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Review of Nova Scotia Power's Five-Year Reliability Plan (2025-2029)

Matter 12558

Prepared for the Nova Scotia Energy Board

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EXECUTIVE SUMMARY

In 2024, the Nova Scotia Energy Board (Board)[1] ordered Nova Scotia Power (NS Power or Company) to file a Five-Year Reliability Plan (Reliability Plan or Plan) in response to several years of under-performance in meeting reliability and other service standards established in 2017. Pursuant to the Board's direction in M11627, the Board established the following purpose and guidelines for the Plan:

> Understand how service improvements will be achieved and against which progress in achieving the performance goals can be tracked. This plan must include specific actions and related timing, demonstrate why these specific investments were selected and quantify the level of reliability or resilience improvement expected from each investment.[2]

While NS Power's Reliability Plan represents an important first step to meet the Board's objectives, Synapse Energy Economics (Synapse) finds there are substantial shortcomings NS Power must address before the Plan provides the level of transparency, analytical support, and performance accountability necessary for the Board and stakeholders to evaluate whether the proposed investments are appropriate and likely to achieve the stated reliability objectives.

The Plan outlines approximately $1.3 billion of proposed investments from 2025–2029 across vegetation management, equipment upgrades and replacement, and grid modernization, yet many of the key analytical elements needed to evaluate and support those investments are either absent or insufficiently developed. As a result, the Plan provides only limited insight into whether the proposed expenditures represent the most effective use of customer funds and whether the estimated reliability improvements are likely to be achieved.

Our key findings are as follows:

- *Future-year investment planning lacks sufficient analytical support.* NS Power based future-year budgets on extrapolations from the first year (2025) plan rather than an assessment of evolving system needs or a forecast of future, known expenditures. Further, the Plan does not adequately demonstrate why the proposed portfolio of expenditures maximizes reliability improvements for each ratepayer dollar.

- *Vegetation management investments warrant greater attention.* Although the Plan identifies vegetation as the primary cause of outages and the largest source of projected reliability improvements, the Plan does not demonstrate why it is reasonable to allocate

[1] In 2025, the Nova Scotia Utility and Review Board transitioned to the Nova Scotia Energy Board. We refer to both entities as the Board.

[2] M11627, p. 13, https://nserbt.ca/sites/default/files/M11627%20Decision%20Letter.pdf.

around 80 percent of total expenditures for equipment upgrades and other non-vegetation management expenditures.

- *The Plan may not adequately prioritize the most cost-effective programs among vegetation management programs.* It is not clear the funding allocation among vegetation management programs maximizes reliability benefits for each ratepayer dollar.

- *Estimates of reliability improvements and diminishing returns are not transparent and are unverifiable.* Forecasted reliability improvements rely primarily on internal judgment and subject matter expertise; NS Power has not provided the underlying methodology or supporting data for independent evaluation of its forecast improvements or diminishing returns assumptions.

- *Cost-effectiveness analysis is insufficient.* NS Power has not clearly demonstrated how it develops cost-effectiveness figures and how it uses this information to influence investment decisions and evaluate alternative solutions. The Company also does not quantitatively assess the benefits and the costs of its Reliability Plan.

- *The Plan does not fully integrate community feedback and other considerations.* While NS Power has established communication pathways with certain vulnerable and Mi'kmaq communities, it is unclear whether and how this communication affects reliability investment priorities.

- *The feeder prioritization framework requires further development.* While Synapse applauds NS Power's development and use of a quantitative framework to prioritize feeders, the methodology does not result in sufficiently differentiated scoring, assess disparities in reliability for vulnerable and priority customers and communities, or clearly demonstrate how feeder rankings influence final investment decisions.

- *The Plan is missing details on consideration of alternative portfolios.* While NS Power states that it considers alternatives in developing its Plan, there is no evidence of this consideration.

- *There are significant capital investments in the Plan that deliver relatively minimal improvements in reliability.* This may harm affordability.

These shortcomings do not diminish the importance of establishing a formal reliability planning process. Rather, they highlight that this first filing can serve as an initial framework that requires refinement in both the short and long-term to evolve from a high-level planning document into a more transparent and data-based investment plan to improve reliability over the next five years.

Accordingly, this report recommends that NS Power strengthen its forward-looking plan for reliability investments by doing the following:

- Develop more robust, forward-looking investment forecasts that reflect changing system needs rather than basing forecasts on a single-year capital plan.

- Provide transparent analyses supporting investment selection, including evaluation of reasonable alternative portfolios.
- Expand and refine its feeder prioritization methodology to better differentiate risk.
- Analyze disparities in reliability for vulnerable and priority customers and communities.
- Develop transparent, data-supported methodologies for estimating reliability improvements and diminishing returns at both the program and feeder or project levels.
- Demonstrate the cost-effectiveness of proposed investments through benefit-cost analysis and clearer documentation of how benefit-cost analysis influences decision-making.
- Better align investment allocations with the primary drivers of outages, particularly vegetation-related reliability issues, or clearly demonstrate the reasoning behind program allocations.
- Improve transparency regarding assumptions, methodologies, expected outcomes, and ongoing measurement of plan performance including deviations from Reliability Plan expenditures and feeder prioritization.
- Better document the source of the climate-related increases in system average interruption duration index (SAIDI) and rationale behind the mitigations and expenditures to address these increases.
- Address resilience-focused investments separately from reliability-focused investments and utilize a more targeted approach for investments intended to improve resilience as these measures may cost more.

Synapse therefore recommends building upon NS Power's current methodologies and developing new and more transparent ways to assess reliability investments before they are implemented, including benefit-cost analysis and feeder/project-level modelling. We do not expect these analyses to be perfectly deterministic of future outcomes once projects are implemented. We do expect these analyses to provide greater transparency into NS Power decision-making and reflect data-driven inputs and assumptions, sound methodologies, and NS Power's best professional judgment, where necessary. Further, these models should be continually improved over time.

The Summary of Findings and Recommendations section provides a summary of all findings and recommendations in this report along with suggested timing for implementation.

Implementing these recommendations would substantially improve the transparency and usefulness of the current and future reliability plans. It would provide the Board and stakeholders with greater confidence that proposed investments are appropriately prioritized, analytically supported, and capable of delivering measurable improvements in reliability consistent with the Board's objectives.

GLOSSARY

Table 1. Glossary of key terms

Terms	Definitions
CAIDI	**Customer Average Interruption Duration Index.** A measure of the duration of electric system outages experienced per customer, calculated by dividing SAIDI by SAIFI. It reflects the average length of time customers who experience outages are without power per interruption.
CKAIDI	**Circuit Average Interruption Duration Index.** The circuit-level equivalent of SAIDI. This index measures the average duration of outages experienced on a specific feeder/circuit, rather than systemwide. It helps identify chronically poor-performing circuits (e.g., a circuit ranking in the worst 5% for outage duration over consecutive years may be flagged as a "chronic circuit").
CKAIFI	**Circuit Average Interruption Frequency Index.** The circuit-level equivalent of system average interruption frequency index (SAIFI). This index measures the average frequency of outages on a specific feeder/circuit. It works alongside CKAIDI to flag chronic circuits if performance falls outside benchmark thresholds (e.g., more than two standard deviations worse than the systemwide average).
EED	**Extreme Event Day.** As defined by IEEE 1366-2012 Standard 3.0 Beta methodology, a day on which the daily cumulative hours of interruption exceed the Extreme Event Threshold. The "3.5 beta" method uses a higher bar than major event day (MED) and is reserved for the most severe storm days.
MED	**Major Event Day.** As defined by IEEE 1366-2012 Standard 2.5 Beta methodology, a day on which the daily cumulative hours of customer interruption exceed the Major Event Threshold. A "Major Event" is a significant weather-related or other disruptive event that results in at least one MED.
SAIDI	**System Average Interruption Duration Index.** A measure of the duration of electric system outages, calculated by dividing the total customer hours of interruption by the total number of customers served. It reflects the average length of time a customer is without power over a year.
SAIFI	**System Average Interruption Frequency Index.** A measure of the frequency of electric system outages, calculated by dividing the total number of customer interruptions by the total number of customers served. It reflects how often, on average, a customer experiences an outage over a year.
SED	**Significant Event Day.** As defined by IEEE 1366-2012 Standard 2.0 Beta methodology, day on which the daily cumulative hours of interruption exceed the Significant Event Threshold. The "2.0 beta" method is the lowest of the three thresholds, capturing days with elevated (but not extreme) outage activity.

INTRODUCTION

In the Board decision on the 2023 Annual Performance Standards (M11624), the Board directed that:

> …a comprehensive written version of NS Power's five-year reliability plan is needed to understand how service improvements will be achieved and against which progress in achieving the performance goals can be tracked. This plan must include specific actions and related timing, demonstrate why these specific investments were selected and quantify the level of reliability or resilience improvement expected from each investment.

The Board retained Synapse Energy Economics (Synapse) to assess NS Power's 2025–2029 Five-Year Reliability Plan and help inform NS Power's 2027 Annual Capital Expenditure Plan filing and the next 2030–2034 Five-Year Reliability Plan. From January to March of 2026, Synapse developed the scope and schedule as part of a Terms of Reference (TOR) for this effort. The Terms of Reference is Appendix A of this report. The report structure aligns with the key areas of inquiry identified in the Terms of Reference. We begin with a background section with context regarding NS Power's reliability performance to date and the regulatory response to that performance. Next, we summarize the Reliability Plan. Then, we evaluate the Reliability Plan with consideration for: (1) Proposed Investments and Investment Alternatives, (2) Feeder Scoring and Prioritization, (3) Reliability Improvement Estimates, (4) Cost-Effectiveness, (5) Affordability, and (6) Resilience. We close with a summary of our findings and recommendations. Appendix B provides a summary of updates to the findings and recommendations in response to stakeholder feedback.

BACKGROUND

NS Power's Historical Reliability Performance

NS Power's service territory covers a forested and rural area located on the northern Atlantic coast, making it vulnerable to coastal storms. NS Power's primary cause of outages are vegetation contacts on utility power lines. In the last 25 years, Nova Scotia has experienced several powerful storms that caused widespread outages across the island.

- In 2003, Hurricane Juan caused power outages for hundreds of thousands of customers. Some severely impacted customers waited nearly two weeks for power to be restored.[3]

[3] Government of Canada, October 2003. "Archived: Hurricane Juan Storm Summary." Available at: https://www.canada.ca/en/environment-climate-change/services/archive/hurricanes/hurricane-juan/storm-summaries/summary.html

- In 2014, a summer tropical storm left over 250,000 customers without power for up to a week.[4]
- More recently, in 2019, Hurricane Dorian disrupted power for 80 percent of customers and caused $39 million in damages.
- Hurricane Fiona in 2022 also left 80 percent of NS Power's customers without power. Trees that blew onto lines broke over 2,000 utility poles.[5]

NS Power defines a reliability investment as any expenditure undertaken to mitigate the risk of not reliably servicing the customer. The Reliability Plan includes all investments that replace, refurbish, or improve upon assets designed to facilitate the delivery of electricity to customers.[6] The Plan excludes investments related to the connection of new customers or upgrades for existing customers.

There are two key metrics that NS Power tracks to assess reliability performance. The first is the average duration of power outages for the average customer per year—otherwise known as the system average interruption duration index (SAIDI). The second is the number of annual outages for the average customer per year—otherwise known as the system average interruption frequency index (SAIFI). Lower numbers (i.e., *fewer* outages and *shorter* outages) equate to better reliability. NS Power has tracked its historical SAIDI and SAIFI performance since 2005, although the Board did not set performance thresholds until 2017.

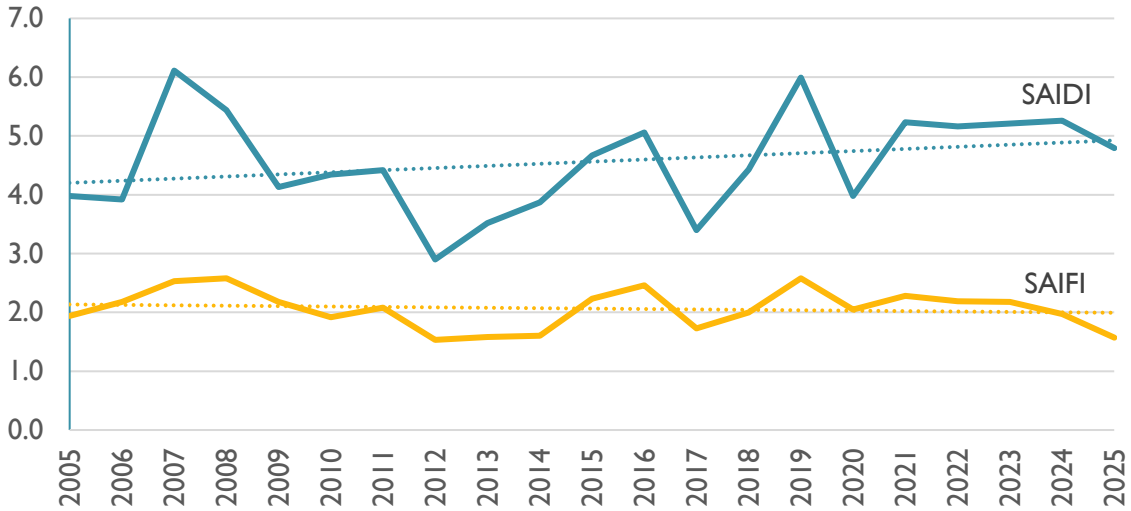
Figure 1 below shows NS Power's actual SAIDI and SAIFI from 2005 to 2025. As seen in the figure, SAIFI fluctuated between 1.53 and 2.58 outages per year and changed very little over this period. SAIDI fluctuated between 2.90 and 6.11 and increased by nearly one hour on average.

[4] Withers, Paul. Nov 2021. "Nova Scotia Power wants to change performance standards it keeps failing to meet." *CBC News*. Available at: https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-power-performance-standards-1.6258816.

[5] NS Power, Oct 2023. "Hurricane Fiona: One year later." Available at: https://www.NS Powerower.ca/about-us/articles/details/articles/2023/10/03/hurricane-fiona-one-year-later.

[6] IR-15.

Figure 1. Historical SAIDI and SAIFI

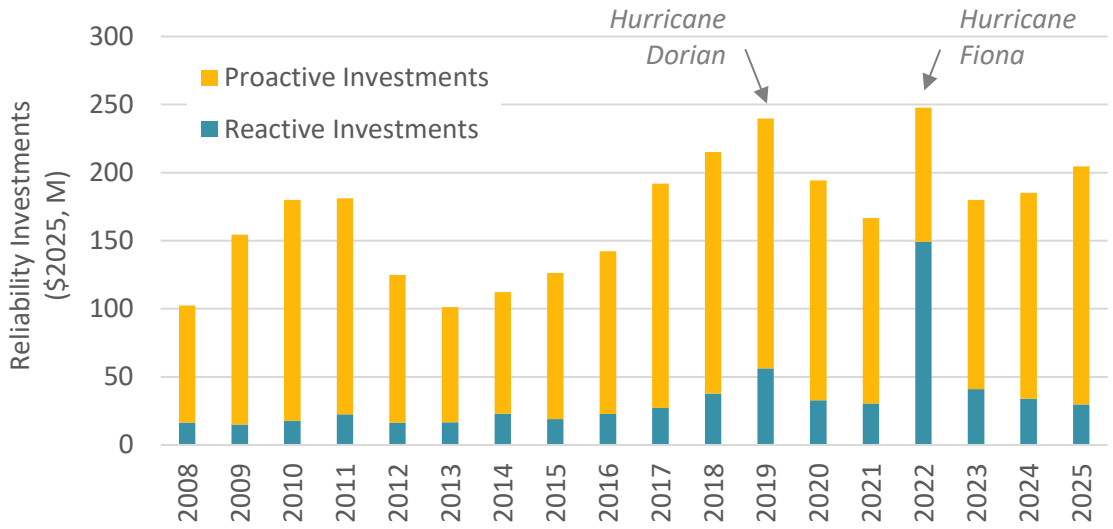


Source: IR-95, Att. 1.

Figure 2 below shows NS Power expenditures on reliability over time on an inflation-adjusted basis. NS Power increased expenditures while maintaining SAIFI performance and observing declines in SAIDI performance. A portion of these investments are "reactive" investments that occur to restore power or fix lines after an outage and the rest are "proactive" investments intended to avoid outages in the first place. Since 2008, when NS Power began tracking its reliability investments, NS Power has spent $618 million ($ 2025) in reactive investments and nearly $2.5 billion ($ 2025) in proactive investments. On average, NS Power has spent 74 percent of reliability investments on proactive expenditures from 2008–2025.[7] NS Power spent the most in 2022 at nearly $250 million; a greater share of reliability investments were reactive in that year due to Hurricane Fiona. Outside of years with very large weather events, the Company focused its reliability investments on proactively improving reliability on its system.

[7] IR-95, Att. 1. Includes years with large storms like 2019 and 2022.

Figure 2. Total actual reactive and proactive investments in reliability (2008–2025)



Source: IR-95, Att. 1.

Note: Converted to 2025$ using Consumer Price Index annual average, not seasonally adjusted from Statistics Canada. Table 18-10-0005-01. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000501

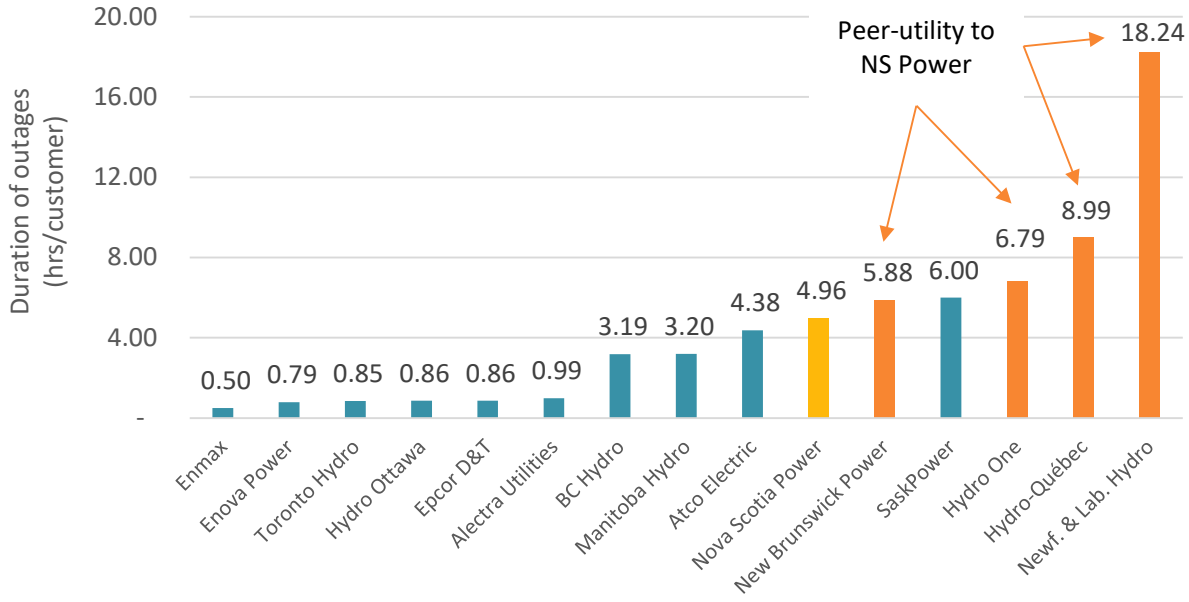
NS Power reliability in the context of other utilities

Figure 3 and Figure 4 below provide a comparison of NS Power's reliability to 15 other Canadian electric utilities done using data from 2018 to 2022. These figures show that NS Power ranks tenth for SAIDI and SAIFI.[8] When compared to utilities located in the Maritimes and on the eastern coast of Canada (i.e., "Peer utilities") NS Power's performance is better than most other utilities. These scores exclude days deemed to be "major events" although the definition of major events varies by utility. NS Power's analysis arrives at a similar finding. Between 2015 and 2025, NS Power's SAIDI and SAIFI scores were lower than those of their Atlantic peers in most years (2019, 2022, and 2023 are the exceptions).[9]

[8] Mcclearn, Matthew, October 9, 2023. "How reliable is your electric utility?" *The Globe and Mail*. Available at: https://www.theglobeandmail.com/business/article-how-reliable-is-your-electric-utility/.

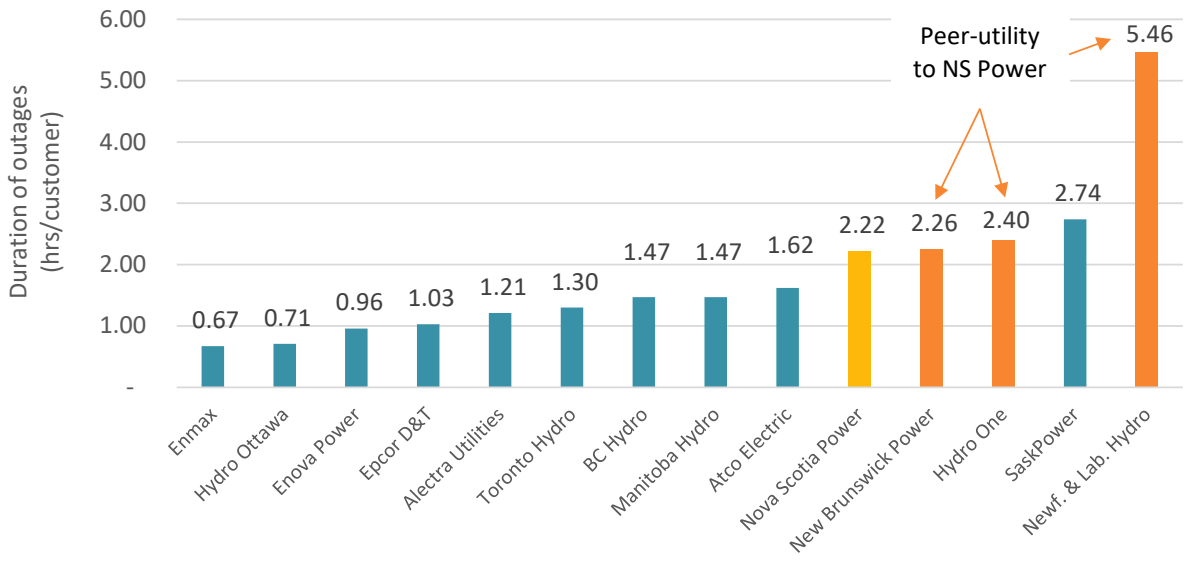
[9] NS Power, December 2025. "(M12619) 2026 Annual Capital Expenditure (ACE) Plan - $284 million." Figures 59 and 60. Available at: https://nserbt.ca/sites/default/files/M12619%20NS POWERI%202026%20ACE%20Plan%20Application.pdf.

Figure 3. Average five-year SAIDI for Canadian utilities (2018–2022)



Source: The Globe and Mail, 2023. "Peer utility" indicates those utilities that have similar types of service territories geographically, i.e., serve areas that experience intense coastal storms.

Figure 4. Average five-year SAIFI for Canadian utilities (2018–2022)



Source: The Globe and Mail, 2023. "Peer utility" indicates those utilities that have similar types of service territories geographically, i.e., serve areas that experience intense coastal storms.

The number of days with high winds are not Increasing in Nova Scotia

NS Power cites increasing weather challenges such as intense storms as a key reason for failing to meet its performance standards and projects an increase in SAIDI of 0.26 over the plan period due to climate-related pressures.[10] Indeed, peak wind speeds are expected to increase by 3.7 to 7 kilometers per hour by the year 2100 due to climate change.[11] High winds can cause disruption to electricity services by increasing the risk that trees and other vegetation fall onto or make contact with wires and cause outage. NS Power states that 46 percent of its electricity outages are caused by vegetation contact.[12] NS Power states that the source of the data that supports the assumption of a 0.26 increase in SAIDI is NS Power's Climate Adaptation Plan, filed as part of the 2026-2027 General Rate Application. However, it is unclear how the climate data in the Climate Adaptation Plan ties to the 0.26 increase in SAIDI. This is important given that the Reliability Plan includes $1 billion in targeted equipment replacements and upgrades primarily to address this increase in SAIDI.

Given the absence of more detailed source data and the methodology for converting it into the 0.26 increase in SAIDI assumption, we performed a high-level examination of data available from Environment Canada's digital archive of Canadian Climatological data.[13] We focused on the maximum wind gust speed in kilometers per hour, which is defined as the "the speed in kilometers per hour (km/h) of the maximum wind gust during the day…The duration of a gust typically corresponds to an elapsed time of 3 to 5 seconds."[14]

NS Power frequently references a maximum wind speed threshold of 80 kilometers per hour in its filings. On its website, NS Power states: "In the last five years, the average number of hours of wind gusts over 80 km an hour is up 33 percent from the five years before that."[15] Additionally, NS Power has used 80

[10] "As was the case in previous years, NS Power continues to point to increasing weather challenges and the increasing frequency and intensity of storms as the reason for failing to achieve its reliability and customer service targets." Source: Nova Scotia Utility and Review Board, September 2024. "M11627 – Nova Scotia Power Inc. re 2023 Annual Performance Standards." Pg 12. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[11] Department of Environmental and climate Change, Nova Scotia, December 2022. "Weathering What's Ahead: Climate Change Risk and Nova Scotia's Well-being." Available at: https://climatechange.novascotia.ca/sites/default/files/uploads/climate-change-risk-report.pdf.

[12] IR-19(a), Att. 1.

[13] Government of Canada, 2026. "Historical Climate Data – Get More Data." Available at: https://climate.weather.gc.ca/; We downloaded daily data from the digital archive of Canadian Climatological data using the Cygwin software and command line queries, available at: Government of Canda, January 2023. "Data Download Options – Cygwin – Digital Archive of Canadian Climatological Data." Available at: https://collaboration.cmc.ec.gc.ca/cmc/climate/Get_More_Data_Plus_de_donnees/Cygwin/DataDownloadOptionsDocument_Cygwin_EN.pdf.

[14] We note that NS Power tends to analyze number of hours when the wind gusts reached at least 80 kilometers per hour rather than days. We were unable to locate this data; therefore, we used the count of days when the maximum wind gust speed reached at least 80 kilometers per hour. Source - Government of Canada, 2026. "Past weather and climate - glossary" Available at: https://climate.weather.gc.ca/glossary_e.html.

