections provide a detailed breakdown of the changes in expenditures, summarizing the investment by category and capital program.

3.1. SYSTEM ACCESS

Spending on System Access, necessary to support growth and electrification, is expected to increase during the 2026-2030 period by 26% compared to the 2021-2025 timeframe. Projected capital investments are expected to rise from $293M in the 2021-2025 period to $369M in the 2026-2030 period, excluding Capital Contributions as shown in Table 7. This increase is primarily attributed to the growing number and complexity of customer connections, reflected in the higher expenditures for the Customer Connections and System Expansion Capital programs. This growth in expenditures is partially offset by a projected decrease in Plant

Relocation costs. See Schedule 2-5-5 - Capital Expenditure Plan and Schedule 2-5-6 - System Access Investments for further breakdown of the System Access capital investments.

Table 7 - System Access Capital Expenditure Variance by Capital Program 2021-2025 DSP vs. 2026-2030 DSP ($'000 000s)

Capital Program	Historical / Bridge Years	Test Years	Variance
	2021-2025	2026-2030	
Plant Relocation	$ 45	$ 35	$ (10)
System Expansion	$ 89	$ 108	$ 19
Customer Connections	$ 157	$ 221	$ 64
Generation Connections	$ 1	$ 4	$ 4
Metering	$ 2	$ 2	-
Total Capital Expenditures	**$ 293**	**$ 369**	**$ 77**
Capital Contributions	$ (158)	$ (196)	$ (38)
Net Capital Expenditures	**$ 134**	**$ 173**	**$ 39**

The Capital Programs encompassed within the System Access investment category are detailed below.

Plant Relocation & Upgrade

The capital investment for this program is detailed in Section 2 of Schedule 2-5-6 - System Access Investments. This program funds the relocation or upgrade of Hydro Ottawa-owned or joint-use overhead or underground equipment for third-party infrastructure projects, primarily by the City of Ottawa. This is driven by road widening and other development projects that conflict with existing Hydro Ottawa infrastructure. The program aims to meet regulations, improve system efficiency, and enable economic development. Spending from 2026-2030 is projected to decrease relative to 2021-2025, due to the completion of the City of Ottawa's Light Rail Transit

Phase II project. The 2026-2030 program is budgeted based on planned road widening projects outlined in the City of Ottawa's Transportation Master Plan[24].

System Expansion

The capital investment for this program is detailed in Section 4 of Schedule 2-5-6 - System Access Investments. System expansions are initiated when capacity constraints in Hydro Ottawa's infrastructure necessitate upgrades or additions to accommodate new customers or support existing customer service upgrades. Investments may involve upgrading feeders, transformers, or substations to ensure reliable power supply. Driven by customer service requests, particularly the growing number of large load requests, and Hydro Ottawa's legal obligation to fulfill connection requests, this program aims to ensure timely and efficient customer connections.

The System Expansion program is experiencing significant growth due to the current expansion efforts focused on major infrastructure projects such as the Hydro Road substation for OC Transpo's Zero Emission Buses, the Richmond South substation upgrade to support the DND Dwyer Hill Training Center, and feeder expansions for projects including the Ottawa Hospital's new campus, among others. These projects highlight the growing complexity and scale of distribution system expansion required to meet community energy demands.

Customer Connections

The capital investment for this program is detailed in Section 3 of Schedule 2-5-6 - System Access Investments. This program ensures new and modified customer connections, including residential subdivisions (townhomes, semi-detached, singles, or mixed), commercial developments (underground or vault equipment service), and infill services, are seamlessly integrated into the distribution grid, fulfilling mandated service obligations. The program involves

[24] City of Ottawa, "Transportation Master Plan, Exhibit 7.2: 2031 Affordable Road Network- Project By Phase- https://documents.ottawa.ca/sites/default/files/documents/tmp_en.pdf

installing transformers, lines, switchgear, and metering infrastructure, and may require roadwork and civil works.

The projected increase in this program is a direct result of sustained regional growth and development. This growth is fueled by residential subdivision expansion, commercial development aligned with transit-oriented projects and large load requests, and ongoing infill projects. Key factors to the increase include the City of Ottawa's intensification policies, the energy transition, and the rise of large-scale laboratory developments, all contributing to more complex and larger connection requests. The program focuses on meeting customer connection timelines while adhering to regulations. Two examples of budgeted large and complex commercial customer connections are the Regulatory and Security Science main project at the CFIA facility and the TerraCanada National Capital Area project at the National Research Council facilities.

