Office of the Auditor General of Ontario

Value-for-Money Audit

Electrical Safety Authority

December 2020

Ministry of Government and Consumer Services

Electrical Safety Authority

1.0 Summary

In 1999, the government of Ontario established the Electrical Safety Authority (ESA) with a mandate to improve public electrical safety. In Ontario, it is against the law to put in almost all electrical installations without notifying the ESA. Only licensed electrical contractors can put in installations for the public, with two main exemptions: homeowners can put in installations in their own homes, and an owner or an employee can put in installations within an industrial facility or on a farm.

The ESA is responsible for inspecting electrical installations to ensure that:

- the installations comply with the Ontario Electrical Safety Code;
- local distribution companies (also known as utilities, that distribute power from transmission lines to homes and other buildings) comply with safety laws; and
- all electrical products sold in Ontario have been safety tested and certified.

The ESA also licenses electrical contractors and master electricians, and investigates and prosecutes illegal electrical installations.

The ESA is self-funded through the fees that it charges for its legislatively mandated inspections and other services; it does not receive any government funding. The ESA also collects additional fees by offering inspections, safety training and other services that are outside of its legislative mandate. The ESA employs about 530 people and is the only delegated authority in Ontario with a unionized workforce.

Overall, we found that the state of electrical safety in Ontario has improved over the last 10 years; however, the ESA is not operating effectively and in a cost-efficient way. For example, the ESA conducts many unnecessary inspections, and for many years it did not adopt technology that could have made its inspection process less costly.

We also found that the ESA's operations are not fully effective in inspecting for public electrical safety. For instance, until we identified and informed the ESA that its computer system (which tracks unsafe electrical installations) was displaying inaccurate information, the ESA did not know that its inspectors were not following up on thousands of inspected unsafe electrical installations.

The ESA also has no inspection standards, and when inspections are scheduled, it does not consider if inspectors have sufficient time to actually complete them. Between 2015 and 2019, the ESA collected $17 million in inspection fees for inspections that did not actually take place mainly because inspectors did not have time to complete them.

We noted that online advertisement of illegal electrical installation services and the sale of uncertified electrical products are widespread in Ontario, and that the ESA's investigation of

these areas is largely ineffective. We further noted that occurrences of illegal installations are also widespread, which can at least partly be attributed to the fact that certified and master electricians are prohibited from offering electrical services to the public.

We found that the Ministry of Government and Consumer Services (Ministry), which is responsible for overseeing the ESA, has not ensured that the ESA is accomplishing its mandate. For example, the Ministry has not confirmed that the fees that the ESA charges encourage electrical safety compliance (which they are supposed to do under the ESA's Administrative Agreement with the Ministry) and has not established any meaningful performance measures to assess and monitor the ESA's operational performance. It has also not made sure that the services that the ESA performs outside of its legislative mandate are not interfering with the ESA's mandated responsibilities. Furthermore, the ESA is not meeting the spirit and intent of Ontario government directives in managing its business practices (such as the travel, meal, and hospitality expenses, and procurement directives).

The state of electrical safety in Ontario has improved over the last 10 years. From 2010 to 2018, electrical injuries reported to emergency departments were reduced by 42%. Similarly, electrical fires reported to the Fire Marshal have also been trending downward by 30%. Over the last 10 years, the number of electrical fatalities remained relatively the same, averaging about 14 fatalities a year. More than half of the electrocutions and fire-related deaths occurred due to accidental contact with power lines and misuse of kitchen appliances.

Among our significant findings:

Operational Inefficiencies

- **The ESA conducts unnecessary inspections that do not contribute to improved public safety.** In 2011, the ESA sought to implement a risk-based inspection approach. Such an approach would allow the ESA to focus on high-risk installations, and reduce the number of its inspections without jeopardizing public electrical safety. According to our expert, many routine and simple installations, especially those done by experienced contractors, do not require an inspection to be deemed safe. Technical Safety BC, the ESA equivalent in British Columbia, has been prioritizing higher-risk installations over routine and simple ones for the last 15 years, and as a result inspects only 20% of the installations it gets notified of. The ESA, however, did not adopt this approach in 2011 because it was not successful in negotiating with the union that represents the ESA's inspectors who did not support it out of concern for job losses.

  On July 6, 2020, after agreeing not to reduce its workforce, the ESA did implement a new risk-based inspection approach aiming to reduce its inspections by 10%. However, going by past performance, there is little assurance that inspectors will prioritize high-risk inspections: between 2015 and 2019, of the ESA's 113,000 inspections of simple installations, 45,000 were not required according to the ESA and took away resources and time from conducting higher-risk inspections. We further found that prior to July 2020, the ESA had already been informally passing 11% of its inspections without actually conducting them. In essence, the ESA is not reducing its inspections to become more efficient, but will conduct the same number of inspections to continue to generate enough revenue to fund its workforce and operations. Salaries and benefits to fund the workforce totalled about $89 million in the 2019/20 fiscal year. Inspection fees account for $90 million, or 80%, of the ESA's total fee revenue.
- **The ESA could use technology to make its inspection process less costly.** Many inspections of electrical installations can be done remotely by examining photos or videos of the installation. This saves inspector

travel time and vehicle costs. Electrical safety organizations in many other Canadian jurisdictions, such as British Columbia, Alberta, Manitoba and the Northwest Territories, have been using photos and videos to inspect some installations for years, some as far back as 2010. The ESA has not, however, and began remote inspections only in April 2020, on a temporary basis, as a result of the COVID-19 pandemic. We found, using actual driving distance information reported by all ESA inspectors for the 12-month period from April 2019 to March 2020, that inspectors on average spend about 30% (2.5 hours) of their eight daily working hours in a car, driving an average of about 130 kilometres between inspection sites. By incorporating remote inspections into daily working protocols to inspect lower risk installations, driving time could be reduced, leaving more time for in person inspections of higher-risk and complex installations, further improving electrical safety. In addition, the ESA could significantly reduce the $4 million it currently pays to operate about 310 vehicles its inspectors use.

- **The ESA could save approximately $300,000 to $500,000 annually if it followed the government's meal reimbursement policy.** The ESA allows its inspectors to claim daily lunch expenses when they are in the field conducting inspections. The ESA does not use the Ontario government's meal reimbursement policy, which caps lunch reimbursements at $12.50 (including tax and gratuities). Instead, inspectors are allowed to spend any "reasonable and appropriate" amount on lunch, at their discretion. In the 2019/20 fiscal year, they spent an average of $20 for each lunch, totalling about $1.3 million, or about $4,800 per inspector. About 80% of approximately 40,000 lunch reimbursements in the 2019/20 fiscal year exceeded $12.50. We estimate that if the ESA had used the meal reimbursement policy's cap in 2019/20, it could have reduced its costs by about $300,000 to $500,000 in that year. We also found that some inspectors claimed lunches for the contractors whom they inspected and others for celebratory group inspector meals. In comparison, we noted that inspectors that work for two other delegated authorities are not allowed to claim lunches when travelling within their assigned region.
- **Ministry found ESA to have the highest labour costs compared to other delegated authorities.** The Ministry has known for many years that the ESA has the highest operational costs due to the size of its workforce, but it has not addressed the situation. In 2015, the Ministry hired a consultant to look for cost savings and efficiencies at the eight delegated authorities that it oversaw at the time, and found that the ESA had the highest labour costs. The consultant noted that of the eight delegated authorities it looked at, the ESA reported the highest number of full-time staff, at 445, in 2013. While it collected the most in fees (about $94 million), it also had the highest expenses, mostly attributable to salaries and benefits. Based on the most recently available financial statements, we confirmed that in the 2018/19 fiscal year, the ESA still had the highest expenditures among the delegated authorities, with $113.8 million in expenses ($39 million more than the Technical Standards and Safety Authority, which has about 400 full-time staff, the second-most costly; and $52.6 million more than Tarion, which has 260 full-time staff, the third-most costly).

Inspections

- **The ESA did not promptly follow up on about 3,500 installations found to be unsafe when inspected.** Unsafe installations found during inspections are supposed to be fixed as soon as possible. Inspectors are

required to follow up and check within 14 days that inspected installations that pose a serious risk of fire and/or electrocution have been fixed. The deadline for installations that do not pose an immediate risk of fire and/or electrocution is 35 days. We alerted the ESA to the fact that its computer system was not displaying all the inspections its inspectors were supposed to follow up on. Specifically, on April 20, 2020, we identified that about 3,500 inspections conducted between 2010 and 2019 had found unsafe installations. None of these had been followed up on within the required time frame, and 32% of the inspection findings had been overdue for follow-up for more than two years. We also identified that the ESA does not routinely follow up and check on installations it finds to be unsafe during the inspections it conducts outside of its legislative mandate.