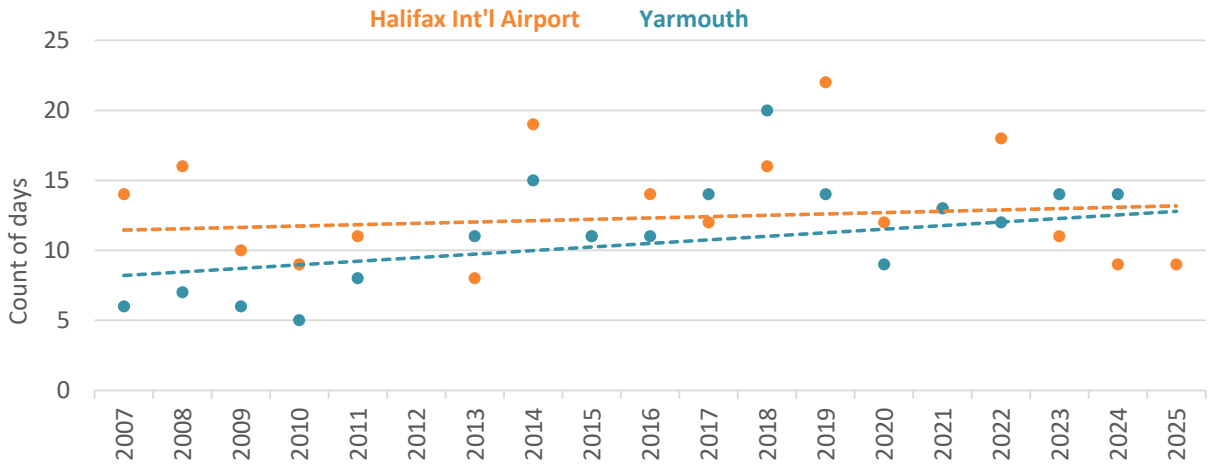
[15] NS Power, 2026. "Why does the power go out every time we have wind, rain, or snowstorms?" Available at: https://www.nspower.ca/about-us/reliability#faq.

kilometers per hour in its normalized SAIDI calculations when these were required by the Board.[16] Therefore, we used the 80 kilometer per hour threshold to identify the maximum wind gusts that are more likely to cause damage to utility lines as a proxy for "high wind" trends in NS Power's service territory.[17]

Maximum wind gust speed measurements come from several weather stations throughout Nova Scotia. We selected two sites for our analysis: Halifax International Airport and Yarmouth. Halifax represents a central location with a long history of consistent wind speed measurement and nearby population centre, while Yarmouth on the southern tip of Nova Scotia is often first landfall of hurricanes and storms moving north across the Atlantic.

Figure 5 shows the number of days per year with a recorded wind gust speed of at least 80 kilometers per hour at Halifax and Yarmouth between 2007 and 2025. While gusts are increasing slightly, the average number of days with gusts at least 80 kilometers per hour has not changed materially over this timeframe. In fact, the average number of days with high wind gusts between these two sites was about 14.4 days between 2016 and 2020 and 12.6 days between 2021 and 2025. This represents a 12 percent decrease in days with gusts at least 80 kilometers per hour between these two five-year periods.

Figure 5. Number of days with maximum wind gusts ≥80 km/hr at Halifax and Yarmouth sites (2015–2024)



Source: Government of Canada, 2026. "Historical Climate Data – Get More Data." Available at: https://climate.weather.gc.ca/.

[16] IR-96(d).

[17] In Matter 12185, the Board wrote: "When questioned about its many references to wind speeds of 80 km/h or greater, NS Power explained that its treatment of hours of gusts exceeding 80 km/h includes any hour when such gusts occur, even if the gusts were brief or isolated within that hour. It also stated that the threshold of 80 km/h is not based on a specific industry standard for wind gusts but is instead based on NS Power's historical experience with outage impacts from high winds. NS Power also stated that it is not aware of a widespread standard, such as the 80 km/h threshold, being used by other utilities." Nova Scotia Utility and Review Board, September 2025. "M12185 – Nova Scotia Power Inc. re 2024 Annual Performance Standards." Available at: https://nserbt.ca/sites/default/files/M12185%20-%20Decision%20Letter.pdf.

This analysis suggests that high winds, as measured by the count of annual days with high gusts, have not significantly increased in recent years. The takeaway is that changes in wind speed cannot fully explain NS Power's missed reliability performance targets in recent years without the occurrence of a tropical storm.[18] Greater transparency regarding NS Power's investment strategy to address climate-related issues in the Reliability Plan would allow the Board and stakeholders to more fully assess NS Power's mitigation selection and overall strategy. For example, it is unclear why targeted equipment replacements and upgrades are the primary mitigation to address climate-related pressures, and whether it is reasonable that such high expenditures are expected to achieve a relatively small reduction in risk.

Regulatory Context

In response to the 2014 tropical storm, the Board established 13 performance standard metrics and targets for NS Power regarding reliability and response to adverse weather conditions.[19] The Decision also required that NS Power release annual performance reports and give status updates when requested by the Board.[20] If standards went unmet, the Decision gave the Board the authority to levy $200,000 per missed metric in financial penalties against NS Power, to a maximum of one million dollars in a calendar year (none of which can be recovered from ratepayers).[21] The performance metrics cover three main categories:

1. **Reliability** - SAIDI, SAIFI, Circuit Average Interruption Duration Index (CKAIFI), and Circuit Average Interruption Frequency Index (CKAIDI)[22]

2. **Response to adverse weather**- customer notification times, percent of calls answered, polite disconnects,[23] and percentage of customers restored within 48 hours[24]

[18] The Board wrote: "Similar to previous years, NS Power continues to point to increasing weather challenges and the increasing frequency and intensity of storms as the reason for failing to achieve its reliability or customer service target" in Nova Scotia Energy Board, Sept 2025. "M12185 – Nova Scotia Power Inc. re 2024 Annual Performance Standards." Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[19] Nova Scotia Utility and Review Board, November 2016. "Performance standards established for reliability, response to adverse weather conditions, and customer service. NS Power must report to the Board respecting its performance on the standards. Standards will be reviewed in five years." 2016 NSUARB 193 Decision M07387. Pages 48-49. Available at: https://nserbt.ca/sites/default/files/M07387%20-%20Board%20Decision.pdf.

[20] Ibid, p. 49.

[21] Ibid, p. 49.

[22] Ibid, pp. 48-49.

[23] When Nova Scotia Power's phone lines are overloaded from customer callers, which occurs typically during an outage, the utility is allowed to disconnect the call. This is called a "polite disconnect." Source: NS Power, 2023. "2023 Performance Standards Report." Available at: https://www.NS Powerower.ca/docs/default-source/pdf-to-upload/performance-standards-report_2023.pdf?sfvrsn=47c03d9_2.

[24] Nova Scotia Utility and Review Board, 2016. "2016 NSUARB 193 Decision M07387." Page 48. Available at: https://nserbt.ca/sites/default/files/M07387%20-%20Board%20Decision.pdf.

3. **Customer service** - customer call wait times, new service connection times, and bill estimation rates[25]

The Board set initial targets based on NS Power's five-year historical performance between 2012 and 2016 plus (or minus, depending on the target) one or two standards of deviations. The Board ruled that the next five-year period would start in 2017 and last until 2021, with some performance standards changing annually each year while others would be set for the entire period. The Board ruled that the new targets set in 2022 must either improve upon the performance from the 2017–2021 period or not change at all. NS Power reports its performance annually each March, allowing the Board to review and impose penalties if deemed to be warranted.[26]

The Company has never fully met annual performance standards since implementation in 2017 and was fined five times between 2019 and 2025. In 2022, after the initial five-year period, the Board reviewed the performance standards and made several updates. In a one-time exception, the Board allowed NS Power to exclude outage data from its major event day (MED) and extreme event day (EED) calculations during Hurricane Dorian.[27] This exclusion reduced SAIDI, SAIFI, CKAIDI, and CKAIDI for the year. The Board also made updates to targets related to severe weather response and customer service. The Board rejected the utility's proposal to remove the effect of all localized storms from reliability calculations moving forward.[28]

In 2023, NS Power failed to meet its performance standards for CKAIDI and CKAIDI and four of five elements in the standards for new service connection times, resulting in the largest fine to date of $1.25 million.[29] The established standard dictates an average customer should not be without power for more than 4.29 hours throughout the year and the average in 2024 was 5.21 hours. In 2025, NS Power again failed to meet targets and received fines of $1 million.[30]

Although the Board initially planned to update SAIFI and SAIDI targets for the five-year periods beginning in 2022 and 2026, the targets remain from 2017 since NS Power has struggled to meet them. Figure 6 and Figure 7 show NS Power's historical performance measured by SAIDI and SAIFI in comparison to the thresholds established in 2017 by the Board. The SAIDI and SAIFI below exclude weather days classified

[25] Ibid, pp. 48-49.

[26] Ibid, p. 49.

[27] Withers, Paul. Nov 2019. "Nova Scotia Power says Dorian was its most damaging storm ever." *CBC News*. Available at: https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-power-says-dorian-was-its-most-damaging-storm-ever-1.5376098.

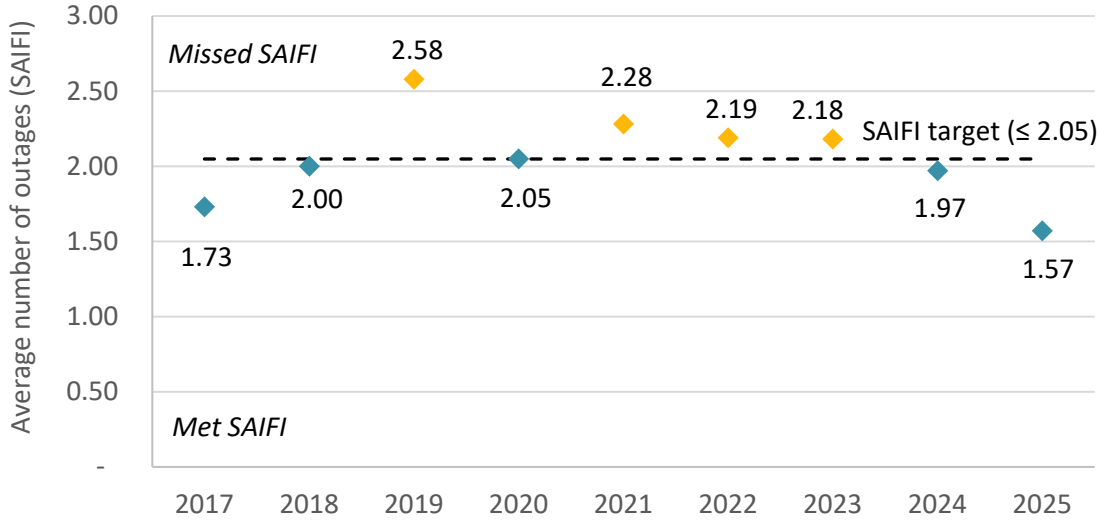
[28] Nova Scotia Utility and Review Board, Feb 2022. "Revisions to performance standards approved." 2022 NSUARB 27 M10279. Available at: https://nserbt.ca/sites/default/files/M10279%20Decision.pdf.

[29] NS Power, 2023. "2023 Performance Standards Report." Available at: https://www.NS Powerower.ca/docs/default-source/pdf-to-upload/performance-standards-report_2023.pdf?sfvrsn=47c03d9_2.

[30] IR-95 Att. 1.

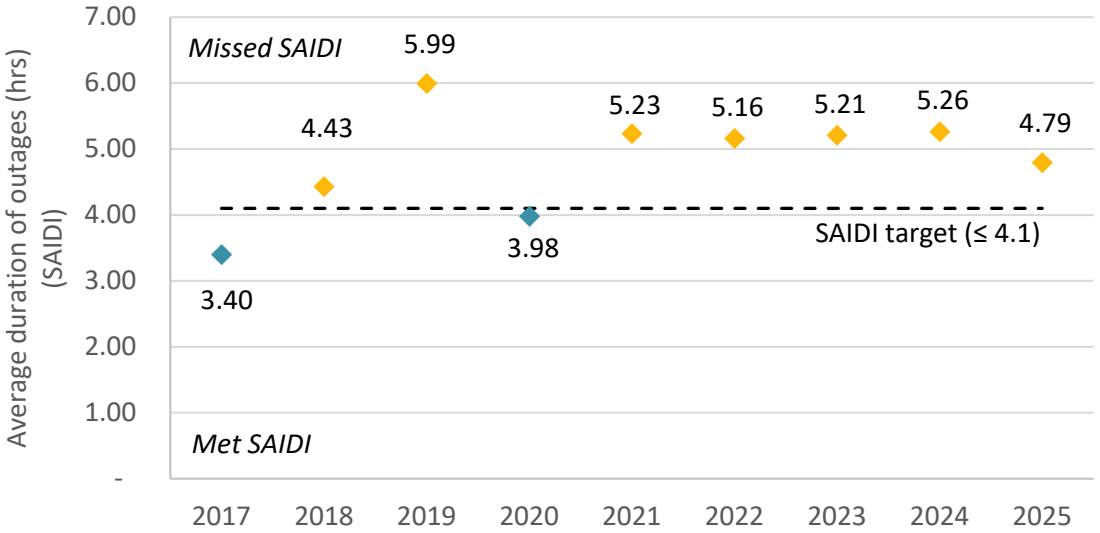
as significant, major, and extreme event days.[31] These figures illustrate that NS Power missed its SAIFI targets four out of the last nine years and missed its SAIDI targets seven out of the last nine years.

Figure 6. NS Power's historical SAIFI performance (2017–2025)



Source: IR-95, Att. 1.

Figure 7. NS Power's historical SAIDI performance (2017– 2025)



Source: IR-95, Att. 1.

31 Significant event days, major event days, and extreme event days are defined following IEEE 1366-2012 Standard 2.5 Beta methodology as ordered by the Board. Source: Nova Scotia Utility and Review Board, November 2016. "Performance standards established for reliability, response to adverse weather conditions, and customer service. NS POWERI must report to the Board respecting its performance on the standards. Standards will be reviewed in five years." Nova Scotia Utility and Review Board, 2016. "2016 NSUARB 193 M07387." Available at: https://nserbt.ca/sites/default/files/M07387%20-%20Board%20Decision.pdf.

Recent weather events and a cyberattack have impacted NS Power's ability to meet its performance standards.[32] After reviewing the missed 2023 targets, the Board deemed that it would require NS Power to submit a Five-Year Reliability Plan by December 31, 2024.[33] The Board wrote:

> The Board agrees that a comprehensive written version of NS Power's five-year reliability plan is needed to understand how service improvements will be achieved and against which progress in achieving the performance goals can be tracked. This plan must include specific actions and related timing, demonstrate why these specific investments were selected and quantify the level of reliability or resilience improvement expected from each investment. The Board directs NS Power to prepare such a plan, which is to be filed by December 31, 2024.[34]

While not explicitly stated in the Board's Decision Letter in M11627 (2023 Annual Performance Standards review), we assume that NS Power, in drafting its five-year reliability plan, also sought to mitigate gaps identified by EA Technologies' 2024 review of NS Power's asset management processes and systems.[35] In that report, EA Technologies offered 11 recommendations to improve NS Power's asset management processes and systems. Based on the EA Technologies report, the Board ruled that NS Power was to submit an action plan with updates on how the utility was addressing the gaps identified by the EA Technologies report.[36] We summarize the EA Technologies findings related to reliability below.

1. EA Technologies found that NS Power had decent methods in place for determining high-risk assets. However, it found that NS Power did not have a process by which it evaluates the effectiveness of specific actions taken to mitigate risk.[37] In its action update plan, NS Power commented it would "initiate this effort via the 2025 ACE Plan submission."[38]

2. EA Technologies found that NS Power lacked an internal process to review asset management plans. The Board ordered NS Power to "further develop and document its

[32] The 2025 cyberattack weakened NS Power's ability to respond to calls and collect billing data, among other key services, but it did not affect reliability according to NS Power's response to IR-74. The 2016 performance targets dictate that no more of 2 percent of customer bills should be estimated. In 2025, NS Power estimated 37.8 percent of customer bills, generating frustration and distrust from many customers. (See: Taryn Grant, April 2026. "Nova Scotia Power touts decreased outages in 2025 but continues to fail some performance standards." CBC News. Available at: https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-power-touts-decreased-outages-in-2025-but-continues-to-fail-some-performance-standards-9.7150054). The attack also led to greater call volumes and missed metrics relating to calls answered. The utility is still recovering from this event.

[33] Nova Scotia Utility and Review Board, Sept 2024. "M11627 – Nova Scotia Power Inc. re 2023 Annual Performance Standards." Available at: https://nserbt.ca/sites/default/files/M11627%20Decision%20Letter.pdf.

[34] Ibid, p. 15.

[35] Nova Scotia Utility and Review Board, March 2024. "2024 NSUARB 59 M11067." Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[36] NS Power, September 2024. "M11067 – Inquiry about Nova Scotia Power Inc.'s Property and Assets (per s. 30(5)(a), Public Utilities Act." Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[37] Ibid, p. 23 and 25.

[38] NS Power, September 2024. "M11067 – Inquiry about Nova Scotia Power Inc.'s Property and Assets (per s. 30(5)(a), Public Utilities Act." p. 2. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

internal review processes."[39] In NS Power's action update plan, the Company states that updates were ongoing, and it promised to update its Reliability Team Process by June 2025.[40]

3. EA Technologies found the Company lacked processes that focused on the "performance of the asset management system itself and how effectively the asset management objectives are being achieved."[41] The Board directed NS Power to develop and implement a management review process. NS Power addressed this directive with the issuance of its Strategic Asset Management Plan.[42]

NS Power, in developing its Five-Year Reliability Plan, took findings and feedback from the EA Technologies report, particularly relating to the lack of methods and processes to evaluate the effectiveness of specific actions to mitigate risk.[43]

SUMMARY OF THE RELIABILITY PLAN

The 2025–2029 Five-Year Reliability Plan presents NS Power's proposed approach to addressing reliability performance gaps through targeted investments in vegetation management, equipment upgrades, and grid modernization, with stated objectives of meeting regulatory standards and improving customer outcomes.[44]

The Plan forecasts approximately $1.3 billion over five years, with the stated objective of addressing persistent reliability challenges and meeting regulatory performance standards. The primary goals are to reduce SAIDI by 20 percent from the current five-year average and to achieve the Performance Standards SAIFI target by 2029.[45] NS Power also claims the Plan will strengthen grid resilience in response to climate change and improve restoration times following major events, such as hurricanes and severe storms.

[39] Nova Scotia Utility and Review Board, March 2024. "2024 NSUARB 59 M11067." p. 28. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[40] NS Power, September 2024. "M11067 – Inquiry about Nova Scotia Power Inc.'s Property and Assets (per s. 30(5)(a), Public Utilities Act." p. 2. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[41] Nova Scotia Utility and Review Board, March 2024. "2024 NSUARB 59 M11067." p. 31. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[42] NS Power, September 2024. "M11067 – Inquiry about Nova Scotia Power Inc.'s Property and Assets (per s. 30(5)(a), Public Utilities Act." p. 2. Available at: https://uarb.novascotia.ca/fmi/webd/UARB15.

[43] We note that the only filing in M11904 – the action plan update given by NS Power in response to Board Order M11067 – is the action plan itself. There are no follow-up documents provided by NS Power nor comments submitted by intervenors. As such, we're unsure to what extent NS Power followed the recommendations from EA Technologies.

[44] Reliability Plan, p. 4.

[45] Reliability Plan, pp. 5-6.

The Plan's five-year spending forecast is structured around three primary programs, which consist of multiple sub-programs:

1. **Storm Hardening – Vegetation Management:** These programs target the leading cause of customer hours of interruption, which is tree contacts. The Plan allocates $265 million over five years to widening rights-of-way for distribution and transmission lines, establishing new corridors around power lines, and trimming /removing trees. NS Power indicates these measures are intended to reduce both the frequency and duration of outages.[46] The projected SAIDI reduction is 0.70 to 1.25 hours.

   Storm Hardening – Vegetation Management contains four sub-programs including corridor widening of managed rights-of-way for the distribution system, corridor widening for the managed right-of-way of the transmission system, establishing new rights-of-way, and for the trimming and removal of trees around existing power lines. The table below summarizes key data around these sub-programs.

Table 2. Summary of Storm Hardening – Vegetation Management sub-programs

Sub-Programs	2025-2029 Forecast Investment ($ millions)	2025 Deployment Details	Reliability Plan Reference
Trimming and Removal of Trees Around Existing Power Lines	$98	177 km	Section 4.4 (p. 22)
Establish New Rights-of-Way	$86	n/a	Section 4.3 (p. 20)
Distribution Corridor Widening with Managed Rights-of-Way	$66	6 transmission corridors	Section 4.1 (p. 16)
Transmission Corridor Widening with Managed Rights-of-Way	$15	315 km	Section 4.2 (p. 18)
Total	**$265**		

2. **Storm Hardening – Targeted Equipment Replacements and Upgrades:** With a proposed investment of $916 million, this program focuses on replacing aging infrastructure, modernizing substations, and installing advanced protective devices. The Plan describes these investments as necessary to address equipment failures (cited as a significant contributor to outages) and to enhance the system's ability to withstand and recover from adverse conditions. The Plan forecasts a SAIDI reduction for this program of 0.13 to 0.24 hours.

   Storm Hardening – Targeted Equipment Replacements and Upgrades contains three sub-programs for the distribution system, the transmission system, and for substation upgrades and replacements. The Distribution System Equipment Upgrades and Replacements sub-program is further sub-divided into three components, including the Distribution System Build to Roadside Program, Distribution System Conductor Upgrades, and the Distribution System

[46] Reliability Plan, p. 15.

Underground Upgrades. Table 3 below summarizes key data for each sub-program and component.

Table 3. Summary of Storm Hardening – Targeted Equipment Replacements and Upgrades sub-programs

Sub-Programs	2025-2029 Forecast Investment ($ millions)	2025 Deployment Details	Reliability Plan Reference
Distribution System Equipment Upgrades and Replacements	$487	Includes transformers, metering tanks, voltage regulators, reclosers, trip savers, new feeder projects	Section 5.2 (p. 23)
Distribution System Underground Upgrades	*$37*	*800 m*	*Section 5.1.3 (p. 28)*
Distribution System Conductor Upgrades	*$26*	*39 km*	*Section 5.1.2 (p. 28)*
Distribution System Build to Roadside Program	*$12*	*8 km*	*Section 5.1.1 (p. 27)*
Substation Upgrades and Replacement	$233	Includes four substation transformer replacements and three new substations	Section 5.3 (p. 29)
Transmission System Upgrades and Replacements	$196	n/a	Section 5.2 (p. 29)
Total	**$916**		

3. **Advanced Grid Modernization:** The Plan includes $78 million for grid modernization initiatives,[47] split into two principal sub-programs. First, Connected Assets, which includes Supervisory Control and Data Acquisition connectivity, deployment of additional Remote Terminal Units and downline connectivity to reclosers. Second, the Fault Location, Isolation and Service Restoration (FLISR) sub-program, which includes investments intended to enable the automatic control and reconfiguration of the distribution grid, and self-healing capabilities. A component of the FLISR sub-program is related to enabling integration and operational control of Distributed Energy Resources, including evaluation of a DERMS. The Plan forecasts a SAIDI reduction of 0.06 to 0.11 hours for this program.

[47] Reliability Plan, p. 5 (Figure 1).

Table 4. Summary of Advanced Grid Modernization sub-programs

Sub-Programs	2025-2029 Forecast Investment ($ millions)	2025 Deployment Details	Reliability Plan Reference
Connected Assets	$65	n/a	Section 6.1 (p. 31)
Remote Terminal Units	*$21*	*58 additional units*	*Section 6.1.1 (p. 32)*
Downline Connectivity	*$44*	*28 downline reclosers*	*Section 6.1.2 (p. 32)*
FLISR	$13	n/a	Section 6.2 (p. 34)
Distributed Energy Resources	*n/a*	*DERMS platform evaluation*	*Section 6.2.1 (p. 34)*
Total	**$78**		

NS Power uses its asset management framework to prioritize investments within the Plan. This framework incorporates historical reliability performance, outage cause analysis, and asset condition data.[48] The Plan identifies a set of highest-priority distribution feeders for 2025, representing approximately 10 percent of the system's feeders, as initial focus areas for targeted reliability improvements.[49] The Plan states NS Power will reassess these priorities annually and adjust them as new information becomes available.[50]

The Company estimates that the combined effect of these programs will result in a reduction of approximately one hour in SAIDI by 2029 (a 20 percent reduction), with the largest contribution to the improvement attributed to vegetation management activities.[51] The Plan also projects improvements in SAIFI of 16 percent, based on a historical correlation between SAIDI and SAIFI.

EVALUATION OF THE RELIABILITY PLAN

In this section, we evaluate the Reliability Plan with consideration for: (1) Proposed Investments and Investment Alternatives, (2) Feeder Scoring and Prioritization, (3) Reliability Improvement Estimates, (4) Cost-Effectiveness, (5) Affordability, and (6) Resilience. Within each of these sub-sections, we provide an overview of NS Power's methodology, an evaluation of NS Power's methodology, and our findings and recommendations.

[48] Reliability Plan, p. 10.
[49] Ibid, p 12.
[50] Ibid, p. 10.
[51] Ibid, p. 13.

Evaluation of Proposed Investments and Investment Alternatives

Overview of methodology

The Plan notes that while the 2025 investment forecast is based on a defined portfolio of projects, NS Power had not yet identified specific projects for the years 2026 through 2029 at the time of filing. For these years, investment levels reflect high-level program budgets rather than a bottom-up, project-level forecast. The allocation of investment across sub-programs for 2026 to 2029 is based on the relative share of each sub-program in the 2025 portfolio, applied proportionally to the overall program-level investment totals for the planning period.[52] Annual project selection and pacing are re-assessed each year in the ACE process, applying updated risk, asset condition, and performance evaluations.[53]

NS Power indicates that the Plan is developed through its asset management mechanism, which is intended to identify and address system risks to meet reliability performance standards.[54] The Company states that the pace and magnitude of the investments over the five-year time span of the plan were designed to strike a balance between risk reduction and concerns about avoiding excessive affordability impacts to customers.[55]

Evaluation of methodology

Our evaluation of NS Power's methodology to determine Reliability Plan investments finds:

- The methodology for determining future budgets is not likely to be accurate and does not appropriately reflect changing system needs over time.
- The Plan does not adequately prioritize programs that seek to reduce faults from vegetation, which is the primary driver of reliability issues in NS Power's service territory.
- The allocation of funds among vegetation management programs may not maximize reliability improvements.
- The Company did not provide an alternative portfolio.

We discuss these issues in further detail below.

Future-year budget estimates are rough approximations

The Plan does not provide a forecast of specific work or project scope for the years beyond 2025, and the investment levels for those years represent planning-level allocations rather than detailed project forecasts. As described above, estimated budgets for 2026 to 2029 are based on the relative share of each sub-program in the 2025 portfolio, applied proportionally to the overall program-level investment totals

[52] IR-18.
[53] IR-39; IR-52.
[54] IR-17.
[55] IR-27.

for the planning period. NS Power states "sub-program investment totals for 2025–2029 represent a planning-level allocation of program-level investment based on the 2025 ACE Plan portfolio, and do not represent a forecast of specific work or project scope in the out-years."[56] There are two primary problems with NS Power's methodology to determine future-year budgets. First, they are unlikely to be accurate because they are so reliant on one year (2025 in this case). Second, holding allocations across investment categories constant over the plan period does not reflect prioritization of investment based on the drivers of outages over time at the feeder level, based on NS Power's prioritization. This would result in shifting priorities (and related programmatic expenditures) as NS Power addresses different feeders with different risk profiles over time. The Reliability Plan misses an important opportunity to analyze longer-term trends and provide the Board more information about future program needs and resulting spending allocations.