Generation Connections

The capital investment for this program is detailed in Section 5 of Schedule 2-5-6 - System Access Investments. Hydro Ottawa's Generations Connections program facilitates integrating customer owned DERs into the distribution grid, complying with regulations and ensuring system reliability and safety. The program covers infrastructure upgrades and streamlined connection processes.

The increase in spending is planned to support the anticipated rise in DER adoption driven by enablement programs between 2026 and 2030 as well as the growing number of committed and planned customer generation projects. Notably, there is one large DER connection (over 500 kW) forecasted each year from 2026-2030 in support of the increasing trend of DER connections, see Figure 13 - DER Annual Requests Count 2021-2024. The IESO's DER Market Vision and Design Project[25] is expected to explore, design and implement foundational

[25] DER Market Vision and Design Project, https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Distributed-Energy-Resources-Market-Vision-and-Design-Project

participation models for DERs in Ontario's electricity market and other IESO programs, such as the Save On Energy Home Renovation Savings Program[26] and the Save On Energy Retrofit Program[27] now include incentives for DERs. All these initiatives are expected to contribute to DER growth. The projected trend of accelerated DER adoption is further detailed in Section 9.3.2 of Schedule 2-5-4 - Asset Management Process.

Metering

The capital investment for this program is detailed in Section 6 of Schedule 2-5-6 - System Access Investments. Hydro Ottawa's Metering Program invests in metering technology, including Suite Metering for multi-unit buildings. The projected investment in revenue meter installations and retrofits is consistent with historical investment levels. Hydro Ottawa anticipates no substantial alterations to customer-initiated installations of new and retrofitted suite metering.

3.2. SYSTEM RENEWAL

The System Renewal investment category allocates spending to mitigate critical system risks stemming from aging and deteriorating assets. This includes replacing assets that pose significant reliability risks, upgrading systems, and replacing obsolete equipment to maintain system reliability, enhance efficiency and resilience, and ensure the continued delivery of safe and reliable electricity service.

Projected capital investment for System Renewal is expected to increase by 86% compared to the $232M in the 2021-2025 period, vs. $432M in the 2026-2030 timeframe. The significant increase in capital investment is primarily driven by the investments in station equipment renewals, guided by Predictive Analytics-driven risk assessments and the strategic replacement of the obsolete metering fleet.

[26] Save On Energy, "Home Renovation Savings Program, "https://www.saveonenergy.ca/For-Your-Home/Home-Renovation-Savings
[27] Save On Energy,"Retrofit Program," https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Retrofit-Program

The implementation of Predictive Analytics and improved asset failure curves have resulted in a more comprehensive assessment of system risk associated with the deteriorating asset condition, please refer to Section 4.4 of Schedule 2-5-4 - Asset Management Process for additional information. This has informed the need for increased investment to renew high-risk station assets, followed by underground and overhead assets. The staged renewal of the obsolete metering population is the second highest contributor to the increased investment under System Renewal. Table 8 outlines the System Renewal program expenditures by the five associated capital programs. See Schedule 2-5-5 - Capital Expenditure Plan and Schedule 2-5-7 - System Renewal Investments for further breakdown of the System Renewal capital investments.

Table 8 - System Renewal Capital Expenditure Variance by Capital Program 2021-2025 DSP vs. 2026-2030 DSP ($'000 000s)

Capital Program	Historical / Bridge Years	Test Years	Variance
	2021-2025	2026-2030	
Stations & Bldgs Infra Renewal	$ 31	$ 108	$ 76
OH Distribution Asset Renewal	$ 43	$ 68	$ 25
UG Distribution Assets Renewal	$ 63	$ 103	$ 40
Corrective Renewal	$ 83	$ 67	$ (16)
Metering Renewal	$ 12	$ 86	$ 75
Total Capital Expenditures	**$ 232**	**$ 432**	**$ 199**
Capital Contributions	-	-	-
Net Capital Expenditures	**$ 232**	**$ 432**	**$ 199**

The Capital Programs encompassed within the System Renewal investment category are detailed below.

Stations and Buildings Infrastructure Renewal

The capital investment for this program is detailed in Section 2 of Schedule 2-5-7 - System Renewal Investments. Hydro Ottawa's Station and Buildings Infrastructure Renewal Program invests in upgrading and replacing deteriorating assets for stations and station buildings to maintain system reliability and safety. These assets include station transformers, station switchgear, batteries, protection and control systems (Relays and Remote Terminal Units (RTUs)), and other minor assets such as reclosers, insulators, arresters, online monitoring equipment and station building roofs. The Stations and Buildings Infrastructure Renewal program investments are driven by asset condition and risk assessments. These assessments are conducted through the distribution asset model within Copperleaf Predictive Analytics (PA), as detailed in Section 5.1.4 of Schedule 2-5-4 - Asset Management Process.