- **The ESA has no inspection checklists.** The ESA has not developed inspection checklists for its regular and periodic inspections. If the ESA had inspection checklists and made them publicly available, contractors and homeowners could better understand the inspection process. This could help reduce the number of unsafe installations, as contractors and homeowners would know what an inspector is looking for. Our expert strongly supported establishing and publicizing such checklists. In comparison, inspectors at Technical Safety BC use checklists to perform their electrical inspections. These checklists are built into the computer system inspectors use to document their inspections. Technical Safety BC also makes the inspection checklists publicly available.
- **Gaps in the oversight of local distribution companies(distributors), identified in 2018 by an ESA hired-consultant, remain unfixed.** A number of gaps remain in the ESA's oversight of distributors, more than two years after an ESA-hired consultant recommended that these gaps be fixed. We found that 41% or 22 of the 54 action items recommended by the consultant had not yet been implemented as of May 2020. For example, the ESA does not require distributors to submit any evidence that non-compliances including unsafe power line installations found by its inspections were fixed; and the ESA does not consistently collect information on serious electrical incidents that distributors are required to report to the ESA as per the Regulation 22/04 Electrical Distribution Safety. This includes a description of the incident, the nature of incident, the possible cause of the incident, incident date and time, and when the incident was reported to the ESA.

Illegal Electrical Installations

- **Online advertising for illegal electrical services is widespread.** There are significant numbers of online ads for "for-hire electricians" who are not contractors licensed by the ESA. For example, in Ontario in 2019, people posted an average of 166 advertisements each day in the "for-hire-electricians" category. We responded to 20 such advertisements between July 7 and 14, 2020, requesting a quote for new wiring installation. The quotes that we received ranged from a low of $150 to $1,100 and together averaged about $650. We found that none of the 20 "for-hire electricians" were licensed by the ESA. Each of them strongly discouraged us from notifying the ESA, reasoning that the job was too small.
- **Licensed electrical contractors offer to do electrical installations for less money if the ESA is not notified as required by law.** We obtained 20 additional price quotes from licensed contractors from across Ontario. Nine of them gave us an ESA and a non-ESA quote, saying that it was up to us to decide if the ESA would be notified or not, even though the law says that contractors must notify ESA

of all electrical installations. The average ESA quote was about $200 more than the average non-ESA quote. Three of these nine contractors had been previously caught by the ESA for performing electrical installations without notifying it.

- **Homeowners may not be aware of the risks of having electrical installations put in by anyone other than licensed electrical contractors.** Certified and Master electricians are not permitted to perform electrical installations on their own. They must be working for a licensed electrical contractor business, which carries insurance and is registered with the Workplace Safety Insurance Board in order to legally perform electrical installations. Surveys conducted by the ESA over the last five years (2015–2020) found that, on average about half (46%) of homeowners surveyed each year did not know that it is illegal for certified electricians (who are not the same as licensed electrical contractors) to offer installation services and that only licensed electrical contractors should be hired to do that work. In addition, a majority (80%) of homeowners had not seen, heard or read anything advertised or publicized about electrical safety or the ESA. According to the Ministry of Labour, Training and Skills Development, if a homeowner directly hires someone who is not a licensed electrical contractor to do electrical installations in their home, the homeowner can become responsible for that person and therefore liable for any injuries or damage that could occur during the installation. Furthermore, if the hired individual does not have Workplace Safety and Insurance Board (WSIB) insurance, the homeowner may be sued by the injured person for additional costs.

Product Safety

- **We found that unsafe electrical products are widely available for sale online.** In July 2020, we purchased 13 electrical products from a large online retailer and found that six (46%) of the 13 electrical products were not certified. Five of these six uncertified products failed to pass a safety test and were found to be unsafe for public use. Ontarians can purchase electrical products online directly from manufacturers located anywhere around the world and the products can be shipped directly from overseas to the buyer's address. The ESA does not have an active surveillance program in place to monitor the buying and selling of uncertified products through online platforms. Given the volume and movement of products across borders, we found that it is difficult for a provincial authority like the ESA to effectively enforce product safety laws in Ontario.

Licensing and Disclosure of Electrical Safety Information

- **The ESA does not provide callers with easy access to information that could improve electrical safety.** The ESA receives frequent calls with technical questions about how to interpret the Ontario Electrical Safety Code (Ontario Code) to ensure installations are done safely. However, the employees who take these calls are not trained to answer technical questions and will direct callers to information available on the ESA's website. They will forward calls to inspectors only if the caller has already paid for an ESA inspection; otherwise, the questions are not answered. And even the forwarded calls are often not answered: about half (50%) of the inspectors we surveyed told us that they do not have time to respond to such forwarded calls.

- **Continuing education is not a licensing requirement for master electricians.** The ESA updates the Ontario Code every three years, but electricians in Ontario are not required to complete any mandatory training to stay on top of these changes. This increases the risk that changes to the Ontario Code may not be implemented inadvertently. In our 2003 audit of the Ministry of Government and Consumer Services' oversight of delegated authorities, we highlighted this same problem about the lack of any requirement for mandatory continuing training for electricians working in Ontario.

Overall Conclusion

The state of electrical safety in Ontario has improved over the last 10 years. However, the ESA does not operate efficiently in carrying out its mandate to improve public electrical safety and focuses its costly resources on inspecting less complex electrical installations.

The ESA has also been unsuccessful in preventing illegal electrical installations, a problem that is widespread in Ontario and is partially due to the current legislation that prevents certified and master electricians from offering electrical services to the public. The ESA has also not been able to deal with the widespread availability of uncertified electrical products online. This has resulted in the ESA not fulfilling all of its responsibilities under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996* (Acts) to improve public electrical safety.

The Ministry of Government and Consumer Services has not fulfilled its oversight responsibilities to ensure that the ESA is operating efficiently, including monitoring that resources are deployed efficiently without compromising public safety. In addition, the Ministry has failed to ensure that the ESA's non-mandatory inspections are not prioritized ahead of its regulated responsibilities.

This report contains 25 recommendations, with 50 action items, to address our audit findings.

OVERALL RESPONSE FROM THE ESA

The Electrical Safety Authority (ESA) appreciates the work done by the Office of the Auditor General of Ontario and the opportunities presented for further improvement. The ESA's contribution to a robust electrical safety culture is highlighted in the results of the Harm Reduction strategies completed over the past 10 years. During this time, electrical-related fatalities have decreased to the point where they now occur at a rate of less than one in a million, while emergency department visits from electrical injuries have decreased by 40%. The ESA takes a leadership role in the production of Ontario's Electrical Safety Report, which establishes solid measures of electrical safety performance improvement and assists the ESA, its safety partners and the electricity sector.

The ESA continues to transform to a modern and results-based approach to regulatory oversight with its successive Harm Reduction Strategies, with no fee increases since 2016. This journey continues with the launch, earlier this year, of Risk Based Oversight for inspections as a means of improving safety and reducing regulatory burden while focusing on higher-risk installations.

Our most recent corporate strategy also supports dedicated plans to:

- renew our approach to contractor licensing by reducing administrative burdens for licensees, becoming more transparent and addressing illegal operators;
- evolve our product safety oversight, recognizing the complexity of both federal and provincial jurisdiction in this area and challenges posed by increasing numbers of online product sales;
- focus on organizational excellence, efficiency and cost-effectiveness;
- improve the experience of our customers; and
- leverage digital tools to be more efficient.

The ESA appreciates the support and oversight of the Ministry of Government and Consumer Services, as it undertakes the work already underway and to be undertaken with safety partners and stakeholders to address the recommendations of this report.

OVERALL RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services (Ministry) would like to thank the Auditor General and her staff for their work on the audit and recommendations. The Ministry welcomes the recommendations on how the Electrical Safety Authority (ESA) is performing and recommendations to strengthen the ESA's operations and the Ministry's oversight, so Ontario can continue to have a strong record of public safety.

The Ministry recognizes the importance of the ESA fulfilling its legislative responsibilities in a manner that protects, enhances and improves public safety.