This also highlights the need to track NS Power's spending over time relative to the Reliability Plan as expenditures inevitably vary from the Reliability Plan's forecast. NS Power reported recorded and anticipated 2025 year-end expenditures, 2026 forecasted ACE Plan investment, and 2025-2029 Reliability Plan forecasted expenditures as part of Appendix G in its 2026 ACE Plan filing. Synapse supports NS Power's initiative to provide supplemental information in the ACE Plan that compares annual results with Reliability Plan forecasts. However, the set of information provided in an appendix to the 2026 ACE Plan is not, in some cases, well summarized, was not updated to include actual expenditures for the full year and did not appear to incorporate all spending on reliability. Synapse has provided specific recommendations to allow for a more comprehensive assessment and transparency for the Board and stakeholders regarding shifting priorities and investments relative to the Plan in each successive ACE Plan filing.

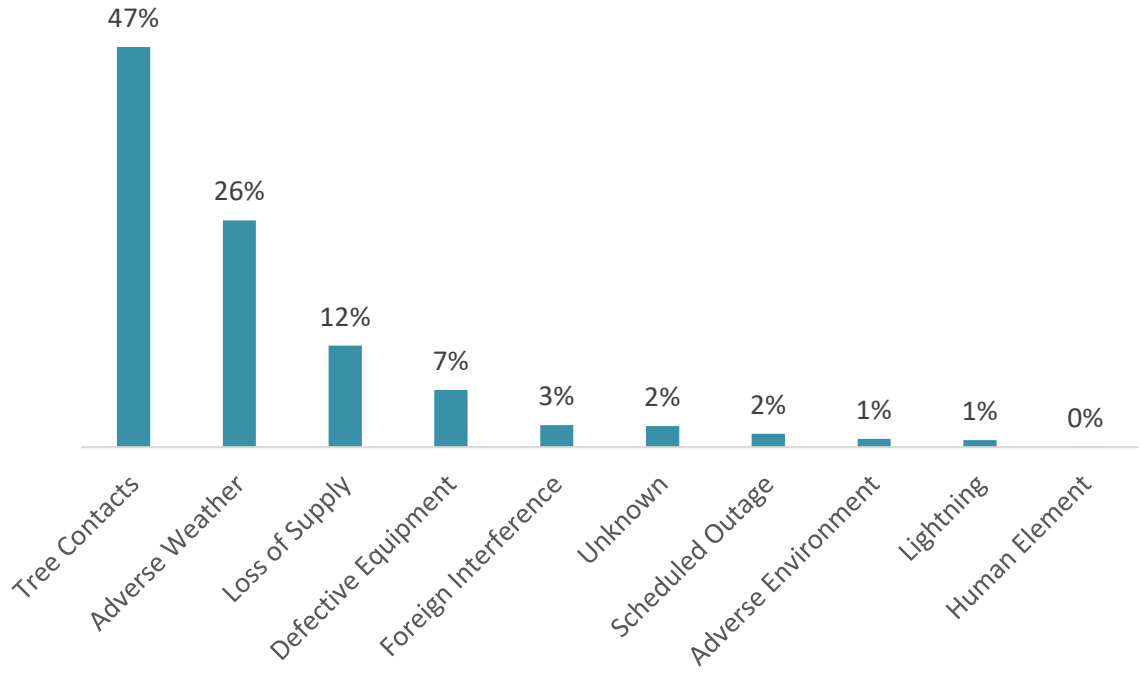
The Reliability Plan does not adequately prioritize reducing vegetation-caused outages

Vegetation is the primary driver of reliability issues in NS Power's service territory. Figure 8 below shows that tree contacts are the primary cause of reliability issues for NS Power. The Company states: "Reducing tree contacts is the number one way to prevent outages and reduce the overall duration when they do occur."[57]

[56] IR-18.

[57] Reliability Plan, p. 10. Even without vegetation contact due to "adverse weather," vegetation contact remains the highest cause of customer hours of interruption.

Figure 8. Customer hours of interruption by cause, 2016–2025 (% of total)



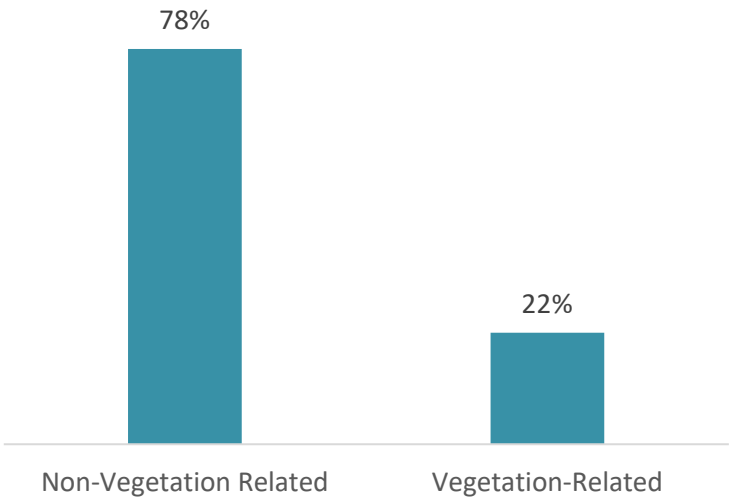
Source: IR-19(a), Att. 1.

Note: NS Power allocates 40 percent of adverse weather outages to tree contacts based on subject matter expertise.

Including NS Power's estimate of tree contacts that occur due to adverse weather events (included in the "tree contacts" category above), vegetation-caused outages were the largest contributor to customer hours of interruption from 2016-2025 (47 percent).[58] Yet the Reliability Plan forecasts just 22 percent of expenditures for programs that address vegetation-related outages, as shown in Figure 9 below.

[58] IR-19(a), Att. 1.

Figure 9. Percent of 2025–2029 expenditures for vegetation- vs. non-vegetation-related measures



Sources: IR-18 Att. 1_IR-18 5YP; Reliability Plan, p. 27.

Notes:

- *Includes all vegetation management programs (21 percent of total expenditures) and the "Build to Roadside" program which is $12 million (1 percent of total 2025–2029 expenditures).*
- *The Build to Roadside program has other, non-vegetation-contact-related benefits as well.*

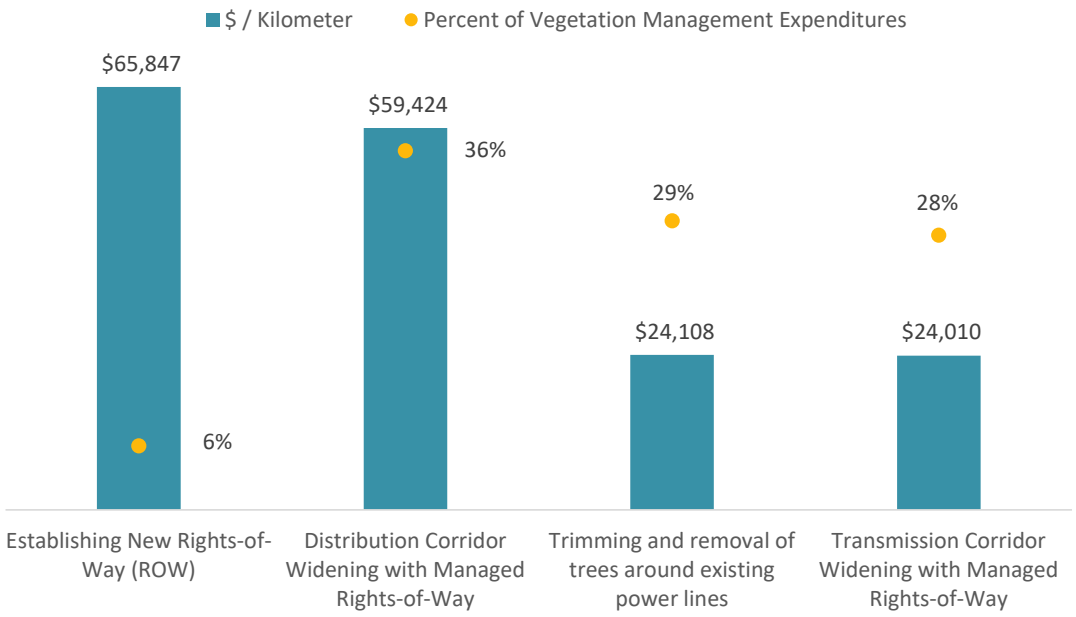
NS Power increased budgets for vegetation management over historical levels starting in the 2024 ACE Plan.[59] However, given that vegetation is the predominant driver of outages in NS Power's service territory, dedicating 22 percent of funding to vegetation-related programs is not a reasonable allocation of funding. More funding for vegetation management would allow the Company to address vegetation across a larger portion of its system (the increase in the percent of the system addressed would depend on how the Company allocated funding among the vegetation management sub-programs).

The allocation of funds among vegetation management sub-programs is likely not optimal

Vegetation-related outages are the primary cause of reliability issues for NS Power. Indeed, NS Power expects 75 percent of the forecast SAIDI improvement to come from vegetation management programs.[60] It is therefore important to understand and assess NS Power's approach toward addressing vegetation-related outages among the four vegetation management sub-programs described in the Plan: distribution corridor widening, transmission corridor widening, establishing new rights-of-way, and trimming and removal of trees around power lines. Figure 10 below shows current unit costs and percent of vegetation management expenditures for each of these four sub-programs.

[59] M11458, Decision 2024 NSUARB 143, p. 24.
[60] Reliability Plan, Figure 4, p. 13.

Figure 10. Unit cost and expenditures for vegetation management sub-programs

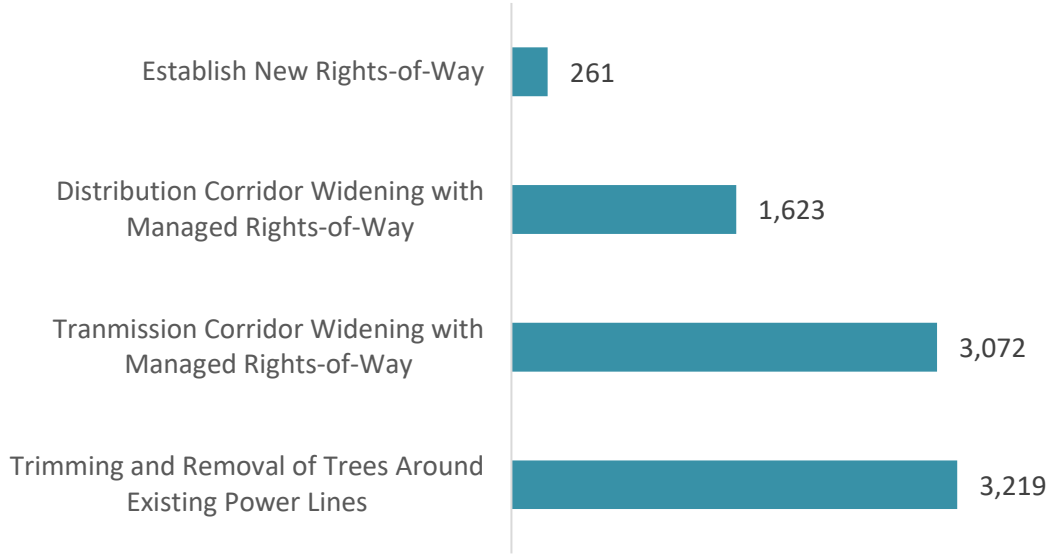


Sources: IR-85 Att. 5 EO; IR-18 Att. 1_IR-18 5YP.

We estimate the Plan will address around 5,100 kilometers of a total of 27,495 kilometers (or 19 percent of the system) over the five-year period.[61] Figure 11 provides a comparison of the unit costs of the vegetation management programs and percentage of vegetation management expenditures allocated to each. It is striking that the unit cost of distribution corridor widening is 146 percent higher than tree trimming/removal, and this activity is allocated more funding than trimming/removal. This allocation choice means NS Power accomplishes far fewer kilometers of work at a higher cost.

[61] Calculated assuming current unit costs and total Plan expenditures. IR-85 Att. 5 EO; IR-18 Att. 1_IR-18 5YP; IR-28, Att. 4.

Figure 11. Estimated kilometers of work by vegetation sub-program based on current unit costs, 2025–2029



Sources: IR-85 Att. 5 EO; IR-18 Att. 1_IR-18 5YP.

Note: We estimate the kilometers of work for each vegetation management program based on total Plan spending and current unit costs.

A different allocation of funds could increase the number of kilometers addressed. For example, if all funding for distribution corridor widening were instead allocated to traditional trimming/removal activities, the program could address another 3,999 kilometers, or an additional 15 percent, of NS Power's distribution system over the five-year period.[62] NS Power's allocation between these programs is only appropriate if distribution corridor widening is much more effective at reducing vegetation-related outages compared with trimming/removal activities (at least 146 percent more effective, given the unit cost premium). Yet, the Company does not distinguish between the cost-effectiveness of these critical sub-programs.[63] Similarly, the Company does not provide reliability improvement estimates by sub-program.[64]

In its review of Synapse's draft report, Tetra Tech cites utility testimony and studies of vegetation management programs at peer Canadian utilities Toronto Hydro-Electric[65] and Hydro One[66]. We summarize this data along with NS Power data in Table 5 below. These studies further support Synapse's concern that NS Power's vegetation management programs may not be appropriately scaled and

[62] Based on IR-85 Att. 5 EO; IR-18 Att. 1_IR-18 5YP. We calculate this by taking the current estimate of $96.4 million for distribution corridor widening divided by trimming/removal unit cost of $24,107.
[63] IR-38, Att. 2.
[64] IR-38.
[65] Preventative and Predictive Overhead Maintenance, EB-2023-0195, Exhibit 4, Tab 2, Schedule 1.
[66] Distribution System Plan, EB-2021-0110, Exhibit B-3-1.

optimized. NS Power spends around $1,400 per total distribution kilometers annually[67] on vegetation management programs, compared with around $976/km for Toronto Hydro[68] and around $6,600/km for Hydro One.[69] The figures enable comparison of overall spending levels on vegetation management programs across these utilities by normalizing for system size. NS Power's spending per km is much less than Hydro One but more than Toronto Hydro.

It is concerning that the relative number of distribution miles addressed by each of these utilities is much higher as compared with NS Power. The program "cycle" is calculated in the last column, indicating approximately how many years it takes each utility's vegetation management program to address all primary feeders on its distribution system. NS Power's current unit costs and forecast budget indicate a multi-decade vegetation management cycle (~27 years) for its vegetation management programs to address all distribution feeders, in comparison with 3 to 4 years for peer Canadian utilities. We note that NS Power forecasts its vegetation management programs will address 820 distribution kilometers in 2025, which would equate to a longer, 33-year cycle if this pace continues.

Table 5. Comparison of Hydro One, Toronto Hydro, and NS Power Vegetation Management Spending and Distribution Kilometers Addressed

Utility	Total Primary Distribution (km)	Annual Distribution Kilometers Addressed	Cycle to Address All Distribution Circuit Kilometers (Years)	Spending on Vegetation Management Programs (Total $ / Distribution km, 2025 Dollars)
Hydro One	105,000	23,663	4	$6,600
Toronto Hydro	4,100	1,399	3	$976
NS Power	27,500	1,021	27	$1,400

Sources:

- *Hydro One: Tetra Tech Report, p. 6; annual distribution kilometers average of 2018-2020 from Distribution System Plan, Figure 62, EB-2021-0110 Exhibit B-3-1 Section 3.2, p. 79.*
- *Toronto Hydro: Preventative and Predictive Overhead Maintenance, EB-2023-0195, Exhibit 4, Tab 2, Schedule 1, pp. 9, 30. Page 28 states that Toronto Hydro has 4,800 circuit kilometers, rather than 4,100. If this figure is correct, this would equate to a program cycle of 3.4 years rather than 2.93.*
- *NS Power: IR-85 Att. 5 EO; IR-18 Att. 1_IR-18 5YP.*

Notes:

- *We estimate the kilometers of work for each vegetation management program based on total Plan spending and current unit costs. We add total kilometers and divide by five for the annual amount.*

[67] Total distribution-related vegetation management is $191.2 million; divided by five years equates to an average of $38.2 million. See IR-018, Att. 01_IR-18 5YP. NS Power has around 27,500 primary distribution kilometers (IR-028, Att.01). $38.2M/27,500km = $1,400/km.

[68] Toronto Hydro forecast $4 million for vegetation management programs in 2025, divided by 4,100 total primary kilometers equals $976. Preventative and Predictive Overhead Maintenance, EB-2023-0195, Exhibit 4, Tab 2, Schedule 1, p. 6;

[69] CN Utility Consulting, *Hydro One Vegetation Management Study*, April 2021, p. 14. We convert the $5,500 in 2020 dollars to 2025 dollars. *Statistics Canada.* Table 18-10-0005-01. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000501.

- *Per Appendix G of NS Power's 2026 ACE Plan, p. 15, NS Power expects to complete 820 kms of distribution vegetation management in 2025, which equates to a 33-year cycle.*

This comparative analysis further supports Synapse's recommendation that NS Power examine both its *overall* allocation of funding to vegetation management programs as well as the allocation of funding *among* vegetation management programs. NS Power should seek to reduce the number of years or cycle over which it inspects and addresses vegetation management issues in the most cost-effective manner possible.[70]

Synapse notes that traditionally, vegetation management programs are an operations and maintenance (O&M) expense, which does not earn a return. This is not the case with NS Power's vegetation management programs, which are treated as both O&M and capital expenditures.[71] Distribution corridor widening is treated primarily as a capital expenditure. Routine maintenance, which likely includes trimming and tree removal, is treated as an O&M expenditure.[72] The disparity of ratemaking treatment among the sub-programs may influence the allocation of funds since utilities generally prefer investments that increase shareholder profits.

NS Power's funding allocation for the transmission corridor widening sub-program may also be sub-optimal. Transmission-level outages tend to be a small fraction of total outages (though the outages caused by transmission-level issues can last longer). There were no transmission-level outages in the feeder-level data provided by NS Power,[73] and we wonder if NS Power omitted this from the response to Synapse's interrogatory. Regardless, standard transmission corridors / rights-of-way are generally much wider than distribution corridors,[74] and there are more stringent standards for transmission as opposed to distribution lines. Allocating similar levels of funding to this program as trimming/tree removal may not appropriately direct resources to where they are needed most to improve reliability.

There is no evidence that the Company considered alternative portfolios

While the Company states that it considered alternatives, the Company did not provide Synapse with any alternative Plan portfolios considered by the Company.[75] To be clear, Synapse is referring here to overall Plan alternatives such as allocating more funding to vegetation management, reducing overall funds, or other potential alternative plans to the selected five-year Reliability Plan. Examination of alternative

[70] Related issues were raised by the Consumer Advocate in the 2025 ACE plan proceeding, who stated "the more intensive assessment and tree removal work means that fewer kilometers of vegetation management are completed within the approved budget. This means that NS Power will need to assess any improvement in effectiveness against the reduction in vegetation management coverage." M12012, *Evidence of John D. Wilson,* March 5, 2025 (refiled March 12), p. 14.
[71] M11458, Decision 2024 NSUARB 143, p. 24. We note that, for most utilities, almost all vegetation management expenditures are an O&M expense since these programs are not an investment in assets owned and maintained by the utility.
[72] *Id.*
[73] For the periods of 2019-2023 and 2025. IR-19_Att. 1_IR-19(b); IR-28 Att. 3; IR-88 Att. 1 EO. It is not clear if this was a limitation of the data sets provided. Synapse cross-referenced the feeder IDs in the outage statistic data sets to the transmission line IDs and there were no matches.
[74] IR-39 (d).
[75] IR-27.

portfolios would help stakeholders and the Board consider trade-offs of alternative funding allocations and would also provide greater transparency into how NS Power sees its needs evolving over time.

Findings and recommendations

The following table presents Synapse's findings, along with our recommendations, based on the preceding discussion. We also include suggested timing for implementation. Near-term indicates consideration in the 2027 ACE Plan. Mid-term implies consideration in the 2028 ACE Plan. Longer-term contemplates consideration in the next Five-Year Reliability Plan.

Table 6. Summary of findings and recommendations for proposed investments and investment alternatives

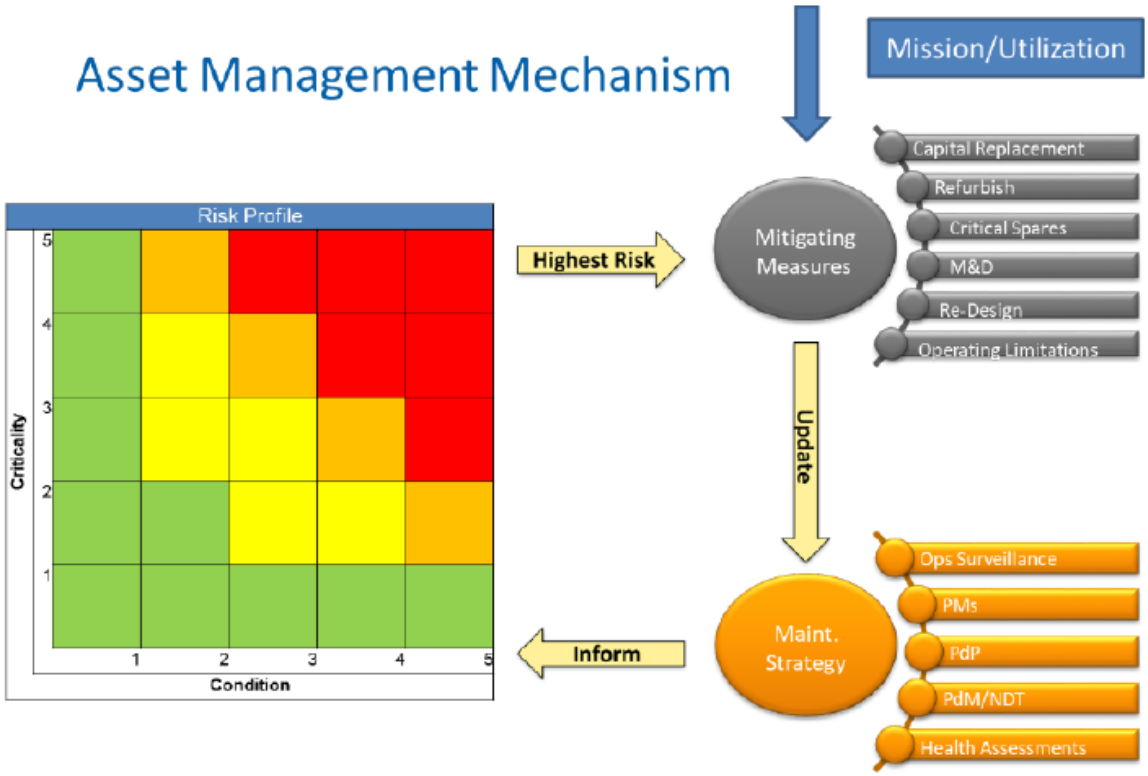
Findings	Recommendations	Timing
1. The methodology for determining future budgets is likely inaccurate and does not appropriately reflect changing system needs over time.	NS Power should revise its methodology for forecasting future budgets, which is currently based entirely on the ACE Plan for the first year. At minimum, NS Power should reflect known, large projects (greater than $1 million) in its forecast. It should also forecast how it expects changing system needs to alter program allocations.	Longer-term
2. NS Power reported anticipated 2025 year-end expenditures, 2026 forecasted ACE Plan investment, and 2025-2029 Reliability Plan forecasted expenditures as part of Appendix G in its 2026 ACE Plan filing. However, the data is not well summarized, does not include actual expenditures once each year is complete, and should incorporate all spending on reliability.	The data in Appendix G should be supplemented with: (a) a summary table with breakouts for each sub-program and each year of the Reliability Plan, (b) actual ACE Plan expenditures in place of anticipated-year-end ACE Plan expenditures, once each year is complete, (c) incremental costs of approved Authorization to Overspend (ATO) requests and storm rider costs, once each year is complete, and (d) explanations for why actual expenditures for reliability, inclusive of all reliability-related expenditures, varied relative to the ACE and reliability plans.	Near-term
3. The Plan does not adequately prioritize programs that seek to reduce faults from vegetation, which is the primary driver of reliability issues in NS Power's service territory.	NS Power should analyze whether allocating more funding to vegetation management programs would provide more reliability improvement than the current allocation which prioritizes equipment upgrades and other capital expenditures. An independent, third-party audit of NS Power's vegetation management programs should be conducted and should provide recommendations on approaches, practices, or tools from other utilities that would help NS Power optimize its vegetation management programs. The study should also examine whether additional resources and funding can and should be reprioritized from other programs to improve reliability in a cost-effective manner.	Near-term
4. The allocation of funds among vegetation management programs may not maximize reliability improvements.	NS Power should analyze its vegetation management programs to ensure funding is allocated appropriately.	Near-term
5. The Company did not provide evidence that it considered alternative portfolios to the proposed Reliability Plan and why it did not pursue them.	NS Power should examine alternative plan portfolios.	Longer-term

Evaluation of NS Power Feeder Scoring and Prioritization Methodology

Overview of methodology

NS Power's approach to feeder scoring and prioritization for equipment upgrades as well as vegetation management[76] is based on a risk-based asset management mechanism. A risk identification stage leads to the development of risk profiles, based on a combination of criticality and condition scores from 1 to 5, with 1 defining the lowest risk feeders and 5 defining the highest risk feeders. When NS Power identifies equipment-related issues, it uses the asset management framework shown in Figure 12 below to inform its mitigations. Vegetation-related risk scores are assessed as part of the condition score (the variable "forestry" in the condition equation shown below). The vegetation condition rating combined with criticality "determines which sections are targeted as priorities for vegetation management work to be completed."[77]

Figure 12. NS Power asset management mechanism framework



Source: IR-33.

[76] Reliability Plan, p. 16.
[77] *Id*.