The primary cost driver for the 2026-2030 Stations and Buildings Infrastructure Renewal program is the decommissioning of five high-risk 4kV substations through voltage conversion, undertaken to accommodate anticipated system growth. A secondary, yet significant, cost driver is the renewal of high-risk station breakers at four locations, identified through Predictive Analytics. Deteriorating substation assets within the Stations and Buildings infrastructure represent the most substantial risk to system performance. These critical assets serve a large customer base and provide essential system flexibility and backup capacity. Proactive asset replacement is therefore imperative to mitigate the elevated costs and risks associated with reactive repairs. This is particularly crucial within the 4kV system, where the radial distribution network configuration severely limits restoration capabilities in the event of substation asset failures.

OH Distribution Assets Renewal

The capital investment for this program is detailed in Section 3 of Schedule 2-5-7 - System Renewal Investments. This program focuses on the renewal of overhead distribution infrastructure, which encompasses poles, OH transformers, OH switches and OH reclosers. The investments in the Overhead Distribution Assets Renewal program are driven by asset condition

and risk assessments. These assessments are conducted through the distribution asset model within Copperleaf Predictive Analytics, as detailed in Section 5.1.4 of Schedule 2-5-4 - Asset Management Process.

The expected increase to the pole renewal cost supports the annual replacement of 395 poles, aligning with the 2021-2025 period replacement rate of 400 poles. This projection reflects the increased cost per pole observed in the previous period and incorporates system resilience improvements within the renewed design. Overhead transformer replacement costs are also included in this program.

The expected costs for OH Switch/Recloser Renewal is a direct response to the deteriorating infrastructure, which has resulted in elevated outage rates and corrective maintenance costs during the 2021-2025 period, as detailed in Section 3.3.4 of Schedule 2-5-7 - System Renewal Investments. Project scoping within the OH Switch Renewal Program will also contemplate incremental investments that enhance the observability of the system.

UG Distribution Assets Renewal

The capital investment for this program is detailed in Section 4 of Schedule 2-5-7 - System Renewal Investments. This program replaces deteriorating underground distribution assets, including cables, UG transformers, and UG switchgear, civil infrastructure and vault equipment. Investments in this area are essential for maintaining the reliability and resilience of the underground network and are driven by asset condition and risk assessments. These assessments are conducted through the distribution asset model within Copperleaf Predictive Analytics (PA), as detailed in Section 5.1.4 of Schedule 2-5-4 - Asset Management Process.

The increased capital investment within this program is primarily attributed to escalating per-unit costs associated with the cable replacement program. Despite a slight decrease in the projected cable units to be replaced compared to the previous period, significant price increases are

anticipated due to forecasted material and external service costs. The impacts of the inflationary pressures on Hydro Ottawa are detailed in Schedule 1-2-5 - Impacts of Inflationary Pressure.

Corrective Renewal

The capital investment for this program is detailed in Section 6 of Schedule 2-5-7 - System Renewal Investments. This program addresses the replacement of assets that have degraded to a point of functional failure and pose an imminent failure risk, or have been damaged by third parties. While prioritizing proactive renewal, Hydro Ottawa also recognizes the need for reactive measures to maintain system integrity and address unexpected failures.

The drastic variance in capital investment for the 2026-2030 period compared to the actual expenditures in 2021-2025 period, is primarily attributed to the unusually high number and severity of Major Event Days (MEDs) experienced in the 2021-2025 period. It is assumed that the 2021-2025 MED frequency and intensity represents an anomaly. Therefore, the 2026-2030 forecast is more accurate compared to the 2021-2025 OEB-Approved amount.

A net increase in spending is observed in the 2026-2030 budget relative to the 2021-2025 OEB-Approved budget, due to cost escalations and the increasing impact of climate change on the electrical distribution system. While a discrete event of the magnitude of the 2022 Derecho is not explicitly forecast, the growing frequency and intensity of severe weather events necessitate sustained and strategic investment in infrastructure resilience. This imperative is reflected in the 2026-2030 forecasted capital investment in this program.

Metering Renewal

The capital investment for this program is detailed in Section 5 of Schedule 2-5-7 - System Renewal Investments. This program involves upgrading and replacing functionally obsolete metering infrastructure to support advanced metering functionality and improve system monitoring capabilities. The increase in spending in this category as compared to the previous

period is to begin upgrading the metering fleet to Advanced Metering Infrastructure (AMI) 2.0 meters.