The Ministry takes its oversight of the ESA's responsibilities seriously and is committed to examining areas where it can enhance its oversight processes to provide greater assurances that the ESA is meeting its public safety mandate in the interests of the people of Ontario.

The Ministry will work with the ESA as well as industry partners, other ministries, and levels of government identified in the report in its consideration of the recommendations and action items, as appropriate.

For those recommendations directed to the ESA, the Ministry will request that the ESA provide the Ministry with an implementation plan that outlines the specific steps the ESA plans to take to implement each recommendation and to ensure they are addressed in a timely and responsive manner. The Ministry will closely monitor and track the ESA's implementation of each recommendation.

2.0 Background

2.1 Overview

Ontario law requires that the Electrical Safety Authority (ESA) must be notified of almost all electrical installation work, either before the work begins or within 48 hours of the start of work. Electrical installation work involves adding or replacing any electrical wiring and devices such as an electrical panel. The only people allowed to do this work are:

- ESA-licensed contractors;
- homeowners (but only in their own homes); and
- owners or employees (but only for their own industrial facilities or farms).

Ontario law also requires that all electrical products sold in Ontario be certified for safe use.

In April 1999, the government established the ESA as a delegated authority to oversee public electrical safety. Prior to the establishment of the ESA, electrical inspection was delivered directly by Ontario Hydro. **Appendix 1** provides a background on the evolution of electrical safety and inspections in Ontario.

The ESA's authority and mandate are established under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996*. Under these two Acts, the ESA is responsible for:

- updating the Ontario Electrical Safety Code (Ontario Code);
- licensing electrical contractors and master electricians;
- inspecting installations to ensure that they comply with the Ontario Code;
- investigating and prosecuting those who perform illegal installations;
- overseeing the local distribution companies (distributors)–for instance, Toronto Hydro–to ensure they comply with the Regulation 22/04 Electrical Distribution Safety; and

Figure 1: ESA's Operational Statistics, 2015/16–2019/20

Source of data: Electrical Safety Authority

Activity	2015/16	2016/17	2017/18	2018/19	2019/20
Customer calls answered	542,867	583,238	585,749	603,899	603,575
Inspections conducted	451,878	485,848	468,498	470,991	458,030
Electrical distribution system inspections conducted	418	360	481	392	382
Electrical contractor licences issued	642	700	697	712	726
Master electrician licences issued	791	787	751	803	793
Licenses renewed (contractor and master electrician)	14,711	16,319	21,952	22,898	23,136
Licences suspended (contractor and master electrician)	64	79	75	92	89
Product safety incident reports investigated	364	432	399	520	519
Charges laid	82	92	86	72	64
Number of complaints resolved	88	55	45	26	27

- overseeing the safety of electrical products sold in Ontario.

The ESA is a not-for-profit delegated authority that does not receive any government funding. It is funded from the fees that it charges for its work. **Appendix 2** presents a detailed fee schedule. **Figure 1** provides an overview of key statistics from the ESA's operations.

The ESA collects additional fees for work it does outside of its responsibilities under the Acts: specifically, for general inspections, electrical safety training and certifying the safety of electrical products. The ESA is allowed to do this additional work as long as it promotes electrical safety and the additional work does not impact its responsibilities under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996*.

In 2019/20, the ESA's revenue totalled about $113.3 million, about $20.5 million (18%) of which came from its additional work. The ESA's largest expenses ($96.5 million or about 83% of its total expenses) are salaries, benefits and travel. **Figure 2** shows the revenue over expenses in the last five years. The ESA is the only delegated authority in Ontario with a unionized workforce, which originated in the time when the ESA's function was part of Ontario Hydro. ESA inspectors and customer service representatives are represented by the Power Workers' Union, and all other unionized employees are represented by the Society of United Professionals.

The ESA employs about 530 people. About 270 are inspectors, and 76 are staff who answer about 600,000 calls and schedule about 450,000 inspections each year. The ESA's additional work of certifying the safety of electrical products is operated as a separate division called "ESAFE" which employs 32 people. **Appendix 3** is an overview of the ESA's organizational structure.

The Ministry of Government and Consumer Services (Ministry) is responsible for overseeing the ESA. In 1999, the Ministry entered into an Administrative Agreement (Agreement) with the ESA that outlines ESA and Ministry responsibilities. The most recently negotiated agreement was signed in 2013.

Appendix 4 provides a glossary of key terms used throughout this report.

2.2 Licensing Master Electricians and Contractors

In Ontario, there are two categories of electrician: certified and master. There are also licensed electrical contractors (contractors). The ESA licenses master electricians and contractors, but it does not license or regulate certified electricians.

Figure 2: Revenues and Expenses by Category, 2015/16–2019/20 ($ million)

Source of data: Electrical Safety Authority

	2015/16	2016/17	2017/18	2018/19	2019/20
Revenue					
Regular inspection	59.4	62.3	64.2	65.2	65.1
Periodic inspection	22.2	22.1	22.6	23.5	24.2
Product approval-ESAFE	10.2	10.8	11.9	12.2	12.1
Contractor licensing	4.1	4.3	4.4	4.6	4.7
Electricity distributors fee	2.7	2.7	2.7	2.7	2.7
Investment and other income*	6.5	11.3	7.9	8.3	4.5
Total Revenue	**105.0**	**113.5**	**113.7**	**116.4**	**113.3**
Expenses					
Salaries and benefits	77.9	81.9	83.4	87.7	89.1
General administrative	12.1	11.2	10.4	10.4	10.9
Travel	6.3	6.5	7.3	7.3	7.4
Purchased services	4.2	5.2	4.9	5.5	6.3
Amortization	2.7	2.8	2.7	3.0	2.9
Total Expenses	**103.2**	**107.6**	**108.8**	**113.8**	**116.5**
Excess of Revenue Over Expenses	**1.7**	**5.9**	**4.9**	**2.7**	**(3.1)**

Note: Totals may not add up due to rounding.

* The ESA generates investment income by investing cash it has reserved for future expenditures on post-employment benefits.

To become a certified electrician, a person must complete an apprenticeship training program and obtain a Certificate of Qualification through the Ontario College of Trades, a process that takes about five years. Certified electricians are usually employed by industrial facilities or contractors.

To become a master electrician, a person must first have at least three years experience as either a certified electrician or an engineer who works for a contractor, or be a certified engineering technician or technologist working for an electrical contractor or a powerline technician. A person with these qualifications must then pass an ESA-administered exam. The master electrician licence costs $80 plus HST annually. Master electricians can be employed by contractors to supervise the work of certified electricians. They can also become licensed electrical contractors themselves.

To become a contractor, a business or individual applicant must pay an ESA licence fee of $395 plus HST, which is valid for five years and must be renewed, and must meet all of the following criteria:

- be at least 18 years old;
- be a master electrician, or employ at least one master electrician who is designated to carry out electrical work on the applicant's behalf;
- have an address for service in Ontario;
- have public liability and property damage insurance coverage of at least $2 million;
- have registered with the Workplace Safety and Insurance Board (WSIB) if employing others to work on their behalf;
- not be in default of filing a return to the Ministry of Finance or Canada Revenue Agency, or of any tax penalty/interest; and
- not owe the ESA any money for which payment arrangements have not been made.

As of December 31, 2019, there were about 32,000 certified electricians, 14,500 master electricians and 9,000 contractors in Ontario.

2.3 Inspections of Installations

Most of the ESA's staff and resources are dedicated to inspecting electrical installations. ESA inspectors who themselves are certified or master electricians perform three types of inspections: regular (constituting the majority of inspections), periodic and general. **Figure 3** provides the number of inspections by location and assigned region for inspectors for fiscal 2019/20.

2.3.1 Regular Inspections

Regular inspections are performed in response to notifications that the ESA receives about new installations. They account for about 90% of all ESA inspections. Over the past five years, the ESA received about 1.8 million notifications or, on average, about 360,000 each year. Almost all of the 1.8 million notifications (95%) came from licensed contractors, with the remaining 5% coming from homeowners. **Figure 4** shows the number of notifications the ESA received over the past five years and where the installations were done.

On July 6, 2020, while we were performing our audit, the ESA adopted a new risk-based inspection approach that applies to all notifications. The ESA now will select the installations that it inspects based on the nine factors listed in **Figure 5**.