The criticality score for each feeder is calculated using several factors: the number of customers served, the total load (kWh), and the feeder's performance relative to established performance standards (such as CKAIFI and CKAIDI).[78] The framework groups feeders into quintiles for customer count and usage, with higher scores assigned to feeders in the top quintiles. When it comes to criticality scoring based on performance standards, feeders identified as "problem feeders" for the year due to poor performance on CKAIFI and CKAIDI measures receive a criticality score of 5.[79] NS Power factors in additional considerations for criticality are Communications and Maintenance Access. For Communications, these factors include whether the feeder has telemetry that allows for indication and/or control. Maintenance Access factors include whether more than 30 percent of structures are off-road. The final criticality score is the maximum of these factors and adjusted by the modifiers. The following equation represents how the framework combines criticality scores into a final score:[80]

$$\boldsymbol{Criticality = Max(Usage, Customer, Perf.Stand.) + Maint.Access - Communication}$$

The condition score is based on loading and balance, as measured in amps; feeder inspection results; forestry condition; historical outage frequency (CKAIFI) and duration (CKAIDI); and subject matter expert input. The following equations show NS Power's condition score calculation:[81]

$$\boldsymbol{Feeder\ Condition = Average(Insp., Loading, CKAIFI, CKAIDI, Forestry) + Cond.Mod.}$$

The overall feeder risk score is calculated as the product of the criticality score and the condition score, resulting in a risk rating that ranges from 1 to 25. The equation below shows how to derive the ultimate feeder risk score.[82]

$$\boldsymbol{Feeder\ Risk(1-25) = Feeder\ Condition(1-5) * Feeder\ Criticality(1-5)}$$

This risk ranking methodology informs the selection of solutions, investment levels, and the prioritization of work across the system.

Evaluation of methodology

Synapse applauds NS Power for establishing a framework to quantitatively assess feeder-level reliability risk across the criteria that NS Power has found to be the most significant drivers of reliability issues. Establishing and continually refining this modelling is essential to target investment and maximize reliability improvements, given affordability and other constraints.

[78] Reliability Plan, p. 16; IR-29.
[79] IR-29.
[80] IR-30.
[81] IR-31.
[82] IR-30.

That said, Synapse has identified several issues regarding NS Power's prioritization framework and its implementation. These are as follows:

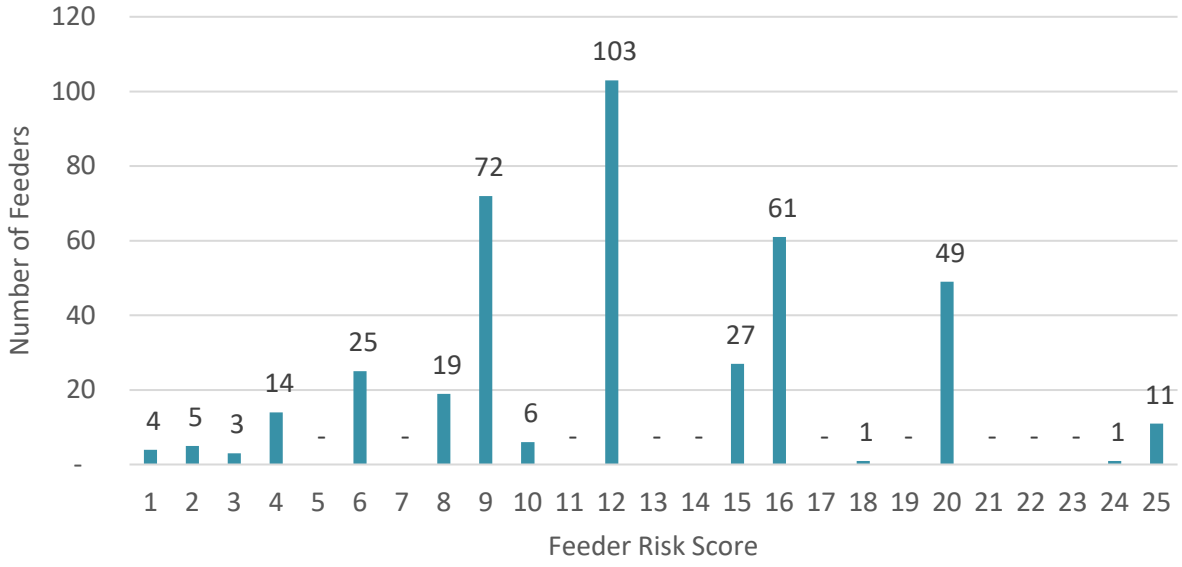
- Feeder risk scores do not provide adequate differentiation for feeder prioritization.
- NS Power's actual feeder prioritization differs, in some instances, from the Reliability Plan.
- NS Power may not adequately incorporate community-level feedback on experiences and needs into its prioritization methodology.
- NS Power does not have data on the location of critical facilities and does not indicate the extent to which the Plan improves service for critical facilities.
- NS Power does not assess disparities in reliability for vulnerable and priority customers and communities or address disparities in its risk scoring or prioritization.

We discuss these issues further below.

The scoring methodology does not provide adequate differentiation for feeder prioritization

NS Power's methodology (described above) results in final feeder risk scores that are relatively homogenous, which does not allow for sufficient differentiation among feeders for prioritization purposes. Figure 13 and Figure 14 below show there are a significant number of feeders with the same score. For example, 49 feeders representing 7,200 km of feeders in NS Power's service territory (12 percent and 26 percent of total feeders and feeder length, respectively) all have a score of 20.

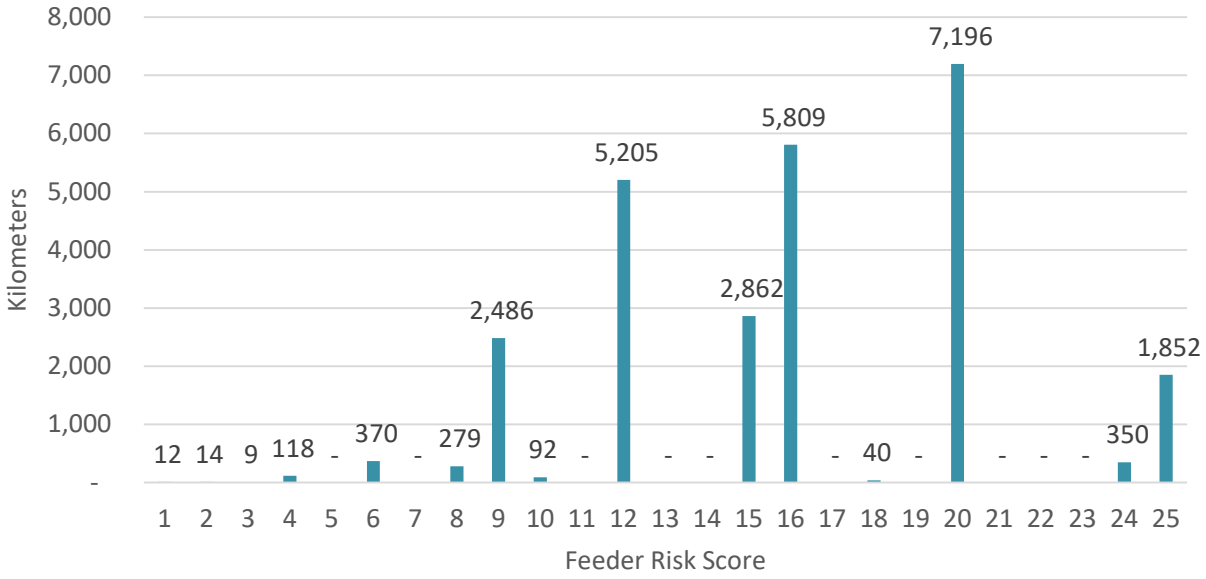
Figure 13. Number of feeders by final risk score



Source: IR-28, Att. 4; IR- 28, Att.1.

Note: There are two feeders with scores above 25. Since this appears to be inconsistent with NS Power's methodology, we removed these from the figure.

Figure 14. Kilometers of feeders by risk score



Source: IR-28, Att. 4; IR-28, Att. 1.

Note: There are two feeders with scores above 25 representing 800 kilometers. Since this appears to be inconsistent with NS Power's methodology, we removed these from the figure.

Based on the numbers above, we find that NS Power's feeder prioritization methodology does not allow for sufficient differentiation among feeder scores to adequately prioritize the Company's programs. NS Power should deploy resources in a manner that maximizes reliability improvement for each ratepayer dollar spent while addressing reliability issues on the worst performing feeders. The quantitative framework developed to assess reliability risk does not allow for adequate differentiation to guide the Company's decision-making.

NS Power's actual feeder prioritization differs in some instances from the Reliability Plan

Synapse found that there were instances in 2025 when NS Power addressed different feeders than identified in the Reliability Plan. For example, there were 31 feeders not included in the Plan where NS Power implemented the distribution corridor widening program in 2025.[83] This highlights the need for greater transparency regarding how NS Power prioritizes feeders and why it may not, in some cases, prioritize feeders according to highest reliability risk as indicated in the Reliability Plan. It is critical that NS Power prioritize the highest risk feeders to maximize reliability improvement for each ratepayer dollar invested. This could be because of reliability issues, changing risk scores, operational constraints, or other factors. NS Power should continue to utilize the ACE Plan process to present information regarding

[83] IR-41, Att. 3.

deviations from feeder prioritization. However, the information presented in the 2026 ACE Plan is not sufficiently detailed to provide the transparency necessary to track the degree to which reprioritization of high-risk projects has occurred.[84]

NS Power may not adequately incorporate community-level feedback on experiences and needs into its prioritization methodology

NS Power states that it solicits community-level feedback as part of its Plan. The Company employs four "Reliability Advisors" to engage with communities and solicit feedback through outreach sessions.[85] However, it is not clear how the Company formally incorporates this feedback into the Reliability Plan or whether this feedback informs the Company's priorities.

NS Power does not have data on the location of critical facilities in its service territory and does not indicate the extent to which the Plan improves reliability for critical facilities

NS Power does not have data on the locations of critical facilities in its service territory.[86] Critical facilities can include police and fire stations, hospitals, nursing homes, wastewater facilities, community centres that provide customer assistance during outages, and other infrastructure that is critical for society to function. During an outage event, NS Power prioritizes restoration activities based on the location of critical facilities, but it does not have an internal database of these facilities.[87] Since this data is not available, NS Power's programs are essentially blind to how it could target reliability or resilience investments to feeders that have an impact on critical facility outages or the individual facilities. We note, however, that many critical facilities may have backup power and NS Power should also consider this in its prioritization.

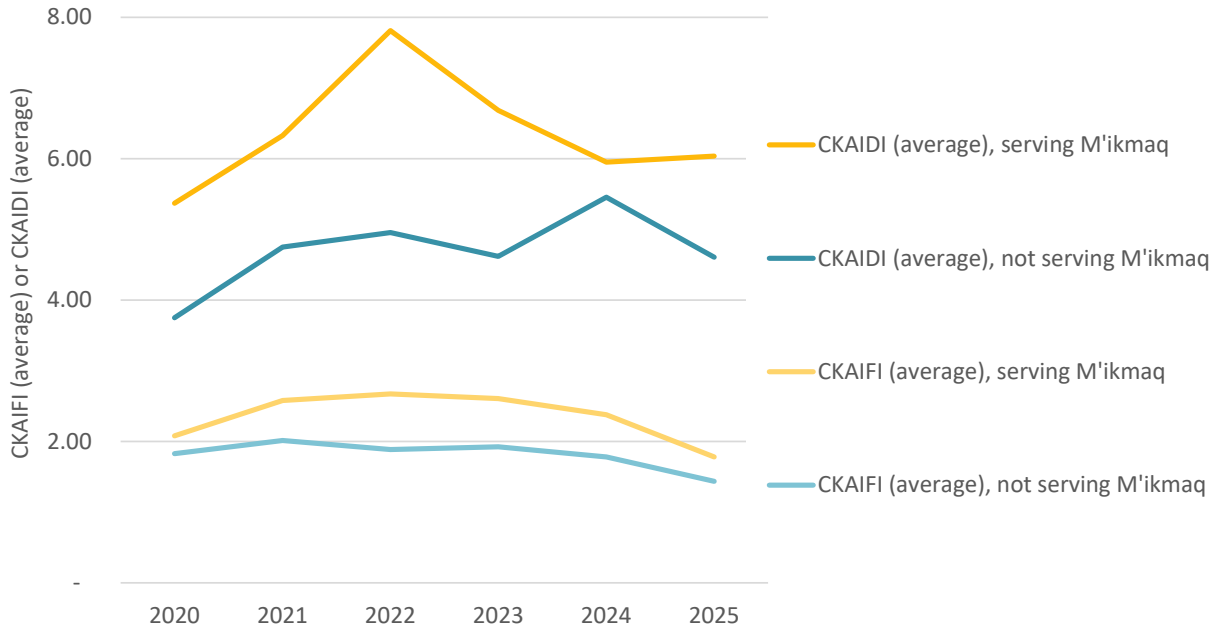
NS Power does not assess disparities in reliability for vulnerable and priority customers and communities or address disparities in its risk scoring or prioritization

NS Power has not assessed disparities in reliability for different types of customers, including vulnerable and priority customers and communities. Given the special consideration for the M'ikmaq of Nova Scotia, we requested that NS Power provide a high-level comparison of the reliability of the feeders that serve the M'ikmaq communities versus all other feeders on the system. Feeders serving M'ikmaq communities represent 8 percent of all feeders and 14 percent of all circuit kilometers. NS Power invested 10 percent

[84] The most detailed information on project progress is presented in Appendix B to Appendix G of the 2026 ACE plan. See NS Power, 2026 ACE Plan, Appendix G, pp. 69-70. There is some program-level information regarding work completed in 2025 provided in Appendix G for select programs, such as Build to Roadside (p. 37), Distribution System Upgrades (p. 38), and Remote Terminal Units (p. 45).
[85] IR-11.
[86] IR-80.
[87] NS Power, *Outage Centre,* online: https://www.nspower.ca/outages. "We restore power in a specific order starting with any emergency safety concerns. Then we restore power to the substations and main power lines that bring electricity from power plants to our towns and cities. After that, we focus on critical services identified by the Department of Emergency Management (DEM) such as hospitals, police, fire, water and communications."

of total reliability spending in these feeders on average from 2020 to 2025.[88] Figure 15 below shows the average CKAIDI and CKAIFI for feeders serving the M'ikmaq communities and for all other feeders.[89]

Figure 15. Comparison of reliability of feeders serving M'ikmaq communities to all other feeders



Source: IR-66.

Findings and recommendations

The following table presents Synapse's findings, recommendations, and suggested timing for implementation of the recommendations.

[88] IR-66.
[89] *Id.*

Table 7. Summary of findings and recommendations for feeder scoring and prioritization

Findings	Recommendations	Timing
6. Feeder risk scores do not provide adequate differentiation for feeder prioritization.	NS Power's risk prioritization framework should allow for much greater differentiation in risk scores to facilitate targeting programs to the highest risk feeders. NS Power could use risk units to calculate scores which should help it better understand relative reliability risk across its service territory. Further, risk models can inform cost-effectiveness analyses at both the feeder and system level.	Near-term
7. NS Power's actual feeder prioritization differs, in some instances, from the Reliability Plan.	NS Power should continue to track and present information to the Board in the ACE Plan process regarding how its prioritization of feeders differs from the Reliability Plan. This should include an explanation of why certain feeders were reprioritized and whether and why NS Power deviated from its feeder prioritization methodology. Appendix B to Appendix G of the 2026 ACE Plan provides a starting point, and should be modified to add the following information for each feeder, which may also be filed electronically: feeder kilometers, why additional feeders are addressed (reactive work, higher risk score, etc.)., risk score in the Plan, current risk score, whether the circuit is a worst performing circuit, and recorded cost for each feeder by program. The table should include all feeders targeted in the five-year Reliability Plan for all programs, including each vegetation management program (these are combined in Appendix B).	Near-term
8. NS Power may not adequately incorporate community-level feedback on experiences and needs into its prioritization methodology.	NS Power's Reliability Plan should provide more transparency into its community-level engagement activities, needs that are identified by communities, and whether and how the Plan addresses the identified needs.	Longer-term
9. NS Power does not have data on the location of critical facilities and does not indicate the extent to which the Plan improves service for critical facilities.	NS Power should gather data on the location of critical facilities in its service territory and whether critical facilities have backup power. NS Power can then assess whether including data on critical facilities in feeder prioritization is appropriate.	Medium-term
10. NS Power does not assess disparities in reliability for vulnerable and priority customers and communities or address disparities in its risk scoring or prioritization.	NS Power should investigate whether there are disparities in reliability for vulnerable or priority customers and communities. Whether and how to address any disparities in reliability for vulnerable or priority customers and communities likely requires input from the Board and other stakeholders.	Medium-term

Regarding Synapse's finding that NS Power's scoring leads to inadequate differentiation for risk prioritization, Synapse recommends a risk-unit based framework. This uses estimates of likelihood and consequence of a reliability event at the feeder level, multiplied together to calculate total risk. This methodology would not be "bounded" in the same manner as the current methodology (i.e., 1-5 scores for condition and criticality). Many if not all of the variables currently assessed by NS Power in its prioritization framework could serve to develop likelihood and consequence estimates that would likely result in more precise and differentiated risk scores.

This recommendation would replace the 1 to 5 scoring methodology that results in relatively homogenous risk scores. Instead, NS Power would estimate the likelihood and consequence of an outage and multiply these values to determine the risk of each feeder. The likelihood of an outage would be a value between 0 and 100 that represents the estimate of the percent likelihood an outage will occur over a year. The most straightforward consequence of an outage is customer minutes of interruption, though NS Power can also estimate other consequences of outages to develop risk scores.[90]

For example, NS Power could estimate that a feeder has an annual likelihood of outage of 5 percent, and that if an outage occurred on the feeder it would result in an average of 200 minutes of customer interruptions.[91] This feeder would have a risk score of 10.[92] As an example, all California utilities perform this type of modelling for all risks facing the utility, including outages.[93] While this represents a different mathematical approach to what is currently employed, this approach builds on NS Power's feeder prioritization framework which incorporates data that informs the likelihood and consequence of an outage at the feeder level. In Table 8 below, we categorize variables from the equations above as informing either likelihood or consequence of an outage.

[90] More complex estimates of consequence of an outage can include estimates of safety and financial impacts to customers and the utility, which can be denominated in dollars.

[91] Probability distributions can also inform consequence estimates when simple averages are not sufficient to capture the expected consequence of an event.

[92] "Scalers" can serve to increase scores by a constant amount that does not affect relative risk ranking, such as multiplying all scores by 10 or 100.

[93] See, for example, Pacific Gas and Electric Risk Assessment 2024 Mitigation Phase Report, online: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy-division/reports/2024-ramp-application-pge051524.pdf.

Table 8. Categorization of variables from equations as related to likelihood or consequence of an outage

Equation Variable	Definition	Likelihood/ Consequence	Notes
INSP	Inspection findings per kilometer	Likelihood	This informs the likelihood of an outage. The more findings, the greater probability of an outage.
Loading	"Loading" refers to "loading and imbalance." "Loading" evaluates current load relative to equipment rating while "imbalance" assesses how unevenly electric current is distributed across phases of the system	Likelihood	These factors assess the likelihood of equipment failure on a circuit.
CKAIFI	Circuit Average Interruption Frequency Index	Likelihood	This is a direct measurement of outage frequency. NS Power could use multiple years of data to help determine a future likelihood value (this helps to minimize the noise around evaluating only one year).
CKAIDI	Circuit Average Interruption Duration Index	Consequence	The duration of an outage is a measurement of consequence of outage. NS Power could use multiple years of data to help determine a future consequence value (this helps to minimize the noise around evaluating only one year).
Forestry	Forestry condition evaluates vegetation-related issues using satellite imagery	Likelihood	This indicates whether there is a higher likelihood of an outage due to vegetation.
Cond. Mod.	The condition modifier assesses known "adverse conditions" not covered by other factors	Likelihood	A likelihood of an outage.
Usage	Load	Consequence	The greater the load on a circuit, the greater the impact of an outage.
Customer	Customer count	Consequence	The more customers on a circuit, the greater the impact of an outage.
Perf. Stand.	A problem feeder is defined by the Performance Standards as a feeder that has been among the worst 5 percent of all NS Power's circuits with respect to either CKAIFI or CKAIDI* respectively for two consecutive years	Likelihood and consequence	See above.
Maint. Access	Increases score if feeder has more than 30 percent of structures off-road	Consequence	Appears to provide an indication for feeders that are hard to reach which can result in longer outages due to time for restoration activities.
Communication	Indicates telemetry on a feeder	Consequence	Appears to identify feeders where presence or absence of telemetry leads to shorter/longer restoration times.

Source: Variable definitions and description from IR-30, IR-31, IR-78.

*Note: * Synapse believes NS Power meant to indicate CKAIDI though the response refers to CKAIFI twice.*

Synapse understands that NS Power does not currently have estimates of reliability improvements at the feeder or project level. However, there are utilities that estimate prospective reliability and resilience improvements at the feeder or project level to conduct benefit-cost analysis, provide transparency, and guide decision-making. For example, Southern California Edison calculates sub-feeder-level benefits (reliability improvements) and costs for each of its proposed reliability programs.[94] Table 9 below shows that Entergy New Orleans' Five-Year (2027-2031) Resilience Plan includes a list of project IDs, the year(s) in which each project is expected to be implemented, the affected circuit(s), the investment, the reliability improvement benefits, and the benefit-cost ratio for each project, among other information[95].

[94] For example, SCE workpaper in A.23-05-010, *WP SCE-02 Vol. 01, Pt. 2 OCP GRC RSE,* estimates the Risk Spend Efficiency (RSE, which is equivalent to a benefit-cost ratio but does not use dollar units) for the Overhead Conductor Program at the sub-feeder level, which replaces deteriorating overhead conductor. This includes an estimate of the reduction to the likelihood of failure for the program, among other inputs.

[95] Before the Council of the City of New Orleans. In RE: System Resiliency and Storm Hardening Docket No. UD-21-03. Application of Entergy New Orleans, LLC for Approval of Phase 2 Resilience Plan and Related Requests for Relief. Exhibit CG-2. Page 1 of 2.

Table 9. Entergy New Orleans' 2027-2031 Accelerated Infrastructure Hardening Project List Including Forecast Benefits and Costs of Each Project

Project ID	OpCo	Council District	Project Type	Start Year	End Year	Investment (Nominal)	BCR	50-yr CMI Benefits Weighted	50-yr PV CMI Dollars Benefits Weighted	50-yr PV Restoration Dollars Benefits Weighted	50-yr PV Total Dollars Benefits Weighted	Substation	Circuit(s)	Total Structures	Structures to be Hardened	Total Line Miles
3100-Market	NO	B	Rebuild	2026	2027	[redacted]	2.822	[redacted]	[redacted]	[redacted]	[redacted]	Market	2135, 2137, 2142, 2146, 2147	192	181	4.4
3101-Joliet 2025	NO	B	Rebuild	2026	2027		5.439					Joliet	2025	325	315	11.1
3102-Joliet 2021	NO	A	Rebuild	2027	2028		5.077					Joliet	2021	278	275	8.0
3103-Joliet	NO	A	Rebuild	2027	2027		3.441					Joliet	2012, 2026	94	91	3.6
3104-Joliet 2024	NO	A	Rebuild	2027	2028		4.413					Joliet	2024	159	146	6.3
3105-Joliet	NO	B	Rebuild	2027	2028		10.343					Joliet	2011, 2017, 2027	192	186	4.4
3106-Almonaster	NO	D	Rebuild	2027	2028		3.597					Almonaster	613, 621	198	185	6.9
3107-Almonaster	NO	D	Rebuild	2028	2028		7.093					Almonaster	625, 626	233	227	8.1
3108-Almonaster	NO	D	Rebuild	2028	2028		3.377					Almonaster	616, 617	211	200	5.9
3109-Derbigny	NO	B	Rebuild	2028	2029		5.279					Derbigny	1553, 1554	133	129	4.0
3110-Derbigny 1512	NO	B	Rebuild	2028	2029		2.943					Derbigny	1512	120	116	4.0
3111-Derbigny	NO	B	Rebuild	2028	2029		4.302					Derbigny	1513, 1543	124	120	3.3
3112-Derbigny	NO	B	Rebuild	2028	2029		5.560					Derbigny	1504, 1510, 1506, 1511	71	71	1.3

Source: Before the Council of the City of New Orleans. In RE: System Resiliency and Storm Hardening Docket No. UD-21-03. Application of Entergy New Orleans, LLC for Approval of Phase 2 Resilience Plan and Related Requests for Relief. Exhibit CG-2. Page 1 of 2.

Progression toward a more granular approach would help create a more accurate and useful feeder prioritization model while improving transparency of expected benefits and the costs to realize those benefits at the feeder or project level. It could also assist in the evaluation of alternatives at the feeder or project level.

Evaluation of Reliability Improvement Estimate Methodology

Overview of methodology

NS Power's methodology for estimating reliability improvements and expected diminishing returns uses aggregate program-level forecasts.[96] Reliability improvements are forecast by aggregating the expected contribution from each program included within the Plan. NS Power states that these forecasts are informed by historical experience with similar projects and programs, and by estimated reliability improvement factors per unit of investment developed by NS Power's subject matter experts.[97] Further, NS Power assumes diminishing returns on investment over the lifetime of the program based on estimates by subject matter experts.

As an example, the Plan notes that NS Power targets investments in certain technologies, such as Remote Terminal Units, at locations with the highest risk and largest customer counts, where the potential for reliability improvement is greatest.[98] As the Company addresses these high-impact locations, it expects subsequent investments to yield lower incremental benefits due to the finite number of applicable sites and the reduced risk profile of remaining locations.

Table 10 below provides NS Power's assumptions regarding expected diminishing returns for various programs. Distribution System Equipment Upgrades and Replacements have the highest diminishing returns while Vegetation Management has the lowest diminishing returns.

[96] IR-38.
[97] *Id.*
[98] *Id*.

Table 10. Diminishing returns assumptions by sub-program

Investment Track	Sub-Program	Normalized Effectiveness Reduction (% Reduction For Each $1M Invested)
Storm Hardening – Vegetation Management	Distribution Corridor Widening with Managed Rights-of-Way	2.0%
	Establish New Rights-of-Way	
	Trimming and Removal of Trees Around Existing Power Lines	
Storm Hardening - Distribution System Equipment Upgrades and Replacements	Distribution System Equipment Upgrades and Replacements	12.5%
	Build to Roadside Program	*40.0%*
	Distribution System Conductor Upgrades	*33.3%*
	Distribution System Underground Upgrades	*25.0%*
Advanced Grid Modernization	Remote Terminal Units	2.9%
	Downline Connectivity	8.3%
	FLISR	

Source: Based on data provided in IR-77 Att. 1 EO.

Note: Normalized effectiveness reduction calculated by Synapse based on NS Power's data; the normalization recalculated the percent reduction relative to each $1M invested.

Evaluation of methodology

Synapse could not verify NS Power's estimates of reliability performance improvements and diminishing returns presented in its Reliability Plan. Synapse issued multiple interrogatories to gather information on how NS Power determined the Plans' expected reliability improvement. NS Power responded that its improvement estimates are based on "historical outage performance and historical cost data"[99] of projects, adding that historical analysis by NS Power subject matter experts provided "directional insight" that was used for system-level estimates.[100] NS Power did not provide any of the historical analysis or data used to derive these estimates. It is therefore impossible to determine whether the forecasted reliability improvements are realistic or based on sound analysis. This is one of the most important issues for NS Power to remedy in future reliability plans.