Hydro Ottawa's AMI 2.0 Metering Renewal Project aims to replace end-of-life meters with technology to empower customers with data-driven insights and tools for greater engagement and control over their energy usage. This initiative aligns to grid modernization objectives by facilitating improved grid visibility and interoperability, which is a key to enhancing reliability and efficiency. The project encompasses the replacement of existing meters, upgrades to the head-end system and data management platform, and potential deployment of complementary grid-edge devices. Phased over 2026-2035, the project begins with comprehensive planning and vendor selection, emphasizing open standards and interoperability. Rigorous testing and cyber security measures will ensure a smooth transition. Deployment will be phased, integrating with existing systems and prioritizing staff training. Ongoing evaluation will identify optimization opportunities, maximizing the system's benefits while ensuring cost-effectiveness. Risk mitigation strategies addressing reliability, safety, financial, environmental, and compliance concerns will be implemented throughout the project.

3.3. SYSTEM SERVICE

The System Service investment category allocates spending to increase capacity of the distribution system to meet forecasted demand, improve system reliability and resilience, and increase grid modernization in the distribution system.

Spending under this investment category is escalating by 194% from $161M in the 2021-2025 period to $473M in the 2026-2030 timeframe. The increase is primarily driven by the Capacity Upgrades program, which addresses growing capacity needs due to customer growth and electrification. Increased spending in the Distribution Enhancements program also contributes, with a focus on two new budget programs for Distribution System Observability and Distribution System Resilience. Finally, the Field Area Network Program drives further increases with investments in fiber extensions and wireless communication, as detailed in Table 9. See

Schedule 2-5-5 - Capital Expenditure Plan and Schedule 2-5-8 - System Service Investments for further breakdown of the System Service capital investments.

Table 9 - System Service Capital Expenditure Variance by Capital Program 2021-2025 DSP vs. 2026-2030 DSP ($'000 000s)

Capital Program	Historical / Bridge Years	Test Years	Variance
	2021-2025	2026-2030	
Capacity Upgrades	$ 108	$ 347	$ 239
Stations Enhancements	$ 3	$ 3	$ 0
Distribution Enhancements	$ 28	$ 93	$ 65
Grid Technologies	$ 21	$ 6	$ (14)
Control and Optimization	-	$ 4	$ 4
Field Area Network	$ 2	$ 21	$ 19
Total Capital Expenditures	**$ 161**	**$ 473**	**$ 312**
Capital Contributions	-	$ (4)	$ (4)
Net Capital Expenditures	**$ 161**	**$ 469**	**$ 308**

The Capital Programs encompassed within the System Service investment category are detailed below.

Capacity Upgrades

The capital investment for this program is detailed in Section 2 of Schedule 2-5-8 - System Service Investments. The capacity upgrades program addresses system capacity needs through station capacity, distribution capacity and non-wire capacity upgrades. System capacity needs and required upgrades are determined through the System Capacity Assessment as outlined in Section 9 of Schedule 2-5-4 - Asset Management Process and Integrated Regional Resource Planning as detailed in Section 4 of Schedule 2-5-2 - Coordinated Planning with Third Parties.

Station capacity upgrades, designed to meet forecasted demand, focus on expanding existing Hydro Ottawa substations or the construction of new facilities. The primary reason for the increase to the Capacity Upgrades program capital budget is the planned investment in Station Capacity Upgrades for the 2026-2030 period. This need has been identified through Regional Planning, please refer to Section 4 of Schedule 2-5-2 - Coordinated Planning with Third Parties, and is based on forecasted system requirements. The 2026-2030 plan includes the construction of four new stations: Piperville, Mer Bleue, Greenbank, and Kanata North, and upgrading three existing stations: Riverdale, Cyrville, and Bronson.

To fully utilize the increased capacity provided by the station projects, the distribution capacity upgrades program will enhance the electrical distribution network through feeder expansion and upgrades. This program accounts for the second largest increase in the Capacity Upgrades program budget for 2026-2030. This increase is primarily driven by a greater number of feeder integration projects required to support the planned construction of the four new stations and the planned upgrade of three existing stations identified previously.

The Non-Wires Capacity Upgrade is a new program which accounts for the remaining expected increase in the Capacity Upgrades program for 2026-2030. It aims to improve grid capacity and reliability by implementing alternatives to traditional infrastructure upgrades, such as utility owned battery energy storage solutions (BESS) and Non-Wires Customer Solutions Program. The program's primary focus is on five constrained regions utilizing four BESS in combination with the Non-Wires Customer Solutions Program. These solutions are being strategically deployed in areas that meet one of the following criteria: stations requiring near-term capacity risk mitigation, distribution-connected stations with forecasted overloads of less than 7.5MVA by 2030, or areas projected to exceed capacity by 2030 and are experiencing transmission system constraints, please see Section 9.2 of Schedule 2-5-4 - Asset Management Process.