Between its inception in 1999 and its adoption of its recent new approach, the ESA followed a policy of inspecting all installations it was notified of, with one exception: in the case of contractors enrolled in an ESA program called the "Authorized Contractors Program," the ESA inspected just a sample of the contractors' notifications. This Authorized Contractors Program has been in place since ESA's inception in 1999. As of April 1, 2020, there were about 2,340 contractors enrolled in this program. Of the 1.8 million notifications the ESA received in the past five years, about 860,000, or just under half (48%), were from Authorized Contractors. To participate in this program, a contractor must have a good track record of performing safe installations and pay an annual participation fee that ranges from $127 to $816, depending on their volume of work.

2.3.2 Periodic Inspections

Periodic inspections are only offered to industrial facilities that conduct many routine installations, such as relocating or installing new machinery.

Facilities that find it impractical to call the ESA each time they have an electrical item installed can instead record each installation in a log, pay an annual inspection fee and request that the ESA inspect them periodically. The ESA will then periodically (usually once a year) visit such facilities and inspect a sample of the logged installations. A facility can choose to switch back to regular inspections at any time.

As of March 31, 2020, there were 4,385 facilities with more than 25,000 locations across Ontario (one facility can have more than one location) that

Figure 3: Number of Inspections by Location Type and Region, 2019/20

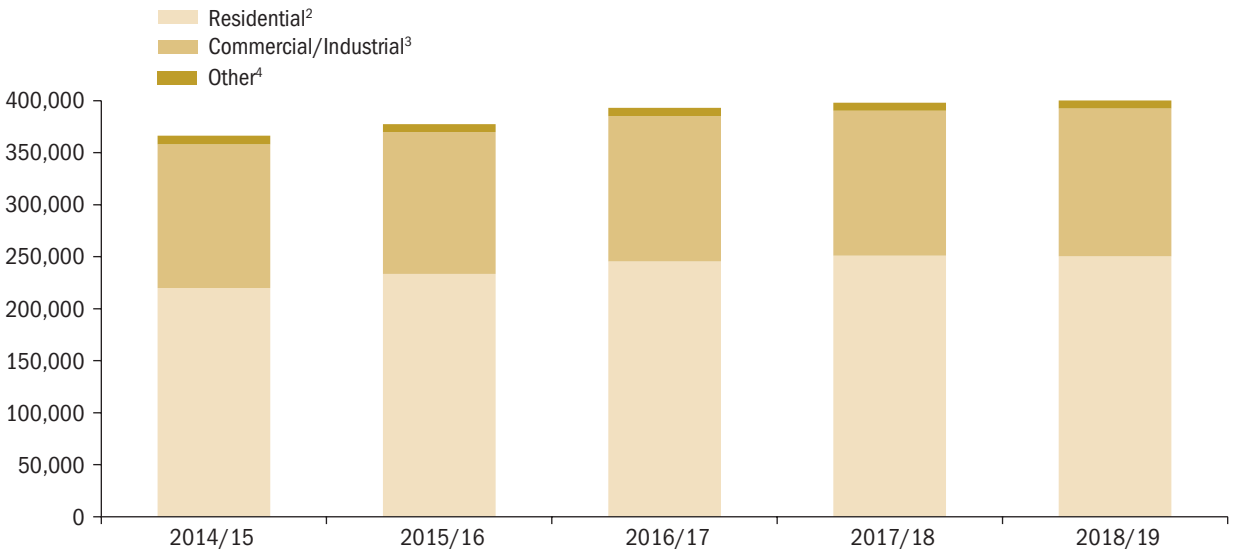
Source of data: Electrical Safety Authority

	Region				
Location Type	**Central**	**Eastern**	**Western**	**Southern**	**Northern**
Residential[1]	77,355	21,646	31,592	4,182	20,396
Commercial[2]	33,839	588	1,727	200	8,906
Industrial[3]	16,303	72,435	90,981	34,242	11,971
Other[4]	5,657	8,562	9,721	3,608	4,118

1. Residential includes freehold homes, cottages, mobile homes, apartments and townhouses.
2. Commercial includes office buildings, retail stores, schools, hospitals and public buildings.
3. Industrial includes production facilities.
4. Other includes agricultural sites, and carnival and entertainment sites such as special events, trades shows and commercial shoots.

Figure 4: Notifications Received by the ESA by Location, 2014–2019[1]

Source of data: Electrical Safety Authority



1. Rounded to the nearest hundredth.
2. Residential includes freehold homes, cottages, mobile homes, apartments and townhouses.
3. Commercial and industrial facilities include office buildings, retail stores, schools, hospitals and public buildings, production facilities and large commercial buildings.
4. Other includes agricultural sites, carnival and entertainment sites such as special events, trade shows and commercial shoots.

Figure 5: Nine Risk Factors Used in the New Risk-Based Inspection Model

Source of data: Electrical Safety Authority

Risk Factors	
1.	Type of installer (e.g., homeowner vs licensed electrical contractor)
2.	History of performance installing similar installation in the last six months (e.g., number of instances of non-compliance found in the past)
3.	Complexity (e.g., pot light vs wiring new home)
4.	Era of facility (e.g., new vs old building)
5.	Building classification (e.g., residential vs commercial/industrial)
6.	Scope of work (e.g., high vs low voltage)
7.	Accessibility (e.g., accessed by general public vs electrical trade only)
8.	Public exposure (e.g., hospital vs cottage)
9.	Environmental factors (e.g., installations exposed to different weather conditions))

were periodically inspected by the ESA. Over the past five years, the ESA conducted about 38,500 periodic inspections per year.

The annual inspection fee is calculated based on the number of installations logged and the size and complexity of the facility. For example, a large and complex facility such as Toronto Community Housing pays about $750,000 per year.

2.3.3 General Inspections

General inspections are not required under the Acts. They can be performed by the ESA on request, but can also be performed by electrical contractors themselves. Common situations requiring them are when homeowners need to satisfy the terms and conditions of their home insurance, of fire codes and of property sale agreements. The ESA also

receives requests from federal buildings– such as airports, mines and Indigenous facilities.

General inspections usually involve a visual examination of electrical wiring, outlets and switches, especially in buildings constructed prior to 1976, which contain old aluminium wiring. Inspectors also remove cover plates of outlets and switches on a sample basis to further examine the electrical wiring. The ESA charges $399 plus HST for such an inspection and conducts about 3,500 of them each year.

2.3.4 Inspection Process

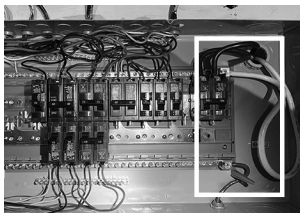
All regular and general inspections are performed by the same ESA inspectors. Periodic inspections are performed by 66 dedicated ESA inspectors. ESA inspectors are located throughout the province in regional offices, and regular and general inspections are assigned to the inspector who is the closest to the location of the installation based on the postal code. The frequency and timing of periodic inspections are determined on a contract basis with the facility; periodic inspections are often pre-scheduled.

Each inspector is responsible for managing their daily workload of assigned inspections. Inspectors have remote access to the ESA's system and document their inspections by updating inspection files with information such as the date and time of the inspection and noted concerns with the installation.

Most regular inspections (80%) take on average about 18 minutes to complete and involve an inspector walking around the job site and visually examining if the installation is safe. **Figure 6** shows examples of the typical installations that inspectors examine.

A small portion (20%) of inspected installations are more complex and therefore can take more time than the average 18 minutes. For example, a new, large industrial facility, commercial building or agricultural site may require inspection of

Figure 6: Typical Inspected Installations
Prepared by the Office of the Auditor General of Ontario

Installation	Installation Images	What is Examined
Power Outlet		Power outlets installed in close proximity to water must have a Ground Fault Circuit Interrupter (GFCI). GFCI prevents electrocution if water contacts the outlet.
Electrical Panel Board		To prevent electrocution the three thick wires should be installed as shown in the pictures.
Exterior Power Outlet		Exterior power outlets must have covers and must have a Ground Fault Circuit Interrupter that has the ability to automatically cut power when water is detected.

multiple complex electrical systems in a very large space, and require that the inspector also confirm the installation was done in accordance with pre-approved electrical engineering design plans.

2.3.5 Unsafe Installations

When an unsafe installation is found during an inspection, the ESA issues a notice requesting that the installation be fixed. The notice describes what is wrong with the installation and what must be done to fix it. All installations must be fixed as soon as possible. Inspectors have the authority to compel distributors to immediately disconnect power if an installation poses an immediate risk of fire and/or electrocution. According to the ESA's policy, inspectors are also required to follow up and check within 14 days to see if the installation has been fixed. The follow-up period can be extended up to 35 days if the risk of fire and/or electrocution is not an immediate safety hazard. The inspection is passed and a Certificate of Inspection is issued once the inspector confirms that the installation has been fixed.