Further, we note that the reliability improvement estimates are high-level in that they cover multiple sub-programs in combination. While NS Power states it "has developed an estimated reliability improvement factor per unit of investment for the potential interventions,"[101] it is not clear from the data provided how

[99] *Id.*
[100] IR-83.
[101] IR-38.

the Company uses this to calculate the overall reliability improvement forecast in the Reliability Plan. Further, Synapse has not seen evidence of reliability improvement calculations at the feeder level.

Findings and recommendations

The following table presents Synapse's findings, recommendations, and suggested timing for implementation of the recommendations.

Table 11. Summary of findings and recommendations for reliability improvement estimates

Findings	Recommendations	Timing
11. Synapse could not verify NS Power's estimates of reliability performance improvements and diminishing returns presented in its Reliability Plan.	NS Power must support its estimates of reliability improvements and diminishing returns pursuant to its Plan with sound analysis and data. NS Power should provide a more detailed methodology and analysis to support its reliability improvement estimates in the Company's next Plan. Since this component of the Plan is critical, Synapse also recommends a third-party review of the methodology and analysis.	Medium-term
12. Reliability improvement estimates are high-level in that they cover multiple sub-projects in combination.	The Company should develop transparent methodologies to estimate expected reliability improvements for each individual program proposed in the Reliability Plan, rather than in aggregate for multiple programs.	Medium-term
13. Reliability improvement estimates are not available at the feeder or project level.	The Company should develop transparent methodologies and analysis to estimate expected reliability improvements at the feeder or project level based on its Reliability Plan. This is also necessary for feeder-level cost-effectiveness analysis. Feeder- or project-level analysis would provide significantly greater insight into how NS Power prioritizes feeders and selects mitigations to address the primary reliability causes.	Longer-term

Evaluation of Cost-Effectiveness Considerations

Overview of methodology

The Plan acknowledges that the economic value of outages and the cost-effectiveness of investments are important considerations.[102] Once NS Power prioritized feeders for investment, it claims that it considered cost-effectiveness in selecting the solutions that best addressed the reliability need. NS Power stated that it compared alternative investment options and selected those expected to deliver the reliability

[102] Reliability Plan, pp. 6-7.

improvement cost efficiently. The Company further stated that it considered indicators such as dollars per avoided customer hours of interruption and estimated reliability improvement per unit of investment at the asset class and program level to make this assessment.[103] NS Power noted that it considered these cost-efficiency indicators in tandem with other considerations such as practicality, scalability, and execution feasibility. The Company does not evaluate cost-effectiveness of programs at the feeder level.

NS Power also indicates it is undertaking studies on the Value of Lost Load (VoLL) and intends to report on the potential integration of these findings into its investment planning process in future filings.[104] As a result, NS Power did not conduct a benefit-cost analysis to assess the dollar benefits of its Reliability Plan relative to the costs.

Evaluation of methodology

Our evaluation of cost-effectiveness in NS Power's Reliability Plan finds the following:

- NS Power's cost-effectiveness values are inadequately supported.
- It is unclear how cost-effectiveness affects NS Power's decision-making or prioritization.
- Based on available data, NS Power did not optimize its investment strategy for cost-effectiveness.
- There is no benefit-cost analysis of the Reliability Plan.

We discuss these findings further below.

NS Power's cost-effectiveness metrics are inadequately supported

The Company did not provide detailed analysis or data to support its calculations of program cost-effectiveness.[105] Synapse produced an estimate of reliability improvement per unit of investment by program and sub-program and for the plan as a whole using data provided by NS Power. However, Synapse was unable to evaluate the underlying methodology or analysis that produced these metrics because the Company did not provide underlying data.

It is unclear how cost-effectiveness affects NS Power's Reliability Plan

Synapse has not seen evidence regarding how NS Power's estimates of cost-effectiveness affect the Company's feeder prioritization or overall program budgets. NS Power states that it does evaluate cost-effectiveness at the program and asset-class level, and that it evaluates alternative reliability investments based on the relationship between cost and reliability improvement.[106] NS Power also states that it assesses and compares potential solutions across a range of factors at the feeder level. However, the

[103] IR-37.
[104] IR-60.
[105] IR-38.
[106] IR-37.

Company does not seem to have a rigorous, transparent approach for demonstrating how it compares alternative programs.[107] At minimum, Synapse would expect to see supporting evidence to support the Company's claims. This was not provided, which may indicate a lack of a formalized and rigorous process for the consideration of cost-effectiveness when selecting investments.

Based on available data, NS Power has not optimized its investment strategy for cost-effectiveness

Table 12 below is a summary of Synapse's cost-effectiveness calculations based on NS Power's responses to interrogatories.

[107] IR-37(c).

Table 12. Synapse calculation of cost-effectiveness

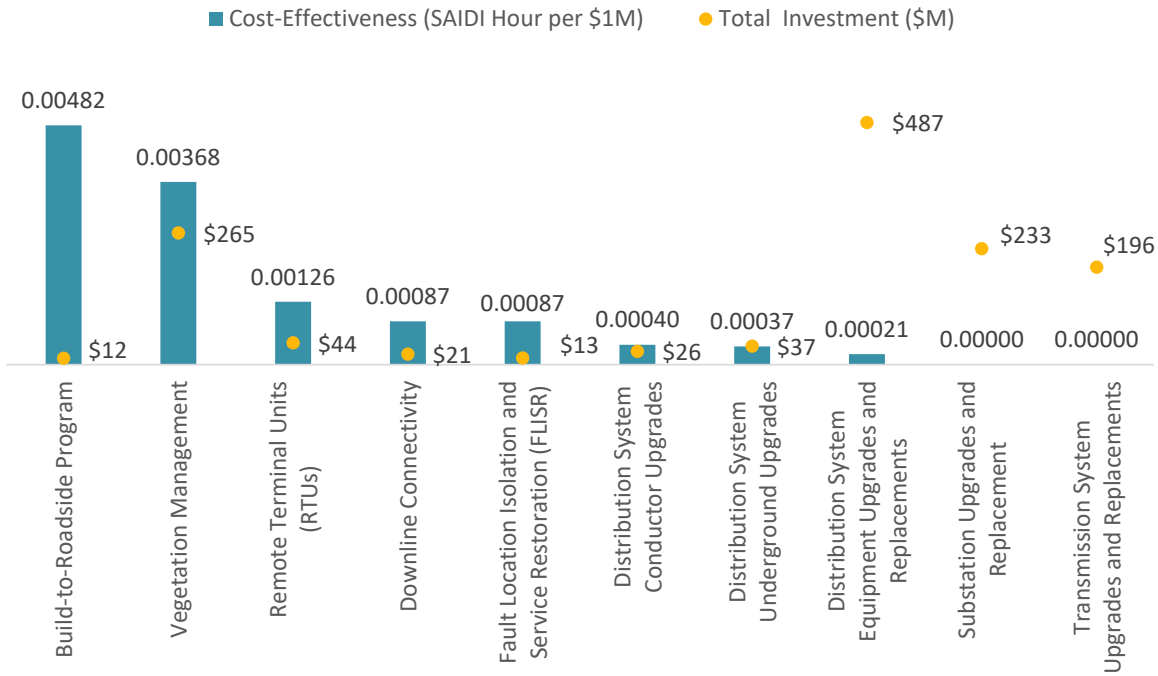
Sub-Program and Component	Total Investment ($M)	SAIDI Reductions (Hrs)	Cost-Effectiveness (SAIDI Reductions/Total Investment)
Storm Hardening – Targeted Equipment Replacement and Upgrades			
Distribution System Equipment Upgrades and Replacements	$487	0.10	0.000
Distribution System Underground Upgrades	*$37*	*0.01*	*0.000*
Distribution System Conductor Upgrades	*$26*	*0.01*	*0.000*
Build to Roadside Program	*$12*	*0.06*	*0.005*
Substation Upgrades and Replacement	$233	n/a	n/a
Transmission System Upgrades and Replacements	$196	n/a	n/a
Total	**$916**	**0.19**	**0.000**
Storm Hardening – Vegetation Management			
Distribution Corridor Widening with Managed Rights-of-Way	$96	n/a	n/a
Trimming and Removal of Trees Around Existing Power Lines	$78	n/a	n/a
Transmission Corridor Widening with Managed Rights-of-Way	$74	n/a	n/a
Establish New Rights-of-Way	$17	n/a	n/a
Total	**$265**	**0.98**	**0.004**
Advanced Grid Modernization Programs			
Connected Assets	$65	n/a	n/a
Remote Terminal Units	$44	0.06	0.001
Downline Connectivity	$21	0.03	0.001
Fault Location Isolation and Service Restoration	$13		
Total	**$78**	**0.09**	**0.001**
Grand Total	**$1,259**	**1.25**	**0.001**

Sources:

- *Synapse calculated the total investments based on 2025 allocations (per IR-18 Att. 1_IR-18 2025) and NS Power's methodology for applying the allocations to calculate the Reliability Plan budget (per IR-18 Att. 1_IR-18 5YP). This resulted in different investment amounts for some sub-programs as compared to the Reliability Plan.*
- *Synapse calculated SAIDI Reductions by sub-program and component as the average of the low and high SAIDI Reductions from IR-38 Att. 2.*
- *Synapse calculated cost-Effectiveness as the SAIDI Reductions divided by the Total Investment.*

Figure 16 below illustrates NS Power's cost-effectiveness values for all assessed sub-programs, sorted from most cost-effective to least cost-effective.[108, 109] In some cases, NS Power is investing significantly more in programs that are the least cost-efficient, such as the distribution system equipment upgrade program. This demonstrates that NS Power's investment strategy is not optimized for cost-effectiveness. An alternative version of the Plan may be able to achieve the same or similar level of reliability at a lower cost.

Figure 16. Cost-effectiveness by sub-program



Source: IR-38, Att. 2. Cost-effectiveness from Table 12.

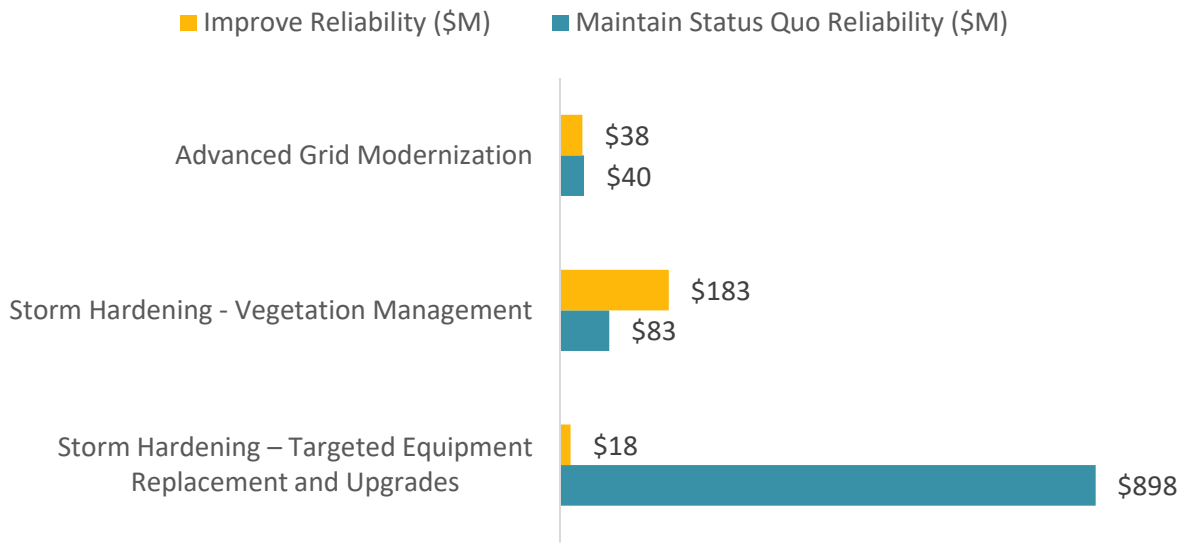
Further, this figure demonstrates that programs targeted at reducing tree contact are the most cost-effective. However, all the vegetation management programs have the same cost-effectiveness value. Given the importance of these programs to reduce tree contacts (the number one driver of outages in NS Power's service territory) it is critical that NS Power allocate funding and labour in a manner that

[108] In this figure, we omit vegetation management as it addresses different reliability drivers than the other programs, so it should only be compared with programs that can mitigate tree contact.
[109] Grid modernization does not directly address any one driver of outages, and the remainder of the programs broadly address equipment failure.

maximizes reliability improvement for each dollar spent. This is not currently possible since NS Power does not assess cost-effectiveness for each vegetation management sub-program.

In its responses to interrogatories, NS Power distinguished between expenditures that maintain current levels of reliability (referred to below as "maintenance of status quo") and expenditures that improve reliability from current levels. NS Power assumes only a relatively small portion of the Reliability Plan investments ($238 million of $1.3 billion) will be to improve reliability. The remaining funding of around $1 billion is for maintaining reliability at historical levels. While some spending is necessary to maintain reliability, it is striking that 81 percent of the Plan's forecasted spending is intended to support status quo reliability. This is shown in Figure 17 below by program, where NS Power indicates it expects $183 million, or 69 percent of vegetation management expenditures, to improve reliability versus $18 million, or 2 percent, of equipment replacement and upgrade expenditures.

Figure 17. Expenditures that improve reliability vs. maintenance of status quo by program



Source: IR-38, Att. 2.

There is no benefit-cost analysis of the Reliability Plan

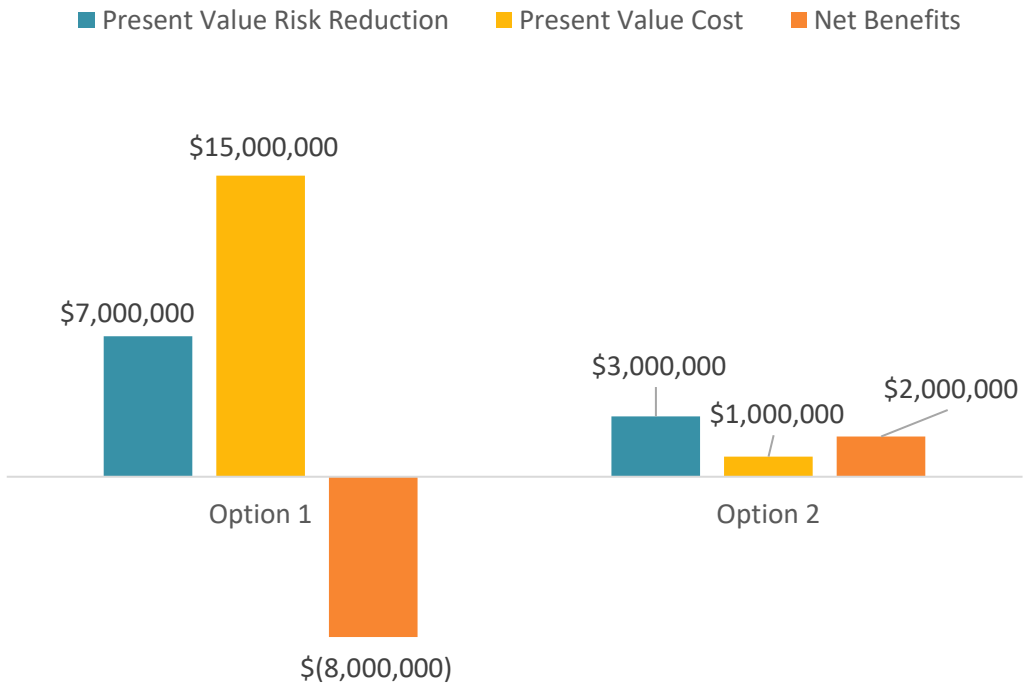
NS Power is currently conducting jurisdiction-specific Residential and Commercial & Industrial surveys of the value of unserved load. The Company plans to file the results of both the surveys and analysis as part of its submission for the 2027 ACE Plan.[110] NS Power should use this estimate of the value of unserved load to develop a benefit-cost analysis once those studies are complete. Also, NS Power does not currently project reliability impacts by customer class.[111] NS Power should work toward breaking out reliability

[110] IR-60.
[111] IR-07.

impacts by customer class over time as the results of the VoLL studies provide dollar benefits broken out by customer class. This would allow for a benefit-cost analysis of the portfolio.

Risk modelling at the feeder and customer class level provides the necessary inputs into benefit-cost analysis. For example, Pacific Gas and Electric (PG&E) converts estimated reliability consequences into expected injuries/fatalities (using the statistical value of life to model the financial impact of this) and financial consequences.[112] As part of NS Power's next Reliability Plan, the Company and Board should examine the present value benefits (risk reduction, in this case synonymous with reliability improvement), present value costs, and net benefits of an alternative portfolio, as illustrated in the figure below.

Figure 18. Illustrative portfolio level benefit-cost analysis using risk modelling



Source: The Era of Risk is Already Here: We're Not Prepared, February 2025, https://www.synapse-energy.com/era-risk-already-here-were-not-prepared.

Notes: Net Benefits equal the Present Value Risk Reduction minus the Present Value Cost

Findings and Recommendations

The following table presents Synapse's findings, recommendations, and suggested timing for implementation of the recommendations.

[112] PG&E Risk Assessment and Mitigation Phase (RAMP) Report, May 15, 2024, PG&E-4, Table 4-5, p. 4-16.

Table 13. Summary of findings and recommendations for cost-effectiveness

Findings	Recommendations	Timing
14. NS Power does not adequately support its cost-effectiveness values.	NS Power should provide underlying documentation, analysis, and data to support its cost-effectiveness analysis. NS Power should assess the cost-effectiveness of individual vegetation management programs to develop more cost-effective approaches that can maximize reliability improvement for ratepayer expenditure.	Near-term
15. It is unclear how cost-effectiveness affects NS Power's decision-making or prioritization.	NS Power's Reliability Plan should demonstrate how the Company has incorporated cost-effectiveness considerations into its forecasted program expenditures.	Medium-term
16. Based on the data that is available, NS Power has not optimized its investment strategy for cost-effectiveness.	NS Power should incorporate cost-effectiveness into its Reliability Plan by developing an appendix featuring an alternative plan that shifts investment to tracks and sub-programs that have higher cost-effectiveness from tracks and sub-programs that have lower cost-effectiveness. In particular, based on the data provided, programs geared toward reduction in vegetation contact are the most cost-effective. NS Power should discuss any concerns related crew safety/availability constraints on the scaling of vegetation management related to this alternative plan.	Near-term
17. There is no benefit-cost analysis of the Reliability Plan.	NS Power should produce more granular estimates of reliability improvements by project and customer class, as these are key inputs into a benefit-cost analysis. NS Power should develop a benefit-cost analysis for its next Reliability Plan and one alternative plan based on (a) more granular estimates of reliability improvements by project and customer class and (b) its jurisdiction-specific values of lost load from the surveys of Residential and Commercial customers. NS Power could include additional benefits if reasonable and not overlapping with the VoLL.	Medium-term

Affordability Considerations

Overview of methodology

NS Power states that "affordability is a key consideration in determining the pace at which the Plan is implemented to mitigate upward rate pressure on NS Power customers."[113] The Plan also notes that balancing rate impacts remains a central challenge and that ongoing dialogue with stakeholders and the Board is necessary to align investment decisions with customer expectations.[114] NS Power did not present

an analysis of affordability as part of its Reliability Plan "given the number of variables impacting the reduction of future costs."[115]

In addition, NS Power stated that:

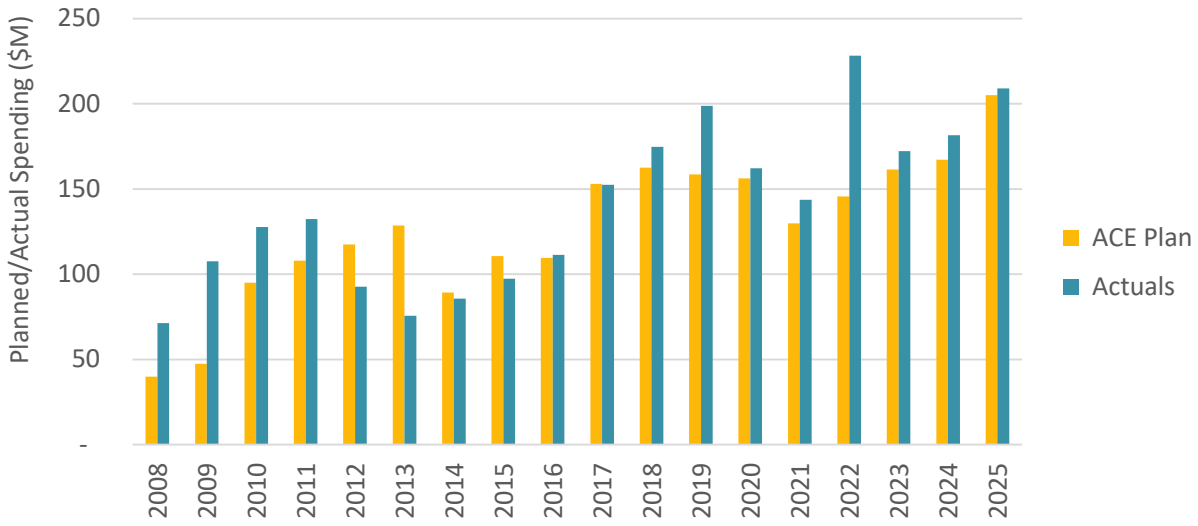
- The required investments are designed to meet the performance standards, though one way that affordability is factored into the Plan is in the pacing of those investments.[116]
- NS Power does not manage its ACE Plan in a way to invest a targeted amount of capital in reliability.[117]
- The Reliability Plan includes $1 billion in targeted equipment replacements and upgrades to maintain status quo reliability which is akin to avoiding a 0.26 increase in SAIDI over the five-year period.
- The actual reliability investments in each year are a combination of reactive and proactive investments. In years with significant storm events, reactive investments can represent a large proportion of total planned investments in reliability.[118]
- If significantly more reactive work occurs in a given year compared to the budgeted amount (due to a significant storm event) then "proactive work may be deferred due to a lack of resources available to complete the work."[119]

Evaluation of Methodology

Figure 19 below provides a comparison of ACE Plan budgets related to reliability to actual reliability spending from 2008 to 2025. NS Power exceeded its ACE Plan budgets by $125 million in the past five years or 16 percent on average. Actual expenditures in 2022, the most recent year with a significant storm event, exceeded the planned budget by $83 million or 57 percent.[120]

[113] IR-65
[114] Reliability Plan, p. 8.
[115] IR-65.
[116] IR-65 and IR-67.
[117] IR-70.
[118] IR-16.
[119] IR-70.
[120] IR-95.

Figure 19. Comparison of ACE Plan budgets to actual spending



Source: IR-95.

Findings and recommendations

NS Power has an incentive to spend more on reliability since it has been penalized for not meeting performance standards in recent years. NS Power may be spending more on capital as utilities earn profits for shareholders on capital expenditures. This incentive structure may result in significant spending on reliability and spending that may not be optimized to provide good reliability value for ratepayers.

We find that:

- Most of the Plan spending is capital investments to maintain status quo reliability and it is unclear that these investments are cost-effective as they provide a relatively small contribution to reliability.
- There is no requirement that the benefits of the Reliability Plan investments must exceed the costs.

We recommend the Board provide guidance on how to consider the significant investments in capital that may not provide commensurate reliability benefits. We also recommend that NS Power, the Board, and stakeholders consider how to optimize investments to account for the findings of the benefit-cost analysis, once it is available.

The following table summarizes Synapse's findings, recommendations, and suggested timing for implementation of the recommendations.

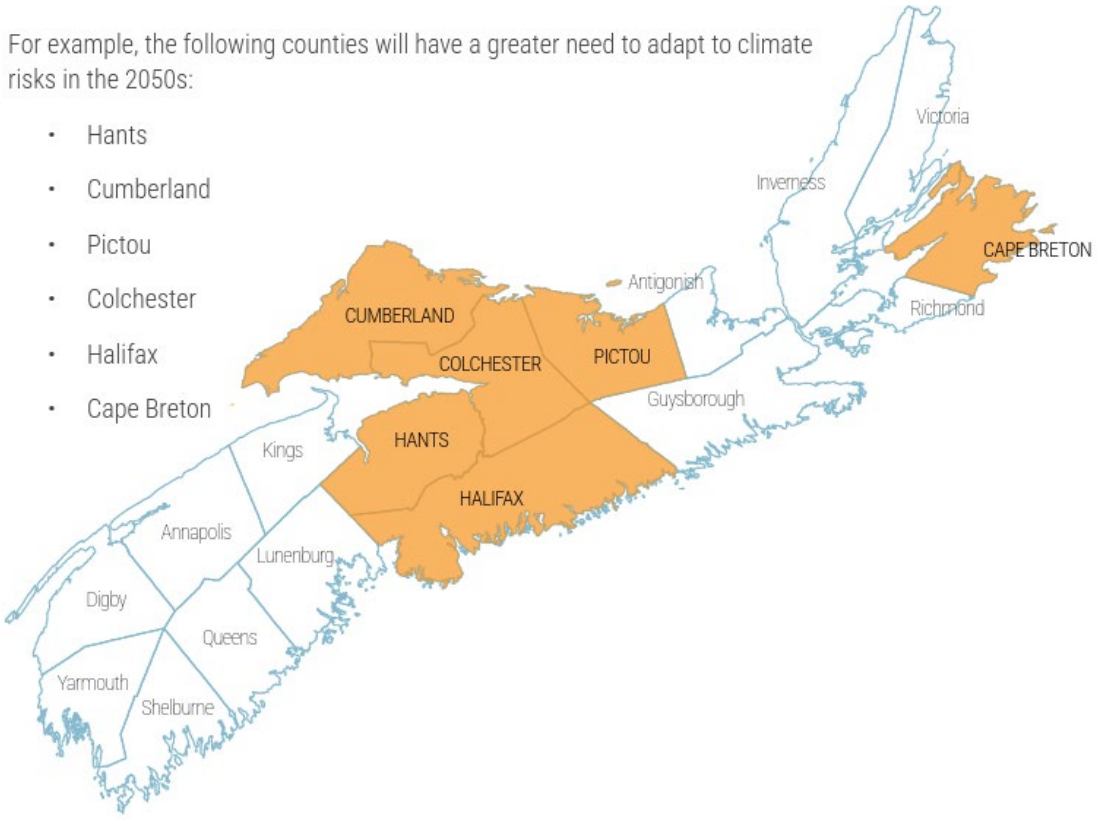
Table 14. Summary of findings and recommendations on affordability

Findings	Recommendations	Timing
18. Most of the Plan spending is capital investments to maintain status quo reliability and it is unclear that these investments are cost-effective as they provide a relatively small contribution to reliability.	We recommend the Board provide guidance on how to consider the significant investments in capital that may not provide commensurate reliability benefits.	Near-term
19. There is no requirement that the benefits of the Reliability Plan investments must exceed the costs.	NS Power, the Board, and stakeholders should consider how to optimize investments to account for the findings of the benefit-cost analysis.	Longer-term

Evaluation of Resilience Considerations

Nova Scotia's Climate Change Risk Assessment identifies an increase in the frequency and severity of tropical storms in the future. That risk is expected to be heightened in six counties as shown in Figure 20 below. Resilience is likely to become more important over time as the number of MEDs and EEDs related to tropical storms increase.