Based on a thorough analysis of the needs identified for each of the Hydro Ottawa planning regions described in Section 9.1.4 of Schedule 2-5-4 - Asset Management Process it has been

determined that the majority of these needs will require wire solutions, meaning upgrades and expansions to the physical grid infrastructure. While NWSs are not expected to cause substantial avoidance or deferral of the identified wire capacity investment needs, they will play a crucial role in moderating the pace of system demand growth and enhancing reliability in the 2026-2030 period, while continuing to support the grid in the long term. This moderation will provide Hydro Ottawa with the lead time to construct the necessary long-term grid infrastructure solutions that are in harmony with the evolving system demand. There are three scenarios identified where NWSs would have the greatest potential in supporting capacity needs: please refer to Section 9.2 of Schedule 2-5-4 - Asset Management Process for more information.

Stations Enhancements

The capital investment for this program is detailed in Section 4 of Schedule 2-5-8 - System Service Investments. This program will improve distribution system observability and operability through cyber security investments and station modifications, including enhanced monitoring. Specifically, online transformer monitoring will proactively identify faults, improving asset observability and reliability by reducing unexpected failures. Addressing vulnerabilities, the program will also bolster cyber security at substations, improving threat detection and response to prevent disruptions and maintain reliable power delivery.

Distribution Enhancements

The capital investment for this program is detailed in Section 3 of Schedule 2-5-8 - System Service Investments. The Distribution Enhancement program modernizes the grid and addresses climate change risks through four programs: Distribution System Reliability, Distribution System Enhancements, Distribution System Resilience and Distribution System Observability. The Distribution System Reliability program improves efficiency and reliability through feeder reconfiguration and phase balancing. The Distribution System Enhancements program supports DER integration through infrastructure upgrades and pilot projects, leveraging federal funding for innovation. The Distribution System Resilience program strengthens weather resilience with strategic undergrounding, storm hardening, and line relocation, aligning with the

OEB's VASH initiative. The Distribution System Observability program enhances grid management through real-time data and remote switching improving reliability and flexibility.

The increased investment compared to the total in the 2021-2025 period is driven by the creation of the new Distribution System Observability and Distribution System Resilience programs. The Distribution System Observability program aims to enhance system reliability and reduce outage times by investing in new assets that provide real-time data on system conditions, loading, and fault locations, enabling proactive maintenance and faster response to issues. The Distribution System Resilience program focuses on mitigating the impact of adverse weather events through strategic undergrounding of lines, reinforcement of existing infrastructure, reconfiguration of feeders, and relocation of lines to less vulnerable areas.

Grid Technologies

The capital investment for this program is detailed in Section 5 of Schedule 2-5-8 - System Service Investments. This program modernizes grid management by enhancing observability and controllability through data acquisition, monitoring, and control capabilities. Focusing on ADMS, it enhances grid troubleshooting and asset monitoring, supporting data-driven decisions for preventative and predictive maintenance, and integrating with other systems. Driven by system efficiency, it addresses integration complexities, optimizes data handling, enhances reliability and security, and improves performance through a unified platform, seamless data exchange, and simplified maintenance. This upgrade reduces single points of failure, strengthens cyber security, and enables advanced analytics for better grid management.

Control and Optimization

Capital investment details are available in Section 7 of Schedule 2-5-8 - System Service Investments. This program focuses on Distributed Energy Resources Management Systems (DERMS) implementation to manage the growing complexity of DERs, improving grid stability, reliability, efficiency, and resilience. This program aims to improve operational effectiveness by increasing DER visibility and control, and improving grid efficiency. The Control and

Optimization program is a new capital program under System Service supporting grid modernization efforts by enhancing the Advanced Distribution Management System (ADMS) with new modules like the Distributed Energy Resource Management System (DERMS). These upgrades enable several grid modernization functionalities in tandem with observability and controllability devices facilitating the improvement of grid stability, efficiency, and resilience, enabling better grid management and real-time outage restoration.

Field Area Network

The capital investment for this program is detailed in Section 6 of Schedule 2-5-8 - System Service Investments. The Field Area Network (FAN) program is essential for Hydro Ottawa's digital and grid modernization, providing the communication backbone for grid devices and central systems.

Four key initiatives—Optical Transport Network (OTN) Fiber Network Resilience, Wireless Communication Private Long-Term Evolution (PLTE) pilot), Intelligent Electronic Device Management, and OTN cyber security—enhance reliability, security, and efficiency. Driven by system efficiency, the FAN enables real-time data access for grid modernization and DER integration, strengthens cyber security, and improves outage response by providing grid visibility and control.