2.4 Oversight of Electricity Distributors

Electricity distributors supply electricity from transmission lines to homes, and commercial and industrial buildings. As of December 2019, there were 62 distributors (for example, Toronto Hydro) in Ontario. The ESA is responsible for ensuring that distributors comply with the Regulation 22/04 Electrical Distribution Safety. This regulation outlines how distributors should safely install and maintain their electrical equipment such as overhead power lines and transformers. To ensure distributor compliance, the ESA:

- periodically (at least once a year) inspects each distributor (larger distributors are inspected two to three times a year); the ESA conducts about 400 such inspections per year;
- obtains an annual audit report from each distributor confirming that it complied with the Regulation 22/04, Electrical Distribution Safety; and
- obtains a declaration of compliance from each distributor declaring that:
  - all serious electrical incidents were reported to the ESA within 48 hours;
  - all unused power lines were disconnected;
  - any changes in ownership were reported to the ESA;
  - approval from a professional engineer was obtained when deviations were made from the regulation when installing new equipment or power lines; and
  - safe distances between buildings and power lines were maintained.

In 2019, the ESA's distributor oversight fee ranged from $1,100 to $781,473, depending on the number of customers served by each distributor.

2.5 Investigations and Prosecutions

The ESA primarily relies on tips from the public and leads from its own inspectors to identify and investigate illegal installations (where either the ESA was not notified or the installer was not licensed, and therefore not authorized, if not the owner of the building). The ESA obtains services from 14 investigators, which it designates as provincial offences officers. The officers can issue search warrants and compel evidence to prosecute people responsible for illegal installations. First-time offenders are usually issued warning letters. The ESA can also suspend a contractor's licence or prosecute offenders in Provincial Court. Those found guilty by Provincial Courts can face up to one year in prison, and maximum fines of $50,000 for an individual and $1 million for a corporation. There are no minimum fines. Fines are set and collected by the Provincial Courts.

Since 2015, the ESA has successfully prosecuted 17 electrical contractors, which resulted in court fines of $517,000.

2.6 Oversight of Electrical Product Safety

The ESA is responsible for making sure that all electrical products used or sold in Ontario are tested for safety and certified by an accredited certification agency. There are about 35 such agencies in Canada, overseen by the Standards Council of Canada, a federal organization responsible for developing product national safety standards. To determine if a product is certified, a label issued by one of the 35 certification agencies must be affixed to the product and the product packaging. **Figure 7** shows an example of a certification label affixed to a certified electrical product.

If a manufacturer or seller is found to be distributing uncertified electrical products in Ontario, the ESA will issue a letter which outlines the steps that must be taken to comply with Regulation 438/07, Product Safety. The ESA can issue a product recall for commercial and industrial electrical products and has an agreement with Health Canada to report incidents involving consumer electrical products. Health Canada can co-ordinate a nationwide product recall for consumer electrical products when necessary. If a company does not comply with Regulation 438/07, Product Safety, the ESA can proceed with prosecution in Provincial Courts where the company could face fines of up to $1 million.

Figure 7: Example of a Certification Label on an Electrical Product

Prepared by the Office of the Auditor General of Ontario

2.7 Additional Work

In addition to general inspections, the ESA provides two other services that are, although related, beyond its required responsibilities under the Acts:

- It tests the safety of and certifies electrical products, including specialized commercial and industrial equipment that is often produced in small quantities. In the 2019/20 fiscal year, the ESA certified about 87,000 products, for which it collected $12 million in fees.
- It offers electrical safety training on subjects such as the Ontario Code and power-line safety, as well as a master electrician exam prep course. All together this training generated about $2.2 million in revenue in 2019/20.

2.8 Electrical Safety and Incident Reporting

The Ontario Code requires that all serious electrical safety incidents are reported to the ESA within 48 hours of occurrence. The ESA dispatches its inspectors to the sites where electrical safety incidents occurred that may have potentially resulted in a fatality, critical injury, or substantial damage to property. Inspectors are also dispatched when requested by the Office of the Fire Marshal or the Ministry of Labour, Training and Skills Development.

Figure 8: Electrical-Related Fatalities and Electrical Injuries Reported by Emergency Departments in Ontario, 2010–2019

Source of data: Electrical Safety Authority

Injury	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fatalities	15	10	9	19	15	14	13	9	19	12
Electrical injuries*	1,734	974	1,112	1,127	1,004	937	1,021	994	999	n/a

* 2018 electrical injury data is the most up to date available information.

Figure 9: Electrical Fires by Property Type, 2009–2018 [1]

Source of data: Electrical Safety Authority

Property Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residential	1,875	1,802	1,578	1,503	1,498	1,540	1,499	1,380	1,343	1,334
Industrial	131	132	143	129	132	150	114	128	126	97
Institutional[2]	115	75	96	63	81	90	80	67	78	54
Retail[3]	80	86	75	60	76	73	62	68	61	50
Commercial[4]	57	59	47	52	51	53	39	44	49	49
Health care and Detention[5]	38	48	29	36	33	44	31	28	38	42
Total	**2,296**	**2,202**	**1,968**	**1,843**	**1,871**	**1,950**	**1,825**	**1,715**	**1,695**	**1,626**

1. 2018 fire incident data is the most up to date available information.
2. Includes schools, arenas, libraries, churches, day cares and funeral homes.
3. Includes departmental stores, malls, supermarkets and restaurants.
4. Includes office buildings, post offices and police stations.
5. Includes hospitals, retirement homes, prisons and detention centres.

Each year, the ESA also obtains and consolidates statistics on electricity-related fatalities, injuries and incidents from the Workplace Safety and Insurance Board (WSIB), the Office of the Fire Marshal and the Office of the Chief Coroner; and publishes this information in its annual Ontario Electrical Safety Report.

The numbers of electrical and power-line–related injuries and fatalities in Ontario were about the same in 2019 as in 2010, averaging about 14 per year. Over that time, there were 135 electricity-related fatalities in Ontario, of which 52 were due to electrocution and 83 were due to electrical fires. More than half of the electrocutions occurred due to accidental contact with power lines, and half of the fire-related deaths were caused by misuse of kitchen appliances, particularly stove range-top burners.

The number of electrical injuries reported by emergency departments in Ontario reduced by 42%, from 1,734 in 2010 to 999 in 2018. **Figure 8** shows the number of fatalities and electrical injuries reported by emergency departments over the last 10 years. Similarly, electrical fires reported by the Fire Marshal have also trended downward by 30% from 2,296 in 2009 to 1,626 in 2018, as shown **Figure 9**. Lastly, on average, the WSIB received about 74 claims for electrical injuries in the workplace each year since 2010. WSIB claims related to electrical injuries are shown in **Figure 10**.

Figure 10: Workplace Safety and Insurance Board Lost-Time Electrical Injury Claims, 2010–2019
Source of data: Electrical Safety Authority

Year	# of Claims
2010	88
2011	70
2012	79
2013	82
2014	61
2015	66
2016	64
2017	70
2018	65
2019	86
Total	**731**

3.0 Audit Objective and Scope

The objective of our audit was to assess whether the Electrical Safety Authority (ESA) has effective processes and systems in place to:

- undertake safety activities, including inspections, licensing, investigation, enforcement and product approvals, in accordance with Part VIII of the *Electricity Act, 1998* (Act) and its regulations, and in a way that protects the safety of Ontarians;
- deploy its resources efficiently and effectively to carry out its electrical safety activities; and
- measure and publicly report on the effectiveness of the activities it undertakes to protect the safety of Ontarians.

In addition, our audit assessed whether the Ministry of Government and Consumer Services (Ministry) has effective oversight processes in place to monitor and confirm that the ESA effectively delivers on its responsibilities to protect the safety of Ontarians.

Before starting our work, we identified the audit criteria we would use to address our audit objective. These criteria were established based on a review of applicable legislation, policies and procedures. Senior management at the ESA and the Ministry of Government and Consumer Services reviewed and agreed with our objective and associated criteria as listed in **Appendix 5**.