Figure 20. Counties of greatest risk in the 2050s



Source: Powering the Transition: Nova Scotia 2025 Climate Change Risk Assessment. Page 24. Available at: https://climatechange.novascotia.ca/sites/default/files/uploads/climate-change-risk--assessment-2025.pdf. Accessed: 6/10/26.

The Reliability Plan is focused on investments to improve reliability, in alignment with the systemwide reliability-centred goals of SAIDI and SAIFI without MEDs or EEDs. However, it is not clear if and how the Reliability Plan addresses planned outages which have increased significantly in recent years due to the increase in reliability investments.

NS Power states that the Reliability Plan is also intended to achieve the resilience goal of restoring service to a specific percentage of customers within 48 hours after SEDs, MEDs, and EEDs, through resilience co-benefits of the proposed reliability-focused investments. However, the contributions of the reliability investments to resilience are not quantified in the Reliability Plan. Also, there may be additional measures that are better able to address the resilience goal. We address these topics in this section.

Metrics to measure resilience

The 2026 ACE Plan Application lists the following potential categories of resilience metrics:

- Energy Not Supplied / Expected Energy Not Supplied (EENS)
- Pace of Performance Level Degradation
- Extent of Degraded System State
- Number or Percentage of Customers Impacted
- Time to Restore 90% and/or 100% of Customers / Normal Operating Level[121]

We suggest including more detail on how the Reliability Plan seeks to reduce the time to restore a specified percent of customers after SEDs, MEDs, and EEDs, as this metric best aligns with the existing resilience goal.

In the 2026 ACE Plan proceeding, NS Power argued that existing SAIDI and SAIFI metrics appropriately measure performance but was not opposed to additional metrics and variants of SAIDI/SAIFI to "further understand and evaluate reliability and system resiliency."[122] We agree that variants on the existing SAIDI and SAIFI performance metrics are useful for tracking resilience performance in the immediate term. These variants include SAIDI and SAIFI for MEDs and EEDs only and all-in SAIDI and SAIFI including MEDs and EEDs. For example, Commonwealth Edison's Annual Reliability Report includes SAIDI, SAIFI, and CAIDI

[121] Nova Scotia Energy Board. M12619. NS Power 2026 ACE Plan Application, p. 101.
[122] *Id.*

with and without major events.[123] The U.S. Energy Information Administration also publishes annual utility-specific SAIDI and SAIFI, with and without major events.[124]

Additionally, Table 15 below provides the U.S. Department of Energy's summary of performance metrics for evaluating power system resilience.[125] Several of these metrics focus on critical customers. If NS Power, NSEB, and stakeholders determine that resilience measures should be provided to a subset of customers such as critical customers, metrics that focus on the feeders or customers where resilience investments are implemented will better measure the performance of those investments.

Table 15. U.S. Department of Energy Summary of Performance-Based Resilience Metrics

Impact	Consequence Category	Resilience Metrics
DIRECT	Electric Service	Cumulative customer-hours of outages
		Cumulative customer energy demand not served
		Average number (or %) of customers experiencing an outage during a specified time
	Critical Electrical Service	Cumulative critical customer-hours of outages
		Critical customer energy demand not served
		Average number (or %) of critical loads that experience an outage
	Restoration	Time to recovery
		Cost of recovery
	Monetary	Loss of utility revenue
		Cost of grid damages (e.g., repair or replace lines, transformers)
		Cost of recovery
		Avoided outage cost
INDIRECT	Community Function	Critical services without power (e.g., hospitals, fire stations, police stations)
	Monetary	Loss of assets and perishables
		Business interruption costs
		Impact on the gross municipal product (GMP) or gross regional product (GRP)
	Other Critical Assets	Key production facilities without power
		Key military facilities without power

Source: IEEE Power & Energy Society. Technical Report PES-TR83. Resilience Framework, Methods, and Metrics for the Electricity Sector. Prepared by The IEEE Power & Energy Society Industry Technical Support Leadership Committee Task Force IE. October 2020. Table 2 – Performance-Based Metrics. Page 14.

[123] Commonwealth Edison Company. *2023 ComEd Electric Power Delivery Reliability Report*. Pages 7-9. Available at: https://icc.illinois.gov/api/web-management/documents/downloads/public/electric-reliability/ComEd%20Report%20YE%202023.pdf

[124] U.S. Energy Information Administration. Annual Electric Power Industry Report, Form EIA-861 detailed data files. Release date: October 7, 2026. Reliability_2025.xlsx. https://www.eia.gov/electricity/data/eia861/

[125] IEEE Power & Energy Society. Technical Report PES-TR83. *Resilience Framework, Methods, and Metrics for the Electricity Sector*. Prepared by The IEEE Power & Energy Society Industry Technical Support Leadership Committee Task Force IE. October 2020. Table 2 – Performance-Based Metrics. Page 14.

Resilience measures

Resilience measures allow customers to ride through events independently of the grid for a period of time, or to access life-sustaining services such as heating, clean water, refrigeration, and/or communications. For example, backup power and microgrids (or resilience hubs, which are community-centred facilities designed to support residents year-round and provide resources, coordination, and support during emergencies or disruptions) are not included in the Reliability Plan and may be beneficial for certain facilities or customers during long outages. Infrastructure investments targeted to areas likely to experience strong storms can also improve resilience. For example, undergrounding power lines substantially reduces the impact of large storms and tends to be more reliable than overhead lines (particularly given the prevalence of faults caused by vegetation contact). Covered conductor, or more insulated wire, is also better able to withstand high winds and vegetation contact compared with traditional conductor.[126]

Resilience targeting

These resilience-focused investments tend to be more expensive than alternatives. Therefore, it is important to carefully target these investments. The U.S. Department of Energy's Performance-Based Resilience Metrics include metrics focusing on critical customers and NS Power could consider whether to focus certain resilience investments on critical customers.

The following table summarizes Synapse's findings, recommendations, and suggested timing for implementation of the recommendations.

[126] PG&E estimates covered conductor is 67 percent effective at reducing wildfire ignition risk, which is caused by faults during risky wildfire weather conditions. See PG&E 2026-2028 Wildfire Mitigation Plan, p. 128, Table PG&E-6.1 3-1. Online: https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-base-wmp-vol-1-r3.pdf.

Table 16. Summary of findings and recommendations on resilience

Findings	Recommendations	Timing
20. It is unclear how the climate data in NS Power's Climate Adaptation Plan that was filed as part of the 2026-2027 General Rate Application ties to the Reliability Plan assumption of a 0.26 increase in SAIDI (or some subset of this increase that relates to a changing climate) over the plan period and why the Reliability Plan requires $1B in targeted equipment replacements and upgrades to address this increase in SAIDI.	NS Power should transparently provide (a) the historical and forward-looking climate data from the Climate Adaptation Plan and a description of how this data was used to calculate the climate-related increase in SAIDI, (b) the rationale behind the mitigations and expenditures selected to address climate-related issues.	Medium-term
21. NS Power is currently considering which metrics are appropriate for measuring resilience and is leaning toward variants of SAIDI and SAIFI for now.	Variants on the existing SAIDI and SAIFI performance metrics used to assess reliability at a system level, such as all-in SAIDI and SAIFI and MED/EED only SAIDI and SAIFI, are resilience metrics and are useful for tracking resilience performance in the immediate term. If critical customers are the targets for resilience measures, resilience metrics can be designed to focus on the feeders or customers who benefit from the improvements.	Longer-term
22. The Reliability Plan focuses on investments to improve reliability. It is not clear if and how the Reliability Plan addresses planned outages.	The next Reliability Plan should clarify if and how planned outages are addressed.	Longer-term
23. The Reliability Plan has systemwide performance targets and takes a systemwide perspective.	If the next Reliability Plan includes resilience-focused investments, they should be addressed separately from reliability-focused investments. As resilience-focused measures may cost more to implement, NS Power should utilize a more targeted approach for investments intended to improve resilience.	Longer-term
24. The Reliability Plan does not discuss how NS Power will improve the time it takes personnel to restore power after a major event.	NS Power should present historical and forecast data regarding restoration time and address how it plans to improve restoration time after an outage occurs, if applicable.	Near-term

SUMMARY OF FINDINGS AND RECOMMENDATIONS

In this section, we provide tables summarizing all findings and recommendations presented in the preceding sections of this report.

Proposed Investments and Investment Alternatives		
Findings	**Recommendations**	**Timing**
1. The methodology for determining future budgets is likely inaccurate and does not appropriately reflect changing system needs over time.	NS Power should revise its methodology for forecasting future budgets, which is currently based entirely on the ACE Plan for the first year. At minimum, NS Power should reflect known, large projects (greater than $1 million) in its forecast. It should also forecast how it expects changing system needs to alter program allocations.	Longer-term
2. NS Power reported anticipated 2025 year-end expenditures, 2026 forecasted ACE Plan investment, and 2025-2029 Reliability Plan forecasted expenditures as part of Appendix G in its 2026 ACE Plan filing. However, the data is not well summarized, does not include actual expenditures once each year is complete, and should incorporate all spending on reliability.	The data in Appendix G should be supplemented with: (a) a summary table with breakouts for each sub-program and each year of the Reliability Plan, (b) actual ACE Plan expenditures in place of anticipated-year-end ACE Plan expenditures, once each year is complete, (c) incremental costs of approved ATO requests and storm rider costs, once each year is complete, and (d) explanations for why actual expenditures for reliability, inclusive of all reliability-related expenditures, varied relative to the ACE and reliability plans.	Near-term
3. The Plan does not adequately prioritize programs that seek to reduce faults from vegetation, which is the primary driver of reliability issues in NS Power's service territory.	NS Power should analyze whether allocating more funding to vegetation management programs would provide more reliability improvement than the current allocation which prioritizes equipment upgrades and other capital expenditures. An independent, third-party audit of NS Power's vegetation management programs should be conducted and should provide recommendations on approaches, practices, or tools from other utilities that would help NS Power optimize its vegetation management programs. The study should also examine whether additional resources and funding can and should be reprioritized from other programs to improve reliability in a cost-effective manner.	Near-term
4. The allocation of funds among vegetation management programs may not maximize reliability improvements.	NS Power should analyze its vegetation management programs to ensure funding is allocated appropriately.	Near-term
5. The Company did not provide evidence that it considered alternative portfolios to the Reliability Plan and why it did not pursue them.	NS Power should examine alternative plan portfolios.	Longer-term

Feeder Scoring and Prioritization		
Findings	**Recommendations**	**Timing**
6. Feeder risk scores do not provide adequate differentiation for feeder prioritization.	NS Power's risk prioritization framework should allow for much greater differentiation in risk scores to facilitate targeting programs to the highest risk feeders. NS Power could use risk units to calculate scores which should help it better understand relative reliability risk across its service territory. Further, risk models can inform cost-effectiveness analyses at both the feeder and system level.	Near-term
7. NS Power's actual feeder prioritization differs, in some instances, from the Reliability Plan.	NS Power should continue to track and present information to the Board in the ACE Plan process regarding how its prioritization of feeders differs from the Reliability Plan. This should include an explanation of why certain feeders were reprioritized and whether and why NS Power deviated from its feeder prioritization methodology. Appendix B to Appendix G of the 2026 ACE Plan provides a starting point, and should be modified to add the following information for each feeder, which may also be filed electronically: feeder kilometers, why additional feeders are addressed (reactive work, higher risk score, etc.), risk score in the Plan, current risk score, whether the circuit is a worst performing circuit, and recorded cost for each feeder by program. The table should include all feeders targeted in the five-year Reliability Plan for all programs, including each vegetation management program (these are combined in Appendix B).	Near-term
8. NS Power may not adequately incorporate community-level feedback on experiences and needs into its prioritization methodology.	NS Power's Reliability Plan should provide more transparency into its community-level engagement activities, needs that are identified by communities, and whether and how the Plan addresses the identified needs.	Longer-term

Feeder Scoring and Prioritization		
Findings	**Recommendations**	**Timing**
9. NS Power does not have data on the location of critical facilities and does not indicate the extent to which the Plan improves service for critical facilities.	NS Power should gather data on the location of critical facilities in its service territory and whether critical facilities have backup power. NS Power can then assess whether including data on critical facilities in feeder prioritization is appropriate.	Medium-term
10. NS Power does not assess disparities in reliability for vulnerable and priority customers and communities or address disparities in its risk scoring or prioritization.	NS Power should investigate whether there are disparities in reliability for vulnerable or priority customers and communities. Whether and how to address any disparities in reliability for vulnerable or priority customers and communities likely requires input from the Board and other stakeholders.	Medium-term

Reliability Improvement Estimates		
Findings	**Recommendations**	**Timing**
11. Synapse could not verify NS Power's estimates of reliability performance improvements and diminishing returns presented in its Reliability Plan.	NS Power must support its estimates of reliability improvements and diminishing returns pursuant to its Plan with sound analysis and data. NS Power should provide a more detailed methodology and analysis to support its reliability improvement estimates in the Company's next Plan. Since this component of the Plan is critical, Synapse also recommends a third-party review of the methodology and analysis.	Medium-term
12. Reliability improvement estimates are high-level in that they cover multiple sub-projects in combination.	The Company should develop transparent methodologies to estimate expected reliability improvements for each individual program proposed in the Reliability Plan, rather than in aggregate for multiple programs.	Medium-term
13. Reliability improvement estimates are not available at the feeder or project level.	The Company should develop transparent methodologies and analysis to estimate expected reliability improvements at the feeder or project level based on its Reliability Plan. This is also necessary for feeder- or project-level cost-effectiveness analysis. Feeder-level analysis would provide significantly greater insight into how NS Power prioritizes feeders and selects mitigations to address the primary reliability causes.	Longer-term

Cost-Effectiveness		
Findings	**Recommendations**	**Timing**
14. NS Power does not adequately support its cost-effectiveness values.	NS Power should provide underlying documentation, analysis, and data to support its cost-effectiveness analysis. NS Power should assess the cost-effectiveness of individual vegetation management programs to develop more cost-effective approaches that can maximize reliability improvement for ratepayer expenditure.	Near-term
15. It is unclear how cost-effectiveness affects NS Power's decision-making or prioritization.	NS Power's Reliability Plan should demonstrate how the Company has incorporated cost-effectiveness considerations into its forecasted program expenditures.	Medium-term
16. Based on the data that is available, NS Power has not optimized its investment strategy for cost-effectiveness.	NS Power should incorporate cost-effectiveness into its Reliability Plan by developing an appendix featuring an alternative plan that shifts investment to tracks and sub-programs that have higher cost-effectiveness from tracks and sub-programs that have lower cost-effectiveness. In particular, based on the data provided, programs geared toward reduction in vegetation contact are the most cost-effective. NS Power should discuss any concerns related crew safety/availability constraints on the scaling of vegetation management related to this alternative plan.	Near-term
17. There is no benefit-cost analysis of the Reliability Plan.	NS Power should produce more granular estimates of reliability improvements by project and customer class, as these are key inputs into a benefit-cost analysis. NS Power should develop a benefit-cost analysis for its next Reliability Plan and one alternative plan based on (a) more granular estimates of reliability improvements by project and customer class and (b) its jurisdiction-specific values of lost load from the surveys of Residential and Commercial customers. NS Power could include additional benefits if reasonable and not overlapping with the VoLL.	Medium-term

Affordability		
Findings	**Recommendations**	**Timing**
18. Most of the Plan spending is capital investments to maintain status quo reliability and it is unclear that these investments are cost-effective as they provide a relatively small contribution to reliability.	We recommend the Board provide guidance on how to consider the significant investments in capital that may not provide commensurate reliability benefits.	Near-term
19. There is no requirement that the benefits of the Reliability Plan investments must exceed the costs.	NS Power, the Board, and stakeholders should consider how to optimize investments to account for the findings of the benefit-cost analysis.	Longer-term

Resilience		
Findings	**Recommendations**	**Timing**
20. It is unclear how the climate data in NS Power's Climate Adaptation Plan that was filed as part of the 2026-2027 General Rate Application ties to the Reliability Plan assumption of a 0.26 increase in SAIDI (or some subset of this increase that relates to a changing climate) over the plan period and why the Reliability Plan requires $1B in targeted equipment replacements and upgrades to address this increase in SAIDI.	NS Power should transparently provide (a) the historical and forward-looking climate data from the Climate Adaptation Plan and a description of how this data was used to calculate the climate-related increase in SAIDI, (b) the rationale behind the mitigations and expenditures selected to address climate-related issues.	Medium-term
21. NS Power is currently considering which metrics are appropriate for measuring resilience and is leaning toward variants of SAIDI and SAIFI for now.	Variants on the existing SAIDI and SAIFI performance metrics used to assess reliability at a system level, such as all-in SAIDI and SAIFI and MED/EED only SAIDI and SAIFI, are resilience metrics and are useful for tracking resilience performance in the immediate term. If critical customers are the targets for resilience measures, resilience metrics can be designed to focus on the feeders or customers who benefit from the improvements.	Longer-term
22. The Reliability Plan focuses on investments to improve reliability. It is not clear if and how the Reliability Plan addresses planned outages.	The next Reliability Plan should clarify if and how planned outages are addressed.	Longer-term
23. The Reliability Plan has systemwide performance targets and takes a systemwide perspective.	If the next Reliability Plan includes resilience-focused investments, they should be addressed separately from reliability-focused investments. As resilience-focused measures may cost more to implement, NS Power should utilize a more targeted approach for investments intended to improve resilience.	Longer-term
24. The Reliability Plan does not discuss how NS Power will improve the time it takes personnel to restore power after a major event.	NS Power should present historical and forecast data regarding restoration time and address how it plans to improve restoration time after an outage occurs, if applicable.	Near-term

APPENDIX A: TERMS OF REFERENCE

Introduction and Background

In the Board's decision on the 2023 Annual Performance Standards (M11624), the Board directed that:

> …a comprehensive written version of NS Power's five-year reliability plan is needed to understand how service improvements will be achieved and against which progress in achieving the performance goals can be tracked. This plan must include specific actions and related timing, demonstrate why these specific investments were selected and quantify the level of reliability or resilience improvement expected from each investment.

NS Power's Reliability Plan recommends $200 million to $300 million annually between 2025 and 2029, for a total investment of $1.3 billion. The Plan proposes investments in three programs:

1) storm hardening – equipment replacement (73% of total budget),
2) storm hardening – vegetation management (21% of total budget), and
3) advanced grid modernization (6% of total budget).

The Plan projects a reduction in SAIFI and SAIDI based upon the total investment. NS Power defines several performance goals:

- Reduce SAIDI by 20 percent from the current five-year average of 5.10 (reaching 4.10 in 2029)
- Achieve the Performance Standards SAIFI target of 2.05
- Achieve the Performance Standards for restoring service to customers within 48 hours after a Major Event.

Synapse was hired by the Board to assess NS Power's Five-Year Reliability Plan and summarize our findings in a report. Synapse will seek to answer key questions, including:

- How did NS Power determine the type and scale proposed investments in its Five-Year Reliability Plan?
    - What criteria were used to evaluate the scope and scale of investments?
    - Did NS Power examine practices at similar or peer utilities? How did this inform the Reliability Plan?
    - What root causes or drivers of reliability issues were examined to determine system and feeder-level solutions? How was this examination performed and was it sufficiently robust to support the proposed mitigations?

- Did NS Power solicit input on reliability concerns from particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers? If so, how?

- Did NS Power analyze disparities in reliability experienced by particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, critical facilities, customers with or required to have backup power, and/or industrial customers? If so, how?

- Did NS Power design its Plan to address disparities in reliability for certain populations, including but not limited to the Mi'kmaq of Nova Scotia and vulnerable customers? If so, how?

- Is the level of investment proportional to the reliability challenges faced by the jurisdiction and the opportunity for improvement?

- What criteria were used to prioritize investments?

  - What considerations were used to determine and prioritize investments? What weight did NS Power give to each of these considerations in the prioritization?

  - Did NS Power target or consider how reliability investments affect particular communities customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers? If so, how?

  - Does the NS Power Reliability Plan maximize benefits and minimize costs? If so, how?

  - Does the NS Power Reliability Plan consider affordability, including rate and bill impacts for a representative range of customer classes? If so, how?

  - Did NS Power study and/or consider the impacts of its proposed vegetation management and infrastructure plans on the livelihood of the Mi'kmaq of Nova Scotia including the land, mineral, plant and other natural resources, and animals upon which the Mi'kmaq of Nova Scotia depend for survival and economic well-being? If so, how?

- How did NS Power estimate impacts on key reliability metrics?

- Will improvements to reliability be measured over time and incorporated into NS Power's Five-Year Reliability Plan in future years? How will this be accomplished?

- Were any alternative plans considered? If so, what were the alternatives and why was this Plan selected over the other(s)?

Synapse will ask discovery to NS Power for data, including but not limited to the following:

- NS Power inputs, assumptions, and results, ideally at the feeder level, regarding benefits and costs of proposed investments
- Reliability data for the system as a whole, by feeder, and aggregated for feeders serving certain populations, including but not limited to the Mi'kmaq of Nova Scotia and vulnerable customers
- Criteria and considerations used to inform the solutions selected, investment levels, and prioritization, including but not limited to the impacts on the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and industrial customers
- Information collected regarding backup power, including but not limited to the Mi'kmaq of Nova Scotia, vulnerable customers, and/or populations that experience poor reliability

Synapse will also review and consider the following:

- NS Power's annual performance standards and reports.
- Relevant Board Decisions impacting reliability investments, such as M11692 – 2025 Storm Cost Recovery Rider.
- 2025 Annual Capital Expenditure Plan (M12012).
- EA Technologies September 2023 Asset Management Review for the Board, and other subsequent reviews and utility updates.
- Synapse experience with practices and lessons learned in other utilities.
- Approaches NS Power has applied to date to solicit input from, analyze the impacts to, and apply solutions related to the Reliability Plan that both recognize and improve the experiences of the Mi'kmaq of Nova Scotia as Section 35 constitutionally protected rights holders.

The remainder of this TOR is organized as follows:

1) Scope of TOR
2) Proposed Review Process and Tentative Schedule
3) Detailed Description of Key Steps in the Process

Scope of TOR

Synapse will include the following topics in its assessment:

- Review of NS Power's historical reliability performance standards and current SAIDI and SAIFI targets.
    - Review and summary of recent NS Power annual performance standards report, including annual targets and modifications over time.
    - Summary of NS Power's performance relative to targets.
    - Assessment of the extent to which NS Power has analyzed or could analyze the reliability experienced by particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers.
    - Review of NS Power's methodology for establishing the stated performance goals and analysis of how performance improvements were determined, including how current vegetation management practices are expected to improve reliability within and beyond the utility rights-of-way.
    - Comparison of NS Power reliability to like Canadian and U.S. utilities to put the types and level of threat, proposed level of investment, and reliability performance in perspective (using publicly available data). Synapse will work with NS Power to select like utilities based on factors such as geography, topography, environment, weather and climate, customer density, regulatory or political drivers, and utility infrastructure.
    - Recommendations on how to evaluate progress against the goals in the near- and long-terms and whether and the extent to which the investments proposed in NS Power's Five-Year Reliability Plan will help achieve 2025 performance targets.
- Assessment of how NS Power selects and prioritizes reliability improvements in its Five-Year Reliability Plan.
    - Assessment if and how NS Power solicited input on reliability concerns and potential solutions from particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers.
    - Assess, where data is available, the prioritization criteria, prioritization methodology, asset level prioritization, and any special considerations given for different customer types, levels of customer criticality, and/or specific geographies.
    - Assessment of if and how the investment plan is designed to address disparities in reliability experienced by particular communities, customer types, or

customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers.

    - Determine if and how NS Power is accounting for backup power in their estimates of reliability impacts of various investments.

- Assessment of NS Power's proposed investment costs and benefits to determine the extent to which NS Power has maximized benefits and minimized costs of its Reliability Plan in a manner that is in public interest.

    - Definition of cost-effectiveness and associated metric(s) for assessment.

    - Evaluation of data and analysis completed by NS Power to estimate costs and benefits.

    - Assessment of whether NS Power applied the Project Delivery Model to this Reliability Plan, especially the cost minimization practices.

    - Assessment of types of benefits included such as reductions in operational, maintenance, or capital expenditures and avoided storm response or outage management costs.

    - Assessment of, where data is available, the extent to which the benefits accrue to the utility and its customers.

    - Assessment of, where data is available, the degree to which different customers are expected to benefit from proposed reliability improvements.

    - Assessment of the materialization of benefits to specific locations and worst performing circuits, to the extent data is available.

    - Provide guidance to the Board regarding how and whether to consider VoLL based on residential and/or non-residential studies specific to NS (as available) or data from other Canadian utilities, such as Alberta Electric System Operator and the Independent Electricity System Operator in Ontario (as placeholders, if NS-specific data is not available).

- Assessment of affordability, with consideration of a range of customer classes.

    - Definition of affordability and associated metric(s) for assessment.

    - Estimates of rate and bill impacts for several illustrative customer classes.

    - Assessment of data specific to low-income customers, and identification of avenues for consideration of low-income customers in planning and prioritization.

- Assessment of scenarios to maximize reliability improvements through cost-effectiveness analysis and consideration of ways to minimize rate and bill impacts. This may include:
    - Reprioritization of proposed solutions and/or impacts to particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers.
    - Changes to the magnitude of investments in proposed solutions and/or service quality improvements for particular communities, customer types, or customers classes, including but not limited to the Mi'kmaq of Nova Scotia, customers who are medically dependent on electricity, low-income customers, communities served by equipment that is overloaded or feeders that are constrained, critical facilities, customers with or required to have backup power, and/or industrial customers.
    - Consideration of solutions not included in the analysis, such as non-wires alternatives including backup power.
    - Changes to the timing of proposed investments and expenditures.

Proposed Review Process and Schedule

This proposed review process and schedule enables Synapse to complete this assessment in time for NS Power to incorporate key findings and recommendations from our final report into its 2027 ACE Plan.

Steps of the Review Process	Schedule
Notices of participation	December 2, 2025
Synapse sends draft TOR to participants	January 20, 2026
Initial virtual technical conference	January 27, 2026
Participant written feedback to Synapse on draft TOR	February 13, 2026
Filing of final TOR	March 13, 2026
Information requests to NS Power – set 1	April 1, 2026*
Responses to information requests from NS Power – set 1	May 8, 2026*
Information requests to NS Power – set 2	May 22, 2026*
Responses to information requests from NS Power – set 2	June 12, 2026*
Draft report by Synapse to participants, including preliminary findings and recommendations	July 21, 2026*
Second virtual technical conference	August 11, 2026, 12-2 at*
Participants provide written feedback on Synapse report	September 18, 2026*
Filing of final Synapse report, including final findings and recommendations	October 26, 2026*

** Updated to reflect changes made in the schedule after finalization of the Terms of Reference.*

Detailed Description of Key Steps in the Process

- Initial Virtual Technical Conference: A two-hour technical conference will be held to allow for discussion of issues and potential solutions after participants review the draft TOR.