3.4. GENERAL PLANT

The General Plant category encompasses a diverse set of capital programs essential for maintaining and advancing Hydro Ottawa's IT and facility infrastructure, operational capabilities, and customer service excellence. These investments address areas such as facility infrastructure, fleet renewal, IT and cyber security infrastructure, and customer engagement. By upgrading deteriorating systems, introducing advanced technologies, and enhancing operational facilities, these programs ensure Hydro Ottawa remains well-equipped to meet evolving industry demands, regulatory requirements, and customer expectations. The planned initiatives support

strategic goals like grid modernization, sustainability, and workforce readiness while promoting efficiency, innovation, and resilience in Hydro Ottawa's operations.

Expenditure under this investment category is increasing by 75% from $76M in the 2021-2025 period to $134M the 2026-2030 period. The primary driver for this increase is due to increased funding under the Connection Cost Recovery Agreement (CCRA) program required to support the increased number of transmission upgrades required to service new and upgraded stations. An increase in the Fleet Replacement program is driven by the need to replace vehicles that have reached end of useful life and for additional vehicles required to support the increase in planned workforce, as indicated in Table 10. See Schedule 2-5-5 - Capital Expenditure Plan and Schedule 2-5-9 - General Plant Investments for further breakdown of the General Plant capital expenditure program.

Table 10 - General Plant Capital Expenditure Variance by Capital Program 2021-2025 DSP vs. 2026-2030 DSP ($'000 000s)[28]

Capital Program	Historical / Bridge Years	Test Years	Variance
	2021-2025	2026-2030	
CCRA	$ 17	$ 46	$ 29
Fleet Replacement	$ 18	$ 41	$ 23
Tools Replacement	$ 3	$ 5	$ 2
Buildings - Facilities	$ 7	$ 7	$ (1)
Grid Technology	$ 2	$ 4	$ 2
Meter to Cash	$ 4	$ 9	$ 5
Customer Engagement Platform	$ 7	$ 3	$ (5)
Enterprise Solutions	$ 6	$ 1	$ (4)
Infrastructure and Cyber Security	$ 11	$ 15	$ 4
Data and System Integrations	$ 2	$ 3	$ 2
Total Capital Expenditures	**$ 76**	**$ 134**	**$ 57**
Capital Contributions	$ (4)	$ (13)	$ (9)
Net Capital Expenditures	**$ 73**	**$ 121**	**$ 48**

The Capital Programs encompassed within the General Plant investment category are detailed below.

CCRA - Connection Cost Recovery Agreement

The capital investment for this program is detailed in Section 7 of Schedule 2-5-9 - General Plant Investments. The CCRA program funds Hydro Ottawa's share of transmission infrastructure upgrades, determined through system capacity assessments. These upgrades include connections for new and upgraded stations and addressing equipment limitations at Hydro One Networks Inc. (Hydro One)-owned stations. Hydro Ottawa contributes to the costs of these upgrades, ensuring grid reliability and supporting growth. Key projects include new

[28] Totals may not sum due to rounding.

stations (Hydro Road, Mer Bleue, Kanata North, Greenbank) and upgrades to existing stations (Cyrville, Bronson, Carling, King Edward, Hinchey). This investment will increase station capacity by over 811MVA, improving DER hosting capacity and reliability, and supporting customer growth. Driven by the need to address capacity constraints, the CCRA program responds to load requests and without these investments Hydro Ottawa may not be able to meet future demand.

Fleet Replacement

The capital investment for this program is detailed in Section 11 of Schedule 2-5-9 - General Plant Investments. This program plans for additional vehicles required for increased staffing needs as well as replacing aging vehicles with modern, efficient alternatives to support safety and operational needs and to reduce carbon emissions. Over the 2026-2030 rate period, a total of 140 vehicles at a cost of $41M are planned to be purchased in order to replace vehicles at the end of their useful lives and account for additional vehicles required to support workforce growth.

Tools Replacement

The capital investment for this program is detailed in Section 9 of Schedule 2-5-9 - General Plant Investments. This program updates and replaces outdated equipment and tools to enhance operational efficiency, support field staff, and improve safety. The program ensures workforce readiness and aligns with modern operational standards.

Buildings - Facilities

The capital investment for this program is detailed in Section 10 of Schedule 2-5-9 - General Plant Investments. This program focuses on maintaining and upgrading office and administrative facilities to support workforce needs, improving energy efficiency, and providing a safe working environment. These investments also align with Hydro Ottawa's sustainability goals and level of organizational growth.