Our audit work was conducted at the ESA covering the time from 2014 to July 2020. However, in some areas we analyzed data going back 10 years. The focus of our audit was on examining the ESA's six main areas of responsibility:

- updating the Ontario Electrical Safety Code (Ontario Code);
- licensing electrical contractors and master electricians;
- inspecting installations to ensure that they comply with the Ontario Code;
- investigating and prosecuting those who perform illegal installations (where the installer either did not notify the ESA or was not licensed if not the owner of the building);
- overseeing distributors–for instance, Toronto Hydro–to ensure they comply with the Regulation 22/04 Electrical Distribution Safety; and
- overseeing the safety of electrical products sold in Ontario. Our audit also covered the ESA's additional work, i.e., general inspections, training and electrical product certification.

In conducting our work, we interviewed staff at the ESA who inspect installations, license electrical contractors and master electricians, investigate electrical incidents, inspect distributors and prosecute illegal installations. We also interviewed the ESA's senior management, inspectors, customer service representatives and the Chief Public Safety Officer.

We collected information from key Ministry personnel who regularly interact with the ESA to assess the Ministry's processes for overseeing the ESA's performance in meeting its statutory mandate.

During COVID-19, the ESA provided us with remote access to its computer systems, which we used to access inspection files and to conduct data

analysis. We reviewed documents including current safety laws in place, internal policies and procedures, minutes from board meetings, documented communications with the Ministry and inspection reports. To observe how the ESA conducts its inspections, in February and March 2020, prior to the outbreak of COVID-19, we accompanied ESA inspectors on inspections of 60 sites where electrical work took place.

We assessed the size and cost of the ESA's workforce by reviewing human resource information and agreements in place with the two unions that represent ESA workers. We also obtained information from two large delegated authorities to compare their operations to the ESA.

To confirm and corroborate our observations, we surveyed all of the ESA's staff who handle public calls and conduct inspections, and received response rates of 89% and 83%, respectively. Our survey questions were reviewed by an independent expert to ensure questions were not biased.

We had discussions with the Ministry of Labour, Training and Skills Development, which worked with the Ontario College of Trades to allow us to gain an understanding of its oversight role over certified electricians who are not licensed by the ESA.

In July 2020, we called 20 randomly selected licensed electrical contractors to determine if they would notify the ESA of their electrical installations as required by Ontario law. We also responded to 20 advertisements offering electrical services to determine if they were legally allowed by the ESA to perform electrical installations.

We contacted four large home insurers, the Ministry of Municipal Affairs and Housing and five Chief Municipal Building Officials to determine if they have any requirements that electrical installations be inspected by the ESA.

As part of our review of the ESA's oversight of distributors, we talked to the Electricity Distributors Association to gather its perspective of the ESA and its effectiveness.

As part of our review of the ESA's oversight of electrical contractors and master electricians, we had discussions with the Electrical Contractors Association of Ontario and the Ontario Electrical League to gather their perspective on the ESA's operations.

We had discussions with the Chairs of the ESA's stakeholder advisory councils including the Consumer Advisory Council, Contractor Advisory Council, Cross-Sector Advisory Council, Electrical Contractor Registration Agency Advisory Council, Ontario Provincial Code Committee, and the Utility Advisory Council.

We had discussions with Health Canada to understand its role and involvement with electrical product safety in Ontario. In July 2020, we purchased electrical products online to determine how easily the public can access uncertified electrical products. With the help of the ESA we engaged a third-party agency to test electrical products we purchased online to assess if they are safe.

We engaged an expert in the electricity sector to help us corroborate and confirm our observations and review our report for technical accuracy. Our expert has over 20 years of experience in electrical inspections and is a Certified Canadian electrical inspector for installations and product approvals. Our expert also inspected the electrical products we purchased online to verify whether they had the appropriate certification from an accredited certification agency for sale and use in Ontario.

We also spoke to representatives of the two unions that represent ESA workers, the Power Workers' Union and the Society of United Professionals.

Lastly, we conducted jurisdictional scans to identify best practices and compare how technology is being used to increase efficiency of inspections in other jurisdictions in Canada, including British Columbia, Manitoba, Saskatchewan, Alberta and the Northwest Territories.

We conducted our work and reported on the results of our examination in accordance with the applicable Canadian Standards on Assurance Engagements–Direct Engagements issued by the Auditing and Assurance Standards Board of the

Chartered Professional Accountants of Canada. This included obtaining a reasonable level of assurance.

The Office of the Auditor General of Ontario applies the Canadian Standard on Quality Control and, as a result, maintains a comprehensive quality-control system that includes documented policies and procedures with respect to compliance with rules of professional conduct, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Ontario, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Impact of COVID-19

The ESA made a number of operational changes in response to COVID-19, which coincided with the time we were conducting our audit. For example, in April 2020, it stopped conducting some of its in-person inspections and began to temporarily inspect these installations remotely. The ESA anticipated that these operational changes would remain in place for the foreseeable future.

4.0 Detailed Audit Observations

4.1 Operational Inefficiencies

4.1.1 ESA's Extent of Inspections and Level of Staffing Are Interdependent

The ESA is self-funded, and its inspection fees fund most of its operations. Almost 80% ($90 million) of its total annual revenue of about $113.3 million comes from its inspection fees. As such, it is incumbent on the ESA to objectively assess the appropriate level of inspections necessary to accomplish its mandate and the related level of staffing needed to execute the inspections.

The ESA's inspection approach since its inception has been to inspect most electrical installations it is notified of. The performance of many inspections indiscriminately (that is, with no prioritization of high-risk installations over routine and simple installations) is not a best practice or an efficient use of resources. Our expert advised us that many routine and simple electrical installations, especially those done by experienced electrical contractors, do not require an inspection to be deemed safe. In fact, Technical Safety BC, a British Columbia organization performing work comparable to the ESA inspects only about 20% of the installations it is notified of. Technical Safety BC has been using a risk-based inspection approach for about 15 years to target only high-risk installations.

In 2011, the ESA tried to implement a risk-based inspection approach that would both focus on high-risk installations and reduce the number of inspections. Adopting a risk-based inspection approach would allow the ESA to better identify higher risk installations by considering a number of factors such as the past performance of the licensed electrical contractor and the location and complexity of the installations. However, the approach was not implemented at that time because the ESA was not successful in negotiating with the union that represents the ESA's inspectors, who did not support the new inspection approach out of its concern about jobs being lost as a result.

In 2019, the ESA negotiated a buy-in from the union for the support of risk-based inspections after it agreed not to reduce the number of its inspectors when the new inspection approach was implemented. **Figure 5** provides the nine risk attributes used in the ESA's new risk-based inspection approach. The new inspection approach was implemented on July 6, 2020, and has an objective of reducing inspections from the current 67% to 57% of the installations the ESA is notified each year.

Although the ESA has an objective to reduce its inspection volume by 10%, it is still expected to

generate the same level of revenue because of its commitment to maintain a workforce of the same size. The ESA has no plans to change its fee model and, as a result, the ESA will continue to collect inspection fees for electrical installations that it does not inspect in order to sustain the current size of its inspector workforce.

Despite the ESA's commitment to maintain the size of its workforce, there are a number of options that can be explored to streamline its operations without jeopardizing public safety, and accordingly, to make changes to its staffing level. In the ESA's collective agreements with its unions, there are clauses that enable the ESA to manage its workforce in the event of changes to economic conditions. Also, the Ministry has the authority to review the ESA's mandate and make legislative and/or regulatory changes where necessary.

4.1.2 For Most Positions, ESA Staff Compensation Is High When Compared to Similar Positions at Other Delegated Authorities

In 2019/20, the ESA spent about 80% (about $89 million) of the total fees it collected on salaries and benefits.

The ESA has two inspector categories: regular and senior. There are 231 regular inspectors, who earn an average annual salary of $116,000, and 39 senior inspectors, who earn an average annual salary of $135,000. The ESA also employs 76 administrative staff who answer calls and schedule inspections. They earn an average annual salary of $82,000.

When we compared these salaries to similar positions at two other delegated authorities, we found that the ESA pays its staff significantly more. For example:

- Compared to inspectors at one delegated authority (average annual salary of $90,000 a year), the ESA's regular inspectors earn about 30% more and the ESA's senior inspectors earn about 50% more. The inspectors have similar educational and work experience to the ESA's inspectors.
- The ESA staff who answer calls and schedule inspections are paid almost double the $42,000 that another delegated authority, on average, pays its staff for doing the same work.

We also found that the ESA inspectors receive additional compensation incentives not available to the comparable inspectors (see **Figure 11**).