- Written Comments on draft TOR: Approximately three weeks after the initial technical conference, stakeholders and NS Power will provide written comments to Synapse on the elements included in the scope of the draft TOR and the extent to which these or other additional elements require review.

- Filing of final TOR: Synapse will consider participant feedback on the draft TOR and finalize the TOR with the Board.

- Information Requests from Synapse to NS Power: After filing the final TOR, Synapse will need to submit information requests to NS Power to further understand the methods and assumptions behind the Reliability Plan.

- Sharing of Draft Report with Participants: Synapse will write a draft report assessing the Five-Year Reliability Plan, including preliminary findings and recommendations that are actionable in the immediate term. Participants will be invited to submit comments on the draft report. As there is limited time between the issuance of the final report and NS Power's 2027 ACE Plan filing, NS Power can begin to consider and apply the immediately actionable findings and recommendations in its 2027 ACE Plan.

- Second Virtual Technical Conference: Synapse will hold a second two-hour technical conference to discuss the draft report and address any suggested refinements and to discuss proposed modifications to NS Power's Reliability Plan. Following the technical conference, participants will again have an opportunity to provide further written comments.

- Written comments on Synapse's draft report: Approximately three weeks after the second technical conference, stakeholders and NS Power will provide written comments to Synapse on the draft report.

- Final Synapse Report: A final version of the Synapse report with findings and recommendations on NS Power's Reliability Plan will be filed with the Board and parties will be invited to file submissions or comments with the Board. At this point, the Board will also determine if an oral hearing is needed prior to issuing a decision in this matter.

APPENDIX B. SUMMARY OF FEEDBACK AND RESPONSES

In this section, Synapse provides tables summarizing the feedback received from stakeholders and the updates to the report in response to this feedback. The section begins with tables specific to each finding and recommendation. Tables specific to each commenter follow, with comments that were not directly tied to a finding and recommendation and feedback that was submitted as questions. It is important to note that Synapse does not directly address every comment made by stakeholders in these tables. Rather, the tables are intended to summarize the feedback and Synapse's response to it.

#1		
FINDING: The methodology for determining future budgets is likely inaccurate and does not appropriately reflect changing system needs over time. **RECOMMENDATION:** NS Power should revise its methodology for forecasting future budgets, which is currently based entirely on the ACE Plan for the first year. At minimum, NS Power should reflect known, large projects (greater than $1 million) in its forecast. It should also forecast how it expects changing system needs to alter program allocations. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Partially disagrees. The ACE Plan contains detailed planned capital investments. Tetra Tech: Finds that NS Power applies conventional methodologies for budget estimates, and has actively adjusted practices in response to events. Also, finds NS Power's practices are consistent with other comparable Canadian utilities.	No change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided.
Consumer Advocate	Agrees. Questions why Synapse treats this as a longer-term recommendation. Believes NS Power could implement an improved methodology in the 2027 or 2028 ACE Plans.	
Industrial Group	Requests a defined progress review ahead of the 2028 ACE Plan and NS Power justification for continued spending.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#2		
FINDING: NS Power reported anticipated 2025 year-end expenditures, 2026 forecasted ACE Plan investment, and 2025-2029 Reliability Plan forecasted expenditures as part of Appendix G in its 2026 ACE Plan filing. However, the data is not well summarized, does not include actual expenditures once each year is complete, and should incorporate all spending on reliability. **RECOMMENDATION:** The data in Appendix G should be supplemented with: (a) a summary table with breakouts for each sub-program and each year of the Reliability Plan, (b) actual ACE Plan expenditures in place of anticipated-year-end ACE Plan expenditures, once each year is complete, (c) incremental costs of approved ATO requests and storm rider costs, once each year is complete, and (d) explanations for why actual expenditures for reliability, inclusive of all reliability-related expenditures, varied relative to the ACE and Reliability Plans. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. States the finding does not reflect reporting mechanisms in the ACE process, specifically historical-versus-forecast reporting in Appendix G of the ACE Plan. Tetra Tech: Notes that this exists in Appendices D and G of the ACE Plan.	Modified the finding and recommendation. Synapse agrees that the finding does not appropriately reflect the existing reporting Appendix G of the 2026 ACE Plan.
Consumer Advocate	Agrees.	
Industrial Group	No comment.	
Small Business Advocate	No comment; questions related to this finding appear in the SBA table.	
Mi'kmaq	No comment.	

#3

FINDING: The Plan does not adequately prioritize programs that seek to reduce faults from vegetation, which is the primary driver of reliability issues in NS Power's service territory.

RECOMMENDATION: NS Power should analyze whether allocating more funding to vegetation management programs would provide more reliability improvement than the current allocation which prioritizes equipment upgrades and other capital expenditures. An independent, third-party audit of NS Power's vegetation management programs should be conducted and should provide recommendations on approaches, practices, or tools from other utilities that would help NS Power optimize its vegetation management programs. The study should also examine whether additional resources and funding can and should be reprioritized from other programs to improve reliability in a cost-effective manner.

TIMING: Near-term

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Disagrees: States that Synapse incorrectly assumes that investment allocation should be directly proportional to historical outage causes and notes that the report does not adequately recognize the role substation and transmission upgrades serve to improve reliability. Tetra Tech: Agrees that vegetation contact is the largest contributor to reliability issues and provides examples of peer Canadian utilities and states NS Power is comparable with these utilities. States NS Power has scalability restrictions that prohibit further expansion.	Modified the recommendation to address the fact that Synapse does not have access to the data to examine scalability restrictions and recommends an independent audit to assist with optimization of vegetation management investments. Synapse supplemented the report with information comparing overall vegetation management expenditures and cycle length from peer Canadian utilities. These comparisons further support Synapse's finding and recommendation.
Consumer Advocate	Agrees; qualifies this based on concerns regarding Synapse's analysis of how funds are allocated among vegetation programs.	
Industrial Group	Agrees that shifting funding toward vegetation management is likely the most cost-effective and affordability-friendly path available. Notes that NS Power treats corridor widening as capital and trimming as O&M and recommends that Synapse elaborate and examine whether another capitalization treatment would remove this incentive distortion.	

#3		
FINDING: The Plan does not adequately prioritize programs that seek to reduce faults from vegetation, which is the primary driver of reliability issues in NS Power's service territory. **RECOMMENDATION:** NS Power should analyze whether allocating more funding to vegetation management programs would provide more reliability improvement than the current allocation which prioritizes equipment upgrades and other capital expenditures. An independent, third-party audit of NS Power's vegetation management programs should be conducted and should provide recommendations on approaches, practices, or tools from other utilities that would help NS Power optimize its vegetation management programs. The study should also examine whether additional resources and funding can and should be reprioritized from other programs to improve reliability in a cost-effective manner. **TIMING:** Near-term		
Party	**Feedback**	**Response**
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#4		
FINDING: The allocation of funds among vegetation management programs may not maximize reliability improvements. **RECOMMENDATION:** NS Power should analyze its vegetation management programs to ensure funding is allocated appropriately. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees; states that the conclusion rests on unit-cost comparisons without considering risk reduction effectiveness. States that it selects the most appropriate activity for specific circumstances, and is comparable to other Canadian utility practices. Tetra Tech: States that NS Power's allocation is informed by satellite imagery and artificial intelligence; it has also been adjusted to incorporate wildfire mitigation and hurricane impacts. Claims the approach is comparable to the Optimal Cycle Protocol implemented by Hydro One and is more granular in terms of certain data inputs.	No change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided. Synapse supplemented the report with information comparing overall vegetation management expenditures and cycle length from peer Canadian utilities. These comparisons further support Synapse's finding and recommendation.
Consumer Advocate	Does not believe finding is adequately supported. Synapse needs to evaluate the effectiveness of individual programs in greater detail, considering not only outage prevention but restoration costs/timing and other benefits, as well as specific practices and outcomes.	
Industrial Group	Recommends verifying sub-program cost-effectiveness data independently and pressing NS Power for program-level data so the reallocation case rests on verified figures. Also, recommends that Synapse quantify the 146 percent unit-cost differential's effectiveness implication by estimating the relative outage-reduction effectiveness of distribution corridor widening versus trimming/removal, to support (or refine) the reallocation recommendation.	
Small Business Advocate	No comment; questions related to this finding appear in the SBA table.	
Mi'kmaq	No comment.	

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Disagrees; states load growth and reliability investments are not mutually exclusive, and that these investments provide certain reliability benefits and should therefore be included in the Plan. Tetra Tech: Notes that NS Power already excludes certain new customer costs and upgrade costs related to load growth and that NS Power's approach of categorizing investments based on primary reliability benefits is comparable to other Canadian utilities.	Removed the finding and recommendation from the final report. Synapse agrees with NS Power and Tetra Tech's concerns with this recommendation.
Consumer Advocate	Conditionally agrees. NS Power suggested at the workshop that Synapse may have misunderstood the issue. If it is not a misunderstanding, considers the finding/recommendation appropriate.	
Industrial Group	NS Power stated that new substations serve both load growth and reliability. Recommends proposing a concrete cost-allocation methodology, or requiring NS Power to provide one, rather than leaving this recommendation open to project-by-project dispute.	
Small Business Advocate	No comment; questions related to this finding appear in the SBA table.	
Mi'kmaq	No comment.	

#5		
FINDING: The Company did not provide evidence that it considered alternative portfolios to the proposed Reliability Plan. **RECOMMENDATION:** NS Power should examine alternative plan portfolios. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. Acknowledges that the Plan contains limited discussion of how alternatives analyses contribute to the overall reliability strategy and notes that alternative solutions are routinely considered at the individual asset level as reliability risks are assessed and mitigated through NS Power's ACE Plans. Tetra Tech: No comment.	Modified the finding and recommendation to focus on consideration for alternative plan portfolios. Clarified the language in the finding and in the report that this refers to alternatives at the portfolio level for the Reliability Plan.
Consumer Advocate	Finding/recommendation needs clarification. If "alternatives" simply means different funding allocations among existing programs, it duplicates other recommendations. Synapse should investigate alternatives within programs that NS Power overlooked or inadequately pursued.	
Industrial Group	Recommends that Synapse distinguish between project-level alternatives analysis and portfolio-level alternatives analysis, emphasize that deferring alternatives analysis entirely to ACE filings does not satisfy this at the Plan level, reclassify timing to near-term given the urgency the Board placed on alternatives analysis, and run a sensitivity analysis on reallocation of shifting corridor-widening funds to trimming/removal.	
Small Business Advocate	No comment; questions related to this finding appear in the SBA table.	
Mi'kmaq	No comment.	

#6		
FINDING: Feeder risk scores do not provide adequate differentiation for feeder prioritization. **RECOMMENDATION:** NS Power's risk prioritization framework should allow for much greater differentiation in risk scores to facilitate targeting programs to the highest risk feeders. NS Power could use risk units to calculate scores which should help it better understand relative reliability risk across its service territory. Further, risk models can inform cost-effectiveness analyses at both the feeder and system level. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. The existence of feeders with similar scores does not mean that the methodology is ineffective or cannot identify the highest risk assets. Synapse's assessment appears to treat the feeder risk score as though it directly determines investment approval, which is inaccurate. Tetra Tech: No comment.	No change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided.
Consumer Advocate	Finding is clear, but its significance is not established, and "risk units" is unclear. Synapse should broaden the analysis to connect risk assessment with planning/budgeting, cost minimization, risk management, and project execution, including projects/routines not driven by feeder risk scores.	
Industrial Group	Recommends that Synapse provide a worked, NS Power-specific example of the proposed risk-unit feeder scoring, since the current illustration uses hypothetical values only.	
Small Business Advocate	No comment; questions related to this finding appear in the SBA table.	
Mi'kmaq	No comment.	

#7

FINDING: NS Power's actual feeder prioritization differs, in some instances, from the Reliability Plan.

RECOMMENDATION: NS Power should continue to track and present information to the Board in the ACE Plan process regarding how its prioritization of feeders differs from the Reliability Plan. This should include an explanation of why certain feeders were reprioritized and whether and why NS Power deviated from its feeder prioritization methodology. Appendix B to Appendix G of the 2026 ACE Plan provides a starting point, and should be modified to add the following information for each feeder, which may also be filed electronically: feeder kilometers, why additional feeders are addressed (reactive work, higher risk score, etc.), risk score in the Plan, current risk score, whether the circuit is a worst performing circuit, and recorded cost for each feeder by program. The table should include all feeders targeted in the five-year Reliability Plan for all programs, including each vegetation management program (these are combined in Appendix B).

TIMING: Near-term

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Agrees. Reprioritization of feeder reliability investments as detailed in the Plan should be tracked and reported. This information is already provided in the annual updates in the ACE Plan. Tetra Tech: No comment.	Modified the recommendation to reflect that this information should be provided in the ACE Plan process.
Consumer Advocate	Agrees.	
Industrial Group	Agrees; feeder prioritization methodologies should be sufficiently transparent to permit stakeholders and the Board to understand how reliability investments are targeted. The recommendation for enhanced reporting of feeder reprioritization and deviations from planned investment is reasonable.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#8		
FINDING: NS Power may not adequately incorporate community-level feedback on experiences and needs into its prioritization methodology. **RECOMMENDATION:** NS Power's Reliability Plan should provide more transparency into its community-level engagement activities, needs that are identified by communities, and whether and how the Plan addresses the identified needs. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Agrees. Notes that customers can engage directly with members of NS Power's reliability team and that customer feedback can be valuable in providing more information around asset condition and adjusting specific projects within communities already identified through the asset management framework. Also notes that risk-based decision-making should not primarily rely on feedback from customers. Tetra Tech: No comment.	No significant change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided.
Consumer Advocate	Generally agrees, but Synapse should explain what types of community feedback would improve the Reliability Plan and what benefits would result.	
Industrial Group	No comment.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#9		
FINDING: NS Power does not have data on the location of critical facilities and does not indicate the extent to which the Plan improves service for critical facilities. **RECOMMENDATION:** NS Power should gather data on the location of critical facilities in its service territory and whether critical facilities have backup power. NS Power can then assess whether including data on critical facilities in feeder prioritization is appropriate. **TIMING:** Medium-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Partially disagrees and disagrees. Notes that there is no consistent definition of "Critical Infrastructure" in Nova Scotia. Agrees that engagement with the Province, EMO, and other stakeholders could be useful. Also notes that the primary purpose of the Reliability Plan is to improve systemwide reliability performance and achieve the reliability standards established by the Board, not to address the performance of individual facilities. Incorporating facility-specific prioritization into reliability investment decisions would require careful consideration of the potential trade-offs. Tetra Tech: No comment.	Modified the finding and recommendation to include consideration of whether data on critical facilities should be accounted for in the Plan.
Consumer Advocate	Agrees; recommends expanding the analysis to include how targeting feeders serving critical facilities affects overall reliability goals and whether this information should inform customer curtailment and service-restoration priorities during events.	
Industrial Group	No comment.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#10		
FINDING: NS Power does not assess disparities in reliability for vulnerable and priority customers and communities or address disparities in its risk scoring or prioritization. **RECOMMENDATION:** NS Power should investigate whether there are disparities in reliability for vulnerable or priority customers and communities. Whether and how to address any disparities in reliability for vulnerable or priority customers and communities likely requires input from the Board and other stakeholders. **TIMING:** Medium-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. While NS Power recognizes the importance of providing reliable service to all customers and communities, this recommendation does not reflect the structure of the current regulatory or legal framework. Also, NS Power does not agree that the analysis presented supports a finding of a reliability disparity specific to Mi'kmaq communities. Tetra Tech: No comment.	Modified the recommendation to clarify that any action related to addressing disparities will require input from additional stakeholders and decision makers, including but not limited to the Board.
Consumer Advocate	Notes NS Power's position that this is outside its statutory mandate. If Synapse retains its analysis, it should compare affected communities/ feeders with feeders that received investment or priority status and clarify its characterization of feeders serving Mi'kmaq communities.	
Industrial Group	Recommends that Synapse carefully frame any recommendations in this regard and address applicable jurisdictional or legislative considerations, so as not to imply that NS Power possesses authority or obligations that may rest with legislators, regulators, emergency management, or other government bodies. Also recommends that Synapse consider identifying potential issues as broader policy questions for future consideration, rather than characterizing their absence as a shortcoming of the current Reliability Plan.	
Small Business Advocate	No comment.	
Mi'kmaq	Establishing whether these gaps exist, and whether current planning processes adequately capture and account for them, is fundamentally a matter of fact-finding and analysis that ought to be resolved before any conversation about remedies or regulatory action takes place.	

#11		
FINDING: Synapse could not verify NS Power's estimates of reliability performance improvements and diminishing returns presented in its Reliability Plan. **RECOMMENDATION:** NS Power must support its estimates of reliability improvements and diminishing returns pursuant to its Plan with sound analysis and data. NS Power should provide a more detailed methodology and analysis to support its reliability improvement estimates in the Company's next Plan. Since this component of the Plan is critical, Synapse also recommends a third-party review of the methodology and analysis. **TIMING:** Medium-term		
Party	**Feedback**	**Response**
NS Power/ **Tetra Tech**	NS Power: Disagrees. The methodology used to forecast reliability improvements was described in response to several interrogatory requests and no utility can produce a deterministic calculation that precisely predicts future SAIDI or SAIFI outcomes. Tetra Tech: NS Power's reliability performance improvement estimates are supported by historical data provided in the Plan, NS Power's approach is directly comparable to Hydro One's methodology, and validation of reliability improvements is analyzed ex-post across the industry.	No significant change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided. Synapse supplemented the report with examples of utilities that estimate reliability improvements at the feeder or project level.
Consumer Advocate	Agrees.	
Industrial **Group**	Supports the report's central conclusion that greater transparency is required regarding the basis for the proposed investments, the reliability benefits expected, and the extent to which cost-effectiveness considerations influenced expenditures. The underlying diminishing-returns data should be sought from NS Power.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#12		
FINDING: Reliability improvement estimates are high-level in that they cover multiple sub-projects in combination. **RECOMMENDATION:** The Company should develop transparent methodologies to estimate expected reliability improvements for each individual program proposed in the Reliability Plan, rather than in aggregate for multiple programs. **TIMING:** Medium-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. NS Power provided system-level reliability targets, program-level reliability contributions, and sub-program level reliability improvement factors. The Plan is intended to be a strategic planning document that establishes investment trajectories and expected reliability outcomes at a planning level. Comparable utility reliability plans generally communicate expected reliability improvements at the system or program level, while project-specific implementation details are refined through annual planning and capital approval processes. Tetra Tech: NS Power's reliability improvement estimates are disclosed at three progressively finer levels - systemwide, program, and sub-program with sensitivity ranges - supplemented by feeder-level risk scores and named-feeder installation data.	No significant change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided. Synapse supplemented the report with examples of utilities that estimate reliability improvements for individual reliability programs.
Consumer Advocate	Agrees; and believes the issue may be broader. Synapse should determine whether NS Power actually has adequate data-driven methods for estimating project/program-level reliability improvements, rather than merely lacking transparency. If new methods must be developed, implementation could take longer than Synapse's proposed medium-term timeframe.	
Industrial Group	Agrees.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#13		
FINDING: Reliability improvement estimates are not available at the feeder or project level. **RECOMMENDATION:** The Company should develop transparent methodologies and analysis to estimate expected reliability improvements at the feeder or project level based on its Reliability Plan. This is also necessary for feeder-level cost-effectiveness analysis. Feeder- or project-level analysis would provide significantly greater insight into how NS Power prioritizes feeders and selects mitigations to address the primary reliability causes. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. Precise, deterministic prediction of SAIDI or SAIFI improvement from a specific distribution project is not achievable at the individual feeder/circuit level. This is consistent with the findings and admissions of multiple peer utilities and regulators across North American jurisdictions. Tetra Tech: Disagrees; precise, deterministic prediction of SAIDI or SAIFI improvement from a specific distribution project is not achievable or necessary.	Modified the finding and recommendation to clarify that project level (as opposed to feeder-level) analyses are recommended. Synapse supplemented the report with examples from other utilities. Also, Synapse generally clarified in the final report that we do not expect perfectly "deterministic" results, but rather seek greater transparency that can lead to more optimal program implementation and cost-effective deployment of ratepayer funds.
Consumer Advocate	Agrees; subject to the same concerns as the finding/recommendation regarding whether adequate estimation methodologies currently exist and how long they would take to develop.	
Industrial Group	Agrees; feeder prioritization methodologies should be sufficiently transparent to permit stakeholders and the Board to understand how reliability investments are targeted. The recommendation for enhanced reporting regarding feeder reprioritization and deviations from planned investment priorities is reasonable.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#14		
FINDING: NS Power does not adequately support its cost-effectiveness values. **RECOMMENDATION:** NS Power should provide underlying documentation, analysis, and data to support its cost-effectiveness analysis. NS Power should assess the cost-effectiveness of individual vegetation management programs to develop more cost-effective approaches that can maximize reliability improvement for ratepayer expenditure. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. The conclusions appear to be based on an overly narrow interpretation of cost-effectiveness that focuses primarily on reliability improvement measured through SAIDI reduction per dollar invested. This is particularly true for transmission and substation assets, where the frequency of outage events may be relatively low, but the consequences of failure can be significant. Failure of critical transmission lines, power transformers, substation breakers, protection systems, and other bulk system assets have the potential to negatively affect large numbers of customers, reduce system resiliency, create restoration challenges, and expose customers to prolonged outages. Tetra Tech: No comment.	No change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided.
Consumer Advocate	Agrees.	
Industrial Group	Supports the report's central conclusion that greater transparency is required regarding the basis for the proposed investments, the reliability benefits expected to result from those investments, and the extent to which cost-effectiveness considerations have influenced expenditure decisions.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#15		
FINDING: It is unclear how cost-effectiveness affects NS Power's decision-making or prioritization. **RECOMMENDATION:** NS Power's Reliability Plan should demonstrate how the Company has incorporated cost-effectiveness considerations into its forecasted program expenditures. **TIMING:** Medium-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. The Reliability Plan was not developed through simple SAIDI-per-dollar optimization, nor should it have been. Rather, it was developed through a balanced evaluation of reliability performance, risk reduction, operational practicality, scalability, affordability, and system needs. This approach provides a comprehensive and prudent framework for utility investment decision-making than the narrower cost-effectiveness construct suggested by Synapse. Tetra Tech: No comment.	No significant change to the finding, recommendation, or timing. Synapse has examined stakeholder feedback and affirms this finding and recommendation based on the additional information provided. Synapse added text to the report requesting validation of the 81 percent spending on status quo investments.
Consumer Advocate	Agrees.	
Industrial Group	Supports the report's central conclusion that greater transparency is required regarding the basis for the proposed investments, the reliability benefits expected to result from those investments, and the extent to which cost-effectiveness considerations have influenced expenditure decisions. The 81%/19% "status quo vs. improvement" spending split is unverified NS Power data presented as fact. Recommends that Synapse flag this in the Executive Summary and Cost-Effectiveness section, or address and resolve before finalizing.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#16

FINDING: Based on the data that is available, NS Power has not optimized its investment strategy for cost-effectiveness.

RECOMMENDATION: NS Power should incorporate cost-effectiveness into its Reliability Plan by developing an appendix featuring an alternative plan that shifts investment to tracks and sub-programs that have higher cost-effectiveness from tracks and sub-programs that have lower cost-effectiveness. In particular, based on the data provided, programs geared toward reduction in vegetation contact are the most cost-effective. NS Power should discuss any concerns related crew safety/availability constraints on the scaling of vegetation management related to this alternative plan.

TIMING: Near-term

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Disagrees. Reliability needs are evaluated by identifying the outage drivers, asset condition, operational constraints, and feasible mitigation options. Alternatives that do not address the underlying risk are screened out, and preferred solutions are selected based on risk reduction, executability, scalability, affordability, and customer value. Tetra Tech: No comment.	Modified the recommendation. Clarified how NS Power can incorporate cost-effectiveness into its Reliability Plan in the recommendation.
Consumer Advocate	Generally agrees; subject to concerns under #4 and #7. Synapse needs deeper analysis of program-level effectiveness and the relationship between risk assessment, planning, budgeting, and project execution.	
Industrial Group	See #3. Also, during the technical conference NS Power raised crew safety/availability constraints on scaling vegetation spend, which is unaddressed in the report. Recommends that Synapse investigate this to evaluate if reallocation is operationally achievable.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#17

FINDING: There is no benefit-cost analysis of the Reliability Plan.

RECOMMENDATION: NS Power should produce more granular estimates of reliability improvements by project and customer class, as these are key inputs into a benefit-cost analysis. NS Power should develop a benefit-cost analysis for its next Reliability Plan and one alternative plan based on (a) more granular estimates of reliability improvements by project and customer class and (b) its jurisdiction-specific values of lost load from the surveys of Residential and Commercial customers. NS Power could include additional benefits if reasonable and not overlapping with the Value of Lost Load.

TIMING: Medium--term

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Partially disagrees. Formal monetized benefit-cost analyses for reliability plans are not commonly employed until jurisdiction-specific customer interruption values or Value of Lost Load (VoLL) studies become available and NS Power is currently undertaking VoLL studies. A traditional benefit-cost analysis based primarily on monetized reliability improvements would not fully capture the value of many reliability investments, particularly lower-frequency, high-consequence transmission, substation, and protection system risks. Tetra Tech: NS Power has stated that cost-effectiveness was evaluated primarily at the program and asset-class level with benefits measured as SAIDI/SAIFI/CAIDI reductions, avoided customer hours of interruption, reductions in system risk, and achievement of applicable Performance Standards. NS Power anticipates that VoLL, if adopted, will be "included as part of the criticality portion of risk rating as a potential complement to customer and/or usage factors."	Modified the recommendation to clarify that more granular risk scoring by project and customer class is an input into the benefit-cost analysis and could be produced first, in the medium-term. Also, clarified that the benefit-cost analysis can include other benefits alongside the Value of Lost Load.
Consumer Advocate	Agrees.	

#17

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RECOMMENDATION: NS Power should produce more granular estimates of reliability improvements by project and customer class, as these are key inputs into a benefit-cost analysis. NS Power should develop a benefit-cost analysis for its next Reliability Plan and one alternative plan based on (a) more granular estimates of reliability improvements by project and customer class and (b) its jurisdiction-specific values of lost load from the surveys of Residential and Commercial customers. NS Power could include additional benefits if reasonable and not overlapping with the Value of Lost Load.

