



Office of the Auditor General of Ontario
Bureau de la vérificatrice générale de l'Ontario

Value-for-money audit of:

Hydro One—Management of Electricity Transmission and Distribution Assets

2015 Annual Report, Section 3.06

Background

- Provincially owned Hydro One Inc. has a mandate to be a safe, reliable, and cost-effective transmitter and distributor of electricity
- Hydro One operates one of North America's largest transmission systems, with 29,000 km of high-voltage lines and 299 transformer stations
- It also serves 1.4 million residential and industrial customers through its 123,000-km low-voltage distribution system



Audit Objective

- Assess whether Hydro One had adequate systems and procedures in place to manage and maintain its transmission and distribution assets efficiently and cost-effectively in accordance with relevant Hydro One policies and regulatory requirements, and to ensure the system was reliable.



Overall Conclusions

- Hydro's transmission reliability worsened from 2010 to 2014, with costs rising as outages lasted 30% longer and occurred 24% more frequently
- Distribution reliability consistently ranked among worst of large Canadian electricity distributors between 2010 and 2014
- No benchmarks used to assess cost effectiveness of capital projects, and all approved projects included large allowances for contingencies and price escalation



Specific Findings

- Backlog of preventive maintenance work orders increased by 47%, causing equipment failures
- Hydro One replaced only four of 18 transformers identified in its 2013/14 rate application as being in very poor condition
- 8% to 26% of key transmission assets are beyond their expected service life but still in use
- Vegetation trimming cycle was 9.5 years, compared to industry average of 3.8 years, making fallen tree limbs the top cause of outages to its distribution customers



Recommendations

- Set multi-year targets and timetables for reducing frequency and duration of power outages
- Establish timetable to eliminate growing preventive-maintenance backlog
- Ensure asset replacement program targets assets at highest risk of failure
- Provide accurate information on asset replacement activities to Ontario Energy Board
- Shorten current vegetation management cycle from 9.5 years to less than four years



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