4.1.3 ESA Is Not Using Technology to Improve the Efficiency of Its Inspections

Many inspections of installations can be done remotely by examining photos or videos. However, we found when we accompanied five inspectors in February and March 2020 that almost all of the

Figure 11: ESA Inspector Additional Compensation Incentives

Prepared by the Office of the Auditor General of Ontario

	Incentive
1.	Bonus Plan—Maximum 4% of Base Salary
2.	Unlimited Daily Lunch Reimbursement[1]
3.	Personal Use of ESA Vehicle
4.	Reimbursement of Ontario Health Premium[2]
5.	Defined Benefit Pension[3]
6.	8 Sick Days[4]

1. Amount is not capped but is supposed to be "reasonable and appropriate."
2. Amount is capped at $900 per year.
3. Another delegated authority offers a defined contribution pension plan.
4. ESA inspectors can accumulate unused sick days up to 26 weeks. Another delegated authority's inspectors have six sick days and cannot accumulate them.

inspections were done by in-person observations, a much less efficient inspection method for more straightforward installations. We confirmed that until April 2020, the ESA primarily conducted its inspections in person, incurring significant inspector travel time and vehicle costs.

We noted that organizations similar to the ESA in British Columbia, Alberta, Manitoba and the Northwest Territories have for years been using photos and videos to inspect some installations (some for as long as 10 years). In response to the COVID-19 pandemic, the ESA began to inspect installations remotely in April 2020. The ESA considers this to be a temporary measure.

Using actual driving distance information reported by all ESA inspectors, we found that for the 12-month period from April 2019 to March 2020, an inspector spends about 30% (2.5 hours) of their eight daily working hours in a car, driving an average of about 130 kilometres between inspection sites. Instead of travelling, inspectors would be able to remotely examine more installations per day. With the help of our expert, we estimated that the number of inspections done in a day, if done remotely, would almost double from the number done in person–from about 18 to about 36 per day per inspector. Doing more remote inspections could also significantly reduce the $4 million the ESA currently pays each year to operate the about 310 vehicles its inspectors use.

RECOMMENDATION 1

To enable the resources of the Electrical Safety Authority (ESA) to be used more efficiently and effectively to improve public electrical safety, we recommend that the ESA:

- refine and further develop its new risk-based inspection approach so that it will result in fewer inspections of low-risk installations and more inspections of higher-risk installations;
- set a target for the reduction of low-risk inspections and publicly report on its performance against this target; and
- wherever possible without jeopardizing public electrical safety, conduct its inspections remotely.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will:

- further refine the risk-based inspection approach to focus more resources on high-risk installations, as well as the underground economy;
- after accumulating one year's data on the impact of the new risk-based approach, establish and publicly report on performance targets; and
- further our efforts within the ESA and with our stakeholders, to enhance the use of remote inspections where public safety is not compromised.

4.1.4 High Fees Charged for Homeowner Installations Pose Risk That Homeowners Will Evade Safety Inspections

According to its administrative agreement with the Ministry, the ESA is supposed to set fees to ensure that its costs for ensuring electrical safety are fully recovered and that the fees encourage compliance. However, we found that the ESA charges high inspection fees for its highest-risk installations, which are the ones done by homeowners themselves. According to our expert, installations done by homeowners, as opposed to those completed by experienced contractors, have a higher likelihood of being done incorrectly and being unsafe. The ESA's inspection fees for these installations are higher and in some cases, more than double what contractors are charged for the same inspection. This can discourage homeowners from requesting an inspection and defeats the ESA's objective of improving public safety. For example, to inspect an electrical panel box installed by a licensed contractor, the ESA charges $79. If the installation was done by a homeowner, the same inspection costs $184. **Figure 12** shows the difference in the fees that the ESA

Figure 12: Difference in Fees Charged by ESA for Inspections
Source of data: Electrical Safety Authority

Electrical Job	ESA Inspection Fees			
	Contractor ($)	Homeowner ($)	Homeowner Pays Extra ($)	Difference (%)
Kitchen, new wiring and installation of: • 10 pot lights; • 8 receptacles; • 2 light switches; • 1 hood fan over the stove; and • 1 ceiling fan.	124	189	65	52
Bathroom, new wiring and installation of: • 1 ceiling fan; • 1 light switch; • replacing a receptacle; and • making changes to a residential electrical panel 200 amps or less to accommodate new wiring.	125	191	66	53
New wiring throughout a 2,000 sq. ft. detached home	219	490	271	124
New wiring throughout a 1,000 sq. ft. condo	219	490	271	124
Installation of 20 pot lights	124	189	65	52

charges homeowners and contractors for the same inspection of simple electrical installations.

The ESA told us that installations done by homeowners take more time to inspect, so to fully recover its inspection costs, its fees need to be higher. We analyzed the ESA's inspection files from 2014 to 2018 and found that inspectors on average spent the same amount of time, 18 minutes, inspecting installations done by homeowners as they spent on contractors' installations.

We also noted that five provinces including Quebec, New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador restrict homeowners from performing electrical installations in their homes.

4.1.5 Ministry Found ESA to Have the Highest Labour Costs Compared to Other Delegated Authorities in 2015

The Ministry has known for many years that the ESA has the highest operational costs of the province's delegated authorities it oversees, due to the size of its workforce, but it has not addressed the situation. As explained in **Sections 4.1.6** and **4.1.7**, it allows the ESA to operate outside of the government's procurement policies, and the ESA is also not required to follow the government's Travel and Meals Expense Directive. This demonstrates that the Ministry has not held the ESA accountable for its responsibilities under its 2013 administrative agreement. The agreement requires that the ESA ensure that its procurement and travel and meal policies are "in keeping with the spirit of the most recent OPS directives." The Ministry's lack of oversight is further detailed in **Section 4.1.6** and **Section 4.9**.

In 2015, the Ministry hired a consultant to look for cost savings and efficiencies at the eight delegated authorities that it oversaw (the ESA, the Technical Standards and Safety Authority [TSSA], Tarion Warranty Corporation [Tarion], the Real Estate Council of Ontario, the Ontario Motor Vehicle Industry Council, the Travel Industry Council of Ontario, the Board of Funeral Services and the Ontario Wine Appellation Authority). The consultant found that the ESA was the delegated authority with the highest amount of expenditures,

mostly due to its large unionized workforce with high salaries. Specifically, the consultant found that in 2013, of the eight delegated authorities, the ESA had the highest number of full-time staff (445) and, while it collected the highest total fees (about $94 million), it also had the greatest expenses, mostly attributable to salaries and benefits.

Based on the 2018/19 fiscal year financial statements, we found that the ESA is still the most costly delegated authority, with $113.8 million in expenses ($39 million more than the TSSA, the second-most costly; and $52.6 million more than Tarion, the third-most costly).

Licensed electrical contractors pass the ESA inspection fees onto their customers. Therefore, it is important for the ESA to operate cost efficiently.

RECOMMENDATION 2

To enable the resources of the Electrical Safety Authority (ESA) to be used effectively and efficiently to improve public electrical safety, we recommend that the ESA:

- review the fees the ESA charges for homeowner installation inspections with an aim to maintain public compliance with electrical safety laws;
- revisit the fee model as a whole to identify where fees can be reduced; and
- identify and implement changes to streamline its operations and reduce operational costs.

RESPONSE FROM THE ESA

The ESA agrees with this recommendation. The ESA's fee model supports the overall electrical safety system. Therefore, the ESA agrees to review how to balance cost recovery for its activities and fees that provide value for the public.

4.1.6 ESA Would Save About $300,000 to $500,000 if It Complied with the Government's Meal Reimbursement Policy

The ESA allows its inspectors to claim daily lunch expenses when they are in the field conducting inspections regardless of where they travel for work and the distance travelled in the day. We noted that inspectors that work for two other delegated authorities are not allowed to claim lunches when travelling within their assigned region.

The ESA also does not follow the Ontario government's meal reimbursement policy, which caps lunch reimbursements at $12.50 (including tax and gratuities). Instead, inspectors are allowed to spend any "reasonable and appropriate" amount on lunch, at their discretion. In the 2019/20 fiscal year, they spent an average of $20 for each lunch, totalling about $1.3 million, or about $4,800 per inspector. About 80% of approximately 40,000 lunch reimbursements in the 2019/20 fiscal year exceeded $12.50.