TIMING: Medium--term

Party	Feedback	Response
Industrial Group	The report is written entirely from a systemwide/residential-oriented reliability lens and does not separately consider or address that large industrial loads often have materially different reliability and power quality sensitivities than residential customers. Recommends that the benefit-cost / VoLL framework explicitly consider and incorporate industrial process-sensitive reliability metrics (e.g. MAIFI, and voltage sag frequency) and that Synapse consider timing for the analysis of reliability impacts by customer class of medium-term.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#18		
FINDING: Most of the Plan spending is capital investments to maintain status quo reliability and it is unclear that these investments are cost-effective as they provide a relatively small contribution to reliability. **RECOMMENDATION:** We recommend the Board provide guidance on how to consider the significant investments in capital that may not provide commensurate reliability benefits. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. Any project or routine capital program that exceeds the applicable Authority to Overspend (ATO) threshold requires further approval from the NSEB. Similarly, any new capital investment exceeding $1 million must be submitted for NSEB review and approval before it can be included in rate base. Tetra Tech: No comment.	Modified the finding and recommendation. Clarified that the optimal starting place is guidance and that the guidance should focus on the status quo capital investments.
Consumer Advocate	Disagrees with/requests major clarification. Synapse overlooks existing controls such as the ACE Plan approval process, Authorization to Overspend (ATO), and quarterly capital reports. Rather than simply recommending a cap, Synapse should identify actual gaps. A hard cap could be counterproductive because urgent maintenance legitimately exceeds budgets and cutting planned reliability projects in response could reduce reliability and increase future costs.	
Industrial Group	Notes that there are mechanisms for prospective ACE Plan and individual capital project approvals and the report does not specifically address the existing mechanisms. Recommends that Synapse: address the existing processes and sharpen the finding to clarify what it is intended to address, (rather than imply the absence of any regulatory oversight), propose an illustrative budget threshold value for this recommendation (since the historical variance of $125 million/16% supports one), and cross-reference the parallel M12376 performance standards review.	
Small Business Advocate	No comment	

#18		
FINDING: Most of the Plan spending is capital investments to maintain status quo reliability and it is unclear that these investments are cost-effective as they provide a relatively small contribution to reliability. **RECOMMENDATION:** We recommend the Board provide guidance on how to consider the significant investments in capital that may not provide commensurate reliability benefits. **TIMING:** Near-term		
Party	**Feedback**	**Response**
Mi'kmaq	No comment.	

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Disagrees. NS Power disagrees that establishing a notification and adjustment process at the program level would provide additional regulatory value. The prudence of NS Power's investments is assessed at the individual project level, where each investment must demonstrate that it is necessary, represents the lowest-cost alternative capable of meeting the identified need, and therefore is in the best interests of customers. This project-level review provides a more meaningful assessment of customer value than a generalized spending cap or program-level adjustment mechanism. Tetra Tech: No comment.	Removed the finding and recommendation from the final report. Synapse agrees with the parties' concerns and the ACE Plan and ATO process provide adequate notification of Reliability Plan adjustments.
Consumer Advocate	Response captured in the prior finding/recommendation.	
Industrial Group	Response captured in the prior finding/recommendation.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#19		
FINDING: There is no requirement that the benefits of the Reliability Plan investments must exceed the costs. **RECOMMENDATION:**.NS Power, the Board, and stakeholders should consider how to optimize investments to account for the findings of the benefit-cost analysis. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. The requirement to demonstrate cost-effectiveness is already established, and more appropriately assessed, at the individual project level. Each capital project filed for approval must demonstrate that it represents the lowest-cost alternative capable of meeting the technical requirements necessary to address the underlying risk. NS Power could highlight projects included as part of the Reliability Plan in the ACE application to ensure transparency regarding the spending and cost-efficiency oversight provided through this process. Tetra Tech: No comment.	Modified the finding and recommendation to clarify that cost-effectiveness means benefit-cost analysis for the purpose of this finding and recommendation and that the focus should be on how to incorporate the results of the benefit-cost analysis into planning.
Consumer Advocate	Same response as #19. Indicates Synapse should better account for existing processes/guidance and identify specific deficiencies rather than broadly concluding that no guidance or metric exists.	
Industrial Group	No comment.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#20

FINDING: It is unclear how the climate data in NS Power's Climate Adaptation Plan that was filed as part of the 2026-2027 General Rate Application ties to the Reliability Plan assumption of a 0.26 increase in SAIDI (or some subset of this increase that relates to a changing climate) over the plan period and why the Reliability Plan requires $1B in targeted equipment replacements and upgrades to address this increase in SAIDI.

RECOMMENDATION: NS Power should transparently provide (a) the historical and forward-looking climate data from the Climate Adaptation Plan and a description of how this data was used to calculate the climate-related increase in SAIDI, (b) the rationale behind the mitigations and expenditures selected to address climate-related issues.

TIMING: Medium-term

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Partially disagrees. Climate-related reliability impacts have been assessed quantitatively in its initial Climate Adaptation Plan as part of the 2026-2027 GRA. Tetra Tech: No comment.	Modified the finding and recommendation to clarify that the Climate Adaptation Plan is the source of the climate data and that what is missing is the connection between the climate data and the assumed 0.26 increase in SAIDI over the plan period that represents the climate-related pressures. Clarified that Synapse is also looking for transparency on the rationale for the mitigations and associated expenditures selected to address climate-related pressures.
Consumer Advocate	Finding is accurate, and it is not clear that NS Power uses climate trends at all-in reliability planning. Synapse should identify which aspects of the Reliability Plan should reasonably be adjusted based on climate trends and recommend how climate information should be incorporated.	
Industrial Group	Recommends Synapse cross-reference its wind data findings against the MED/EED threshold questions under consideration in M12376.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#21		
FINDING: NS Power is currently considering which metrics are appropriate for measuring resilience and is leaning toward variants of SAIDI and SAIFI for now. **RECOMMENDATION:** Variants on the existing SAIDI and SAIFI performance metrics used to assess reliability at a system level, such as all-in SAIDI and SAIFI and MED/EED only SAIDI and SAIFI, are resilience metrics and are useful for tracking resilience performance in the immediate term. If critical customers are the targets for resilience measures, resilience metrics can be designed to focus on the feeders or customers who benefit from the improvements. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Agrees. Variants of established reliability metrics such as SAIDI and SAIFI represent the most practical and meaningful approach to monitoring resilience performance and this approach is consistent with current North American utility practice. Tetra Tech: Finds the Plan measures reliability and resilience through the SAIDI/SAIFI without MED/EED and the all-in SAIDI/SAIFI (with MED/EED), respectively.	Modified the recommendation to clarify that Synapse finds that SAIDI/SAIFI variants are adequate for measuring resilience at this time and defines the term SAIDI/SAIFI variant as the all-in SAIDI/SAIFI (with MED/EED). Synapse supplemented the report with examples of resilience metrics for further consideration.
Consumer Advocate	Agrees.	
Industrial Group	Recommends that Synapse consider separating the NS Power versus Board obligations.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

Party	Feedback	Response
NS Power/ Tetra Tech	NS Power: Agrees and disagrees. NS Power does not agree that the overlap between reliability and resilience represents a deficiency in the Plan. Rather, it reflects the reality that many utility investments provide both reliability and resilience benefits and that the most effective investments often improve both simultaneously. Tetra Tech finds that Appendix A defines reliability and resilience, two of the three Plan tracks are explicitly labelled Storm Hardening investments which indicates that they improve both reliability and resilience, and the physical inseparability of the two benefit categories is a property of the Storm Hardening investments, not a definitional conflation.	Removed the finding and recommendation from the final report. Synapse agrees with NS Power and Tetra Tech's concerns and notes that NS Power provided definitions of this terminology that are differentiated and appropriate.
Consumer Advocate	Agrees; and questions the recommendation to broaden the Reliability Plan toward resilience.	
Industrial Group	Agrees that reliability and resilience should be more clearly distinguished within future planning documents. Reliability improvements and resilience investments may serve different objectives, entail different cost considerations, and require distinct performance metrics.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#22		
FINDING: The Reliability Plan focuses on investments to improve reliability. It is not clear if and how the Reliability Plan addresses planned outages. **RECOMMENDATION:** The next Reliability Plan should clarify if and how planned outages are addressed. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. The Reliability Plan was intentionally developed to address the reliability performance concerns identified by the Board and to support achievement of established performance standards. While certain investments contribute positively to broader system resilience, the Plan's focus remains on reliability improvement. Tetra Tech: The coherent characterization of the Plan supported by the record is that it is a hybrid reliability-and-resilience plan using distinct definitions of the two terms and delivering both categories of benefit from a coordinated portfolio.	Modified the recommendation to address the lack of clarity around whether and how the Reliability Plan addresses planned outages.
Consumer Advocate	It is unclear whether the Board has authorized substantial resilience spending distinct from reliability. Synapse should acknowledge that resilience spending is not clearly within the existing Plan's scope.	
Industrial Group	Greater clarity regarding the targeted outcome would assist stakeholders in evaluating future expenditures and understanding the trade-offs between reliability and resilience investments.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#23		
FINDING: The Reliability Plan has systemwide performance targets and takes a systemwide perspective. **RECOMMENDATION:** If the next Reliability Plan includes resilience-focused investments, they should be addressed separately from reliability-focused investments. As resilience-focused measures may cost more to implement, NS Power should utilize a more targeted approach for investments intended to improve resilience. **TIMING:** Longer-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Disagrees. Systemwide targets are the standard structure for utility reliability plans across North America. NS Power has designed its Plan to achieve the performance-based standards already identified and targeting of further resiliency measures, whether at the system or local level are intentionally outside the scope of this Plan. Tetra Tech: States that Synapse finds that the Plan's systemwide targets are inadequate without feeder-level or region-level sub-targets. Finds that the Plan pairs its systemwide targets with feeder-level priority disclosure and the Performance Standards Problem Feeder mechanism.	Modified the recommendation to remove the emphasis on geographic targeting.
Consumer Advocate	Finding is supported, and Synapse has not demonstrated why geographically targeted planning would be more cost-effective or affordable than a systemwide approach. Recommends providing additional evidence supporting that recommendation.	
Industrial Group	No comment	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

#24		
FINDING: The Reliability Plan does not discuss how NS Power will improve the time it takes personnel to restore power after a major event. **RECOMMENDATION:** NS Power should present historical and forecast data regarding restoration time and address how it plans to improve restoration time after an outage occurs, if applicable. **TIMING:** Near-term		
Party	**Feedback**	**Response**
NS Power/ Tetra Tech	NS Power: Partially disagrees. The Plan is not designed or intended to directly address potential improvements in reactive response to unplanned outage events related to personnel. NS Power asserts that these are best addressed within existing continuous improvement activities within the Company. Tetra Tech: Restoration time is a performance outcome captured in existing IEEE 1366 metrics and delivered through automation, crew practices, and asset accessibility investments. Restoration cost is a financial outcome recovered through a separate regulatory instrument rather than through the Reliability Plan itself. Assessing them together risks conflating operational planning with cost recovery.	Modified the finding and recommendation to focus on restoration time, in alignment with the performance goal.
Consumer Advocate	Agrees; however, restoration benefits should also be incorporated when evaluating individual programs. For example, Establishing New Rights-of-Way is the most expensive vegetation sub-program but is also the one most directly associated with reducing restoration time and cost—reinforcing concern with finding #4.	
Industrial Group	No comment.	
Small Business Advocate	No comment.	
Mi'kmaq	No comment.	

General – NS Power/Tetra Tech	
Feedback	**Response**
NS Power finds that the record demonstrates substantial alignment regarding the importance of reliability improvement, transparency, resilience planning, and accountability. Synapse identifies opportunities for enhanced reporting, transparency, and disclosure and NS Power supports continued discussion regarding practical enhancements in these areas and notes that many of the reporting mechanisms recommended by Synapse either already exist The most significant differences between NS Power and Synapse relate to the degree of forecasting precision that is achievable, the role that cost-effectiveness metrics should play within a broader asset management framework, and how reliability investment decisions should be communicated and evaluated. Tetra Tech finds that the Plan's methodology, tracking, allocation, benefit-cost framework, and metrics architecture are consistent with common North American utility practice, and that on several dimensions NS Power's approach exceeds peer utility norms. Residual matters are being addressed through workstreams under Board direction, on defined schedules tied to the 2026 and 2027 ACE Plan filings.	Synapse appreciates these comments and the descriptions of practices at NS Power's peer utilities. Synapse reviewed took a closer look at Reliability Plan reporting in the ACE Plan, the Authority to Overspend process, and the status of the performance standards proceeding and modified or removed several findings and recommendations.

General – Consumer Advocate	
Feedback	**Response**
Stated that the Synapse report does not include the following elements: • Identification of new or alternative investments that differ from those included in NS Power's Plan, which could be informed by "practices or tools from other utilities." This includes whether current vegetation management practices are optimal or could be informed by practices at other utilities. • Changes in practices or program implementation that could deliver reliability improvements more effectively or efficiently. • Exploration of the results of practices and investments in the Plan. • How NS Power could utilize its Work and Asset Management (WAM) system to reduce costs and maximize benefits of programs, which was implemented to deliver "more efficient planning, increased productivity, and route optimization." • Evaluation of the Board's order in M12012 to improve transparency and emphasis on pole upgrades, particularly for areas of the system that experience high winds.	Synapse supplemented the report with additional comparisons to peer Canadian utilities regarding spending and system coverage for vegetation management programs. Synapse agrees that audits of individual programs and the WAM system is important and relevant to delivering reliability benefits; some of the analysis described by the CA is beyond the scope of Synapse's report. However, recognizing some of the shortcomings of NS Power's analysis described in this report and the CA's recommendation, Synapse has added a recommendation to finding #3 of its report to address the CA's comments.
Submitted supplemental comments citing several recent Board statements that support and expand upon the recommendations to investigate the costs and effectiveness of individual programs, such as: • Recent Board decision and related language regarding Advanced Grid Modernization and Remote Terminal Units, finding that Synapse should also investigate these programs in addition to the programs discussed above. • Board language from the 2026 ACE Plan decision regarding vegetation management that is very similar to Synapse's conclusions and states we should consider the Board's findings in our final report. • Underscores its comments regarding the WAM system.	Synapse reviewed this information and affirms the findings and recommendations in our report.

General – Industrial Group	
Feedback	**Response**
Notes that in the Board's recently issued Decision in the 2026 ACE Plan proceeding (M12619) there are matters and issues that the Board expressly contemplated would be addressed by Synapse in its review of NS Power's Five-Year Reliability Plan. These included the Remote Terminal Unit (RTU) project (paras. 3 and 38), New Distribution ROW Phase 11 project (para.12), and whether the significant spending on vegetation management and storm hardening is making a measurable improvement in reliability performance (para. 129) and resilience (para. 150). The Board questioned whether ratepayers are receiving an "appropriate bang for their buck" and explicitly stated its expectation that the Synapse review "should provide a basis for determining the focus and extent of capital expenditures in the remaining years of the Five-Year Reliability Plan," (para. 150). It went on to clarify its main concerns at para. 151 and noted it "requires a clearer connection between spending on vegetation-management activity and improved reliability outcomes" (para 152). The IG commends to Synapse a careful review of the Board's ACE Plan Decision to ensure that the final version of Synapse's report is responsive to the specific concerns raised by the Board and its expectations.	Synapse reviewed the Board's 2026 ACE Plan Decision and finds the report to be responsive to the Board's concerns and expectations.
Planned outages are absent from Synapse's report entirely. The parallel M12376 proceeding shows customers experiencing a planned outage rose from ~31% (2017–2022) to 78% (2024), with NS Power stating reliability investment increases will drive more planned outages. This means the capital program under review may be directly driving a substantial increase in planned customer interruptions which is a real and growing cost to industrial customers, for whom even planned outages can mean lost production. This is entirely absent from Synapse's cost-benefit framing. The IG recommends that Synapse's final report address this relationship, and whether the Plan accounts for or discloses this.	It is unclear if and how the Reliability Plan addresses planned outages. Synapse modified findings and recommendations in the report to address this gap.

General – Industrial Group	
Feedback	**Response**
The Plan allocates $78 million to Advanced Grid Modernization, with a forecast SAIDI reduction of 0.06 to 0.11 hours and one of the lowest cost-effectiveness values in Table 9. Recommends the report examine whether the FLISR/DERMS envelope is consistent with industrial DER integration.	Synapse acknowledges that grid modernization expenditures have low cost-effectiveness relative to other measures. We are not sure what is meant by the recommendation to examine whether the FLISR/DERMS envelope is consistent with industrial DER integration.
The report states that Synapse is “unsure to what extent NS Power followed the recommendations from EA Technologies” because no follow-up documentation exists. Recommends that Synapse clarify whether it secured confirmation and is satisfied that NS Power followed through on 2024 EA Technologies findings and clarify the materiality of those recommendations to the current review.	Synapse has not secured confirmation. Many of EA Technologies recommendations also concern transparency, in alignment with many of Synapse’s recommendations.
Reconcile Table 2 and Table 9. The vegetation sub-program dollar figures do not match between these tables and should be clarified or corrected.	Synapse added to the existing footnote below the table to provide more clarity on this difference.
The transmission corridor widening conclusion rests on an unresolved data discrepancy as Synapse "wonders" whether NS Power omitted transmission outage data. This should be addressed or resolved before finalizing.	Synapse could not resolve this discrepancy.

General – Small Business Advocate	
Feedback	**Response**
See Exhibit N-3, NSPI (Synapse) RIR 18 p. 1 of 2, lines 14-30, where NSPI provides a breakdown of how it estimates or allocates spending for future years. At PDF page 23 of the Draft Report, Synapse appears to criticize NSPI's use of sharing out the investment budget over 2026-2029 based on 2025 share. The reason for Synapse' concern is unclear, given information provided about the requirement for projects to be approved through a yearly ACE Plan, and the possibility that some investments may only be able to be partially completed each year, requiring flexibility in budgeting year to year. Is the expectation that NSPI should provide a separate budget for each year as part of the 5-year Plan? Would this require re-calculating for future years as things change, including as a result of re-prioritization of investment based on experienced outages?	Yes, the expectation is the NS Power should provide a budget for each year of the 5-year Plan reflecting the changing priorities of the system.
What is Synapse's understanding of the purpose and benefit of the CEJC process used for investments included in the ACE Plan that also include the investments in this 5-year Reliability Plan? What is Synapse's critique of how NSPI manages its long-term asset management plan with respect to reliable performance?	Synapse understands that the Reliability Plan extends the ACE Plan framework to evaluate reliability investments and expected reliability improvements from these investments from less than one year in advance of implementation to up to five years in advance of implementation. Synapse's critique is that the Reliability Plan lacks sufficient detail on expected priorities.
Did Synapse's review of Targeted Reliability Programs consider that these programs accommodate increased renewable generation on the system and that could otherwise contribute to the potential for interruptions because their integration into the grid must be physically managed? It is unclear from the report.	Synapse did not specifically consider reliability issues caused by renewable generation in its report.
Synapse has provided several findings with proposed timelines for addressing them. Which of the findings assigned a Near-Term Timeline does Synapse think should or could be addressed first? Is Synapse able to provide a rank ordered list of these findings in terms of the benefit obtained?	Synapse did not develop a priority ranking of near-term recommendations based on the benefit obtained.

General – Small Business Advocate	
Feedback	**Response**
Finding 2: How does Synapse's recommendation, regarding tracking of expenditures relative to the Reliability Plan forecast, differ from what is presented in the ACE Plan, ATOs, financials, etc.	The 2026 ACE filing provides an Appendix G which is an updated Reliability Plan. The Plan includes 2025 anticipated investments for certain categories of costs, but does not compare this to the original Plan forecast. Synapse recommends including a table in the update with each individual program forecast from the originally filed 2025-2029 Reliability Plan, compared with the actual expenditures. Further, comparing the forecast number of miles (if applicable) versus actual would be helpful to have in the same table.
Finding 4: Which vegetation management projects has Synapse identified as potentially not maximizing reliability improvements and how should these be reallocated?	NS Power did not provide sufficiently granular data on vegetation management to enable this analysis.
Finding 5: Does Synapse object to expenditures in the five-year Plan that accommodate load growth generally or just expenditures related to new load? Why wouldn't reliable service for new load be part of the Reliability Plan? What projects included in this Plan support new load and are any of these vegetation management projects? Does Synapse agree that NSPI has an obligation to serve new load over the five-year time horizon for this Plan? What about NSPI's obligations under the Public Utilities Act? How can NSPI spend to improve the reliability of feeder circuits without taking into account cost to upgrade substations? Did Synapse analyze how these assets are interconnected?	This finding distinguished between expenditures to serve new load and expenditures to improve reliability. Given the potential overlap, Synapse removed this finding and the associated recommendation.
Finding 6: Did Synapse review the investment projects in this five-year Plan as supported by the CEJC process, which requires NSPI to consider alternatives? If yes, please explain why the CEJC does not address Synapse's concern that no alternatives were considered.	No, as we were focused on the Reliability Plan.

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Synapse report, p. 26, "There is no evidence that the company considered alternative plans." Does this mean NSPI should provide other types of scenario analyses besides those for the CEJC, e.g., such as: I. Front-loaded vegetation management program? II. Delayed work plan, e.g., move to roadside as part of vegetation management? III. Prioritize vegetation management sub-program for distribution over transmission? Or certain counties? IV. Revise studies for critical feeders, vegetation management plan for distribution or transmission? V. Revised studies for: Value of lost load? Cost of interruption? (If so, has NSPI not already provided these?)	Yes, NS Power should provide at least one alternative portfolio. One or more of these scenarios can be explored in the alternative portfolio.
Finding 7: Please clarify exactly what is meant by "greater differentiation" in the recommendation and what the issue is that is being addressed by it.	"Differentiation" refers to the feeder risk scores by which NS Power prioritizes feeders for mitigation. This is described on pages 31-32 of the Draft Report. As noted in the Draft Report "there are a significant number of feeders with the same [reliability risk] score" (Draft Report, p. 31). The reference to "greater differentiation" therefore refers to risk scores and how the methodology to develop these scores can better differentiate reliability risk for program targeting.

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Refer to Draft Report Page 36: In the last paragraph, it provides an example of the proposed calculation. In footnote 83, it references "more complex estimate of consequences of an outage…" – is Synapse proposing that those be included in the proposed calculation? How would estimates for safety be denominated in dollars? Please also clarify what is meant in footnote 84.	No, Synapse is not recommending more complex estimates of reliability consequences be incorporated, though we would not oppose this. Footnote 84 refers to fitting a probability distribution to a set of data, rather than relying on a simple arithmetic average, where appropriate. For example, some data do not follow a normal distribution, so instead of averaging across years it may be more appropriate to estimate the annual average using a probability distribution (e.g., lognormal, gamma, or another skewed distribution) whose fitted parameters yield a different — and potentially more accurate — estimate of the annual average than a simple arithmetic mean.
Report Page 44: - Synapse does not adequately explain or support what it means by "Normalized", where it uses the term in the column heading Normalized Effectiveness Reduction.	Synapse added clarifying language to the footnote below the table to address this comment.
Report Page 25: Synapse appears to find that there would be an immediate benefit if all funding for distribution corridor widening was instead allocated to trimming/removal because of the increased number of kilometers that could be accomplished. Does Synapse take the position that there is no difference between the benefits of distribution corridor widening and the benefits of trimming/removal activities? If it does not see the benefits as being equal, how does Synapse calculate that the increased kilometers of trimming/removal exceed the benefits from the smaller amount of kilometers that would have been widened? Is there any difference in the length of time that work lasts for, between trimming/removal and widening?	This question mis-states the report's analysis and finding. As stated in the Draft Report on page 25 (emphasis added) "NS Power's allocation between these programs is only appropriate if distribution corridor widening is much more effective at reducing vegetation-related outages compared with trimming/removal activities (at least 146 percent more effective, given the unit-cost premium). Yet, the Company does not distinguish between the cost-effectiveness of these critical sub-programs. Similarly, the Company does not provide reliability improvement estimates by sub-program."

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Report Page 38: At the top of the page, Synapse states "Synapse understands that NS Power does not currently have estimates of reliability improvements at the feeder level." In the Performance Standards, NSPI reports on problem or chronic feeders, providing an update on the previous year's progress. What other information is Synapse recommending in terms of improvements at the feeder level.	This refers to expected improvements in reliability performance due to each reliability program, rather than historical information.
Report Page 42: In the cost-effectiveness column, it appears that you divide the SAIDI reductions, which I understand represents the improvements in the duration of outages by hour, by the total investment, so that the number listed represents how much it costs, based on the investments, to achieve a reduction. If that is correct, please provide a description of what the Cost-Effectiveness represents (i.e. number of hours per $1M or something else). In Table 9, please confirm how 0.000 is found to be the total for Storm Hardening-Targeted Equipment Replacement and Upgrades when you add the numbers together, especially noting the numbers as set out in Figure 16. Please also clarify how 0.98 is achieved for SAIDI reductions under Storm Hardening – Vegetation Management, given the N/A in the SAIDI reductions column, as well as the 0.0004 in the Cost-Effectiveness column.	The cost-effectiveness statistic is not a sum but rather the division of SAIDI reductions by total investment. This gives the units Hours of SAIDI Reduction per million dollars of expenditure. The values in Figure 16 are consistent with the values in the table, though the table values are rounded to the third decimal place.
Report Page 43: In Footnote 99, it states that in Figure 16, vegetation management is omitted, but in Figure 16, vegetation management is listed as the second bar – please clarify.	This is an error and we have removed this footnote in the final report.
Report Page 44: In the bottom paragraph, Synapse states "While some spending is necessary to maintain reliability, it is striking that 81 percent of the Plan's forecasted spending is intended to support status quo reliability." Can Synapse explain why 81% is a striking number and what Synapse would have expected? What is that percentage for other organizations?	This statement is not based on a comparison to other utilities. 81 percent is striking because most of the investment is not expected to improve reliability.

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Feedback	**Response**
Report Page 50: At the bottom of the previous page/top of the page, Synapse comments that NSP should be able to defer a portion of planned proactive investments in a year with high reactive investment expenditures and suggests that NSP should propose that to the Board "along with any chances to performance standards that may be warranted in that year given exigent circumstances." Given that performances already address storms, what other exigent circumstances is Synapse referring to in this recommendation?	Synapse has not provided an exact definition, but note that storms may not be the only "exigent circumstance" that face NS Power in a given year. For example, material shortages, labour, geopolitical events, could all have material impacts that would be helpful for the Board to be apprised of if relevant to NS Power's implementation of its programs.

General – Mi’kmaq	
Feedback	**Response**
Report is a useful and constructive independent contribution to assessing the Reliability Plan, and emphasizes the report’s finding that feeders serving Mi'kmaq communities performed worse on reliability measures than those serving non-Mi'kmaq communities. Recommends the Board weigh the report's conclusions on regional and customer-group disparities seriously, and mandate that future reliability planning examine whether the tools and methods currently in use give enough insight into how different communities across Nova Scotia—including Mi'kmaq communities—actually experience service reliability.	Synapse maintained its recommendation that NS Power analyze disparities in reliability for vulnerable and priority communities and that NS Power, the Board, and other stakeholders determine whether and how to address disparities in reliability that are identified in the assessment.