Grid Technology

The capital investment for this program is detailed in Section 6 of Schedule 2-5-9 - General Plant Investments. This program addresses the maintenance and upgrade of tools and software that support modernization of grid operations, integrate new technologies like DERs and support grid planning. The program focuses on network visualization and management, data collection and network modelling and simulation.

Meter to Cash

The capital investment for this program is detailed in Section 2 of Schedule 2-5-9 - General Plant Investments. This program supports critical business functions such as billing, meter reading, collections, and reporting. Upcoming upgrades to systems like Oracle's Customer Care & Billing (CC&B) and AMI aim to ensure compliance, improve customer self-service options, and address end of life infrastructure.

Customer Engagement Platform

The capital investment for this program is detailed in Section 3 of Schedule 2-5-9 - General Plant Investments. This program encompasses tools such as MyAccount, outage communication systems, Hydro Ottawa's website, and energy management tools. It prioritizes enabling intuitive self-service, delivering detailed energy insights, and enhancing customer satisfaction through seamless digital experiences. Furthermore, these digital platforms enable Hydro Ottawa to gather valuable customer insights that can also be used to enhance customer experience, inform grid planning, and identify opportunities for future NWSs and customer programming.

Enterprise Solutions

The capital investment for this program is detailed in Section 4 of Schedule 2-5-9 - General Plant Investments. This program focuses on maintaining and upgrading applications such as Enterprise Resource Planning (ERP) and IT Service Management systems. These enhancements ensure business continuity, streamline workflows, and reduce cyber security

risks. Over the rate period, the program includes business continuity software and expanding self-service HR capabilities.

Infrastructure & Cyber security

The capital investment for this program is detailed in Section 8 of Schedule 2-5-9 - General Plant Investments. This program invests in strengthening IT systems to protect against cyber threats, maintain data integrity, and support business continuity. The program aims to ensure systems are secure, scalable, and aligned with industry best practices to safeguard critical infrastructure.

Data and System Integrations

The capital investment for this program is detailed in Section 5 of Schedule 2-5-9 - General Plant Investments. This program consolidates fragmented data systems to create an integrated, reliable, and efficient framework. It aims to reduce manual interventions, enable real-time decision-making, and ensure compatibility across platforms to support both operational and strategic initiatives.

4. OUTCOMES AND PERFORMANCE MEASURES

Hydro Ottawa's proposed performance framework for the 2026-2030 DSP emphasizes a direct and transparent approach to monitoring and reporting. The framework aligns with the OEB performance outcomes:

- **Customer Focus:** Prioritizing connection efficiency, grid reliability, customer engagement, and technological advancements to enhance customer satisfaction.
- **Operational Effectiveness:** Leveraging grid modernization, asset management, customer-centric operations, and workplace safety to optimize performance.
- **Public Policy Responsiveness:** Ensuring regulatory compliance, grid modernization planning, safety, and reliability to meet public policy goals.

- **Financial Performance:** Focusing on resource optimization, grid reliability with integrated DERs, data-driven decision making, and long-term financial sustainability.

Hydro Ottawa will measure performance through specific outcomes linked to Material Investment Plans (MIPs) in four investment categories: System Access, System Renewal, System Services, and General Plant. This approach ensures that investments and initiatives are strategically aligned, customer-focused, and financially responsible. The framework will enable Hydro Ottawa to effectively track progress, evaluate planning, improve operations, and identify areas for enhancement, ultimately delivering better service to customers. Refer to Schedule 2-5-3 - Performance Measurement for Continuous Improvement for full details on outcomes and performance measures.

5. OVERVIEW OF DOCUMENTS

The complete 2026-2030 DSP is included in Schedules 2-5-1 to 2-5-9 of this Application submission. It consists of nine schedules, which are outlined below and mapped back to the Chapter 5 Filing Requirement as shown in Table 11.

Table 11 - DSP Schedules Mapping to OEB Chapter 5 Filing Requirements

OEB Chapter 5 Filing Requirements- Sections	DSP Schedule
5.2.1 – Distribution System Plan Overview	2-5-1
5.2.2 – Coordinated Planning with Third parties	2-5-2
5.2.3 – Performance Measurement for Continuous Improvement	2-5-3
5.3 – Asset Management Process	2-5-4
5.4 – Capital Expenditure Plan	2-5-5 2-5-6 2-5-7 2-5-8 2-5-9

DSP Schedules:

- **Schedule 2-5-1 - Distribution System Plan Overview**

  This schedule provides a comprehensive overview of the DSP, including an outline of the key elements of the plan, and highlights important changes. It also details the 2026-2030 capital expenditure plan, aligned with Investment Priorities, and how customer preferences and expectations were incorporated into forming the Focus Areas and validating the Investment Priorities. The chapter also provides an overview of the outcomes and performance measures used to track the plan's progress and outlines the structure of the DSP documents, period, and vintage of information.

- **Schedule 2-5-2 - Coordinated Planning with Third Parties**

  This schedule examines how the DSP coordinates with customers and stakeholders. It covers:

- Customer Coordination: Outlines the various methods of customer engagement, including consultations, requests, and open houses, used to inform investment planning and ensure the DSP reflects customer priorities.
- Regional Planning: Details the collaborative regional planning process among the IESO, Hydro Ottawa, and Hydro One to ensure a reliable, cost-effective, and sustainable electricity supply for the region.
- Telecommunication Entities: Explains Hydro Ottawa's relationship with telecommunication companies, focusing on the attachment process and agreements for infrastructure sharing.
- Other Utility and Stakeholder Coordination: Describes Hydro Ottawa's coordination with various utilities and stakeholders, including the City of Ottawa, contractors, and industry groups, to ensure efficient and safe operations.
- Planning Coordination Effects on DSP: Discusses how effective planning coordination among various stakeholders is crucial for the successful planning of the distribution system, ensuring alignment, minimizing conflicts, and addressing diverse needs.

- **Schedule 2-5-3 - Performance Measurement for Continuous Improvement**

  This schedule outlines Hydro Ottawa's performance measurement framework, aligned with the OEB guidelines. It covers:

  - Historic (2021-2025) DSP Performance: Presents historical KPI data and explains the results of performance across customer, costs, asset, and system operations.
  - Historical Reliability Performance: Provides a detailed analysis of Hydro Ottawa's reliability performance trends, including SAIDI and SAIFI.
  - Continuous Improvement: Discusses ongoing efforts to enhance performance based on data analysis and feedback.

- Performance Measurement Framework: Details the framework used to measure and monitor the performance across various system areas of the DSP.

- **Schedule 2-5-4 - Asset Management Process**

  This schedule provides an in-depth look at asset management within the DSP. It covers:

  - Planning Process: Describes Hydro Ottawa's integrated business planning process, including strategic objectives, customer engagement, and the development of core business strategies that guide investment plans.
  - Asset Management Overview: Presents Hydro Ottawa's Asset Management System, its certification, scope, strategy, objectives, process overview, and process enhancements.
  - Asset Management Process: Explains the detailed, four-stage asset management process (prepare, plan, optimize, execute) used by Hydro Ottawa to manage its assets and planned expenditures.
  - Overview of Assets Managed: Details the various assets managed by Hydro Ottawa, including their demographics, condition, failure rates, risk profiles, and system utilization.
  - Asset Lifecycle Optimization: Describes the policies and practices used by Hydro Ottawa to optimize asset lifecycles, including typical useful life (TUL), replacement/refurbishment policies, and testing inspection and maintenance programs.
  - System Capacity Assessment: Presents Hydro Ottawa's comprehensive assessment of system capacity needs, including load forecasting, NWSs, and the integration of renewable energy resources.

- **Schedule 2-5-5 - Capital Expenditure Plan**

  This schedule provides a comprehensive analysis of capital investments within the DSP, focused on the 2026-2030 period. It covers:

  - Forecast Expenditure: Presents the 2026-2030 forecasted expenditures by investment category, driven by Hydro Ottawa's investment strategy.
  - Historical and Forecast Expenditure Overview: Outlines the variance between the total of 2021-2025 timeframe vs. OEB-Approved amounts, and compares them to the 2026-2030 Capital Expenditure plan.
  - Capital Expenditure Summary: Details the historical performance and forecasted expenditures by investment category, further divided by Capital Program and Budget Program.
  - Impact on Operation and Maintenance Costs: Discusses how capital expenditures affect routine system operation and maintenance costs, including cost reductions.

  Additionally, Capital Programs are described under the following schedules for each Investment Category:

  - Schedule 2-5-6 - System Access Investments
  - Schedule 2-5-7 - System Renewal Investments
  - Schedule 2-5-8 - System Service Investments
  - Schedule 2-5-9 - General Plant Investments

6. DSP PERIOD

The DSP provides capital expenditure plans and supporting information for the 2026-2030 Test Year period, along with Historical and Bridge Year information for 2021-2023 and 2024-2025, respectively.

7. VINTAGE OF INFORMATION

Unless otherwise stated, the information and details provided are based on actual numbers as of December 31, 2023.