We estimate that if the ESA had imposed the meal reimbursement policy's cap in 2019/20, it could have reduced its costs by $300,000 to $500,000. We also found that some inspectors claimed lunches for the contractors whom they inspected and others for celebratory group inspector meals.

RECOMMENDATION 3

To enable the resources of the Electrical Safety Authority (ESA) to be used more effectively and efficiently to improve public electrical safety, and to avoid any perceived or actual conflict of interest, we recommend that the ESA:

- negotiate with the union representing inspectors to more closely align its reimbursement policy with the Ontario government's Travel and Meal Reimbursement Directive to allow for meal reimbursements;
- as soon as possible provide its inspectors with additional guidance on reasonability of meal expenses; and

- disallow any reimbursements for meals inspectors have with licensed electrical contractors.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. The next round of bargaining negotiations will take place in 2023. The ESA will work with the union on a review of the reimbursement policies. The ESA will follow up with inspectors and provide guidance on meal expenses for themselves and licensed electrical contractors.

4.1.7 ESA Is Still Not in Full Compliance with Ontario Government Procurement Policies, Six Years After Ministry Auditors Identified This

Over the last five years, the ESA has spent $22.6 million on externally purchased services such as consulting fees. In October 2014, the Ministry's internal auditors reviewed ESA compliance with the Ontario Public Sector's procurement policies and found that the ESA did not fully comply with them. Almost six years later, we found that the ESA still:

- has not developed the required guidelines on how to manage consultants (for example, there are no specific evaluation criteria or weighting requirements for proposals and quotes in the consultant selection process); and
- does not complete the required performance evaluations for its consultants.

RECOMMENDATION 4

To demonstrate and confirm that the Electrical Safety Authority (ESA) operates economically while improving public electrical safety, we recommend that the ESA implement the changes needed to follow all the requirements of the Ontario Government's Procurement Directive as soon as possible.

RESPONSE FROM THE ESA

The ESA supports this recommendation and is on track to implement the changes needed by the end of this fiscal year.

4.2 Inspections

4.2.1 ESA Inspected Too Many Simple Electrical Installations Instead of Inspecting Higher-Risk and More Complex Installations

As we explained in **Section 2.3.1**, until July 6, 2020, the ESA inspected just under half of the installations it received notifications for from contractors in the Authorized Contractor Program. However, the ESA does not know if inspectors are following the sampling requirements it sets for this program. We did our own review, analyzing the 860,000 notifications received under this program between the 2014/15 and 2018/19 fiscal year, and found that these requirements were not always being followed. Specifically, more than the required number of inspections of simple installations were being performed.

The ESA determines the frequency of inspections based on the complexity of the installation. Simple installations such air conditioning systems are inspected once for every 10 notifications the ESA receives from the same contractor. Notifications of more complex installations, such as wiring an entire home, are all inspected. Thus, depending on the complexity of the installation, the ESA should inspect anywhere from one in 20 notifications from a contractor (the simplest installations) to 100% of notifications from a contractor (complex installations).

The ESA classified 483,000 of the 860,000 notifications it received between 2015 and 2019 as simple installations. As such, inspectors were required to inspect only 14% (68,000) of them, but in fact inspected 113,000. In other words, ESA inspectors completed 45,000 more inspections than required. In doing so, resources and time were unnecessarily

Figure 13: Summary of Our Inspections Analysis

Prepared by the Office of the Auditor General of Ontario

Notifier	Inspection Approach	Installation Type	Notifications Received (2015–2019)	# of Inspections Required	# of Inspections Conducted	Final Result
ACP contractors*	Sample-based	Complex installations	377,000	294,000	243,000	51,000 complex installations received inspection certificates without being inspected
		Simple installations	483,000	68,000	113,000	45,000 simple installations unnecessarily inspected
Non-ACP contractors	100% inspection	All reported installations	940,000	940,000	858,000	82,000 installations received inspection certificates without being inspected
Total—Installations certified without inspections						**133,000**
Total—Simple installations unnecessarily inspected						**45,000**

* Contractors in the Authorized Contractor Program.

expended on simple installations that could have gone toward more complex installations. **Figure 13** summarizes the results of our analysis.

As discussed in **Section 2.3.1**, in July 2020, the ESA implemented a new risk-based approach in which inspectors have some discretion on whether or not to inspect an installation. We acknowledge that it is important for inspectors to have the ability to use their judgment to decide whether or not an installation should or should not be inspected. However, in giving inspectors this discretion in choosing what to inspect, the ESA has not mitigated the risk that inspectors will over inspect simpler installations and fail to inspect all complex installations as required.

4.2.2 ESA Issued Certificates of Inspection for Uninspected Installations for Which It Still Collected $17 Million in Inspection Fees

In March 2020, we accompanied five ESA inspectors on 60 inspections to observe their inspection process. We found that the inspectors were issuing Certificates of Inspection for some installations without physically visiting the site and doing a visual inspection. In our review of inspection files between the 2014/15 and 2018/19 fiscal years, we found that the ESA issued certificates of inspections for about 133,000 uninspected installations (or for 11% of the about 1.2 million installations it was notified of) that required at least one site visit according to the ESA. The ESA collected about $17 million in total fees for these unvisited installations.

We questioned this practice. Inspectors told us they had to clear some installations and issue certificates without seeing them in person because of their heavy daily workload. In addition to being assigned numerous inspections daily, ESA inspectors must also complete other tasks such as documenting inspection results, answering technical questions from contractors and homeowners over the phone, planning their route for site visits and travelling from site to site.

RECOMMENDATION 5

To improve the public electrical safety inspection process and confirm that Electrical Safety Authority (ESA) inspectors are checking installations in accordance with its new risk-based inspection policy, we recommend that the ESA:

- put controls in place to ensure inspectors are not over-inspecting simple installations and under-inspecting more complex installations; and

- stop issuing certificates of inspection for installations that require a site visit but are not inspected.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will:

- implement controls and monitor performance against over-inspecting installations according to their risk rating; and
- on a go-forward basis, stop issuing certificates of inspections and instead issue a Certificate of Acceptance for those notifications we do not physically inspect. This certificate indicates the installation has fallen under the OESC compliance framework.

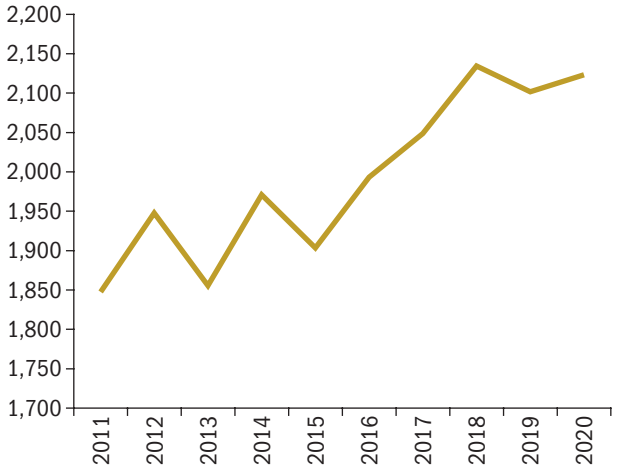
4.2.3 ESA Does Not Consider if Inspectors Are Assigned Too Many Inspections and if They Can Actually Complete Them

We found that when scheduling inspections, the ESA does not consider if its inspectors are being assigned too many inspections and if they have the time to complete them. The ESA schedules inspections centrally and assigns the work to its inspectors based on the number of inspection requests coming into its call centre. It is up to each inspector to manage and organize their daily inspection workload. Inspectors informed us that they do cancel some scheduled inspections on days when they have been assigned too many inspections. Almost 90% (181) of the 205 inspectors responding to our survey indicated that they "agree" that their workload has increased over the past 10 years.

Between the 2010/11 and 2019/20 fiscal years, the average number of inspections assigned per year to each inspector increased by 15%, from about 1,850 to 2,120 (see **Figure 14**). We also found that ESA inspectors on average did not show up for 13% of the inspections assigned to them. The ESA does not inform contractors and homeowners waiting for an inspector that their inspection has been cancelled. It is up to the contractor or homeowner to reschedule their inspection, for which they have already paid.

Figure 14: Average Number of Installations Assigned per Inspector, 2011–2020

Prepared by the Office of the Auditor General of Ontario



RECOMMENDATION 6

To help maintain public electrical safety by conducting thorough and consistent inspections of electrical installations, we recommend that the Electrical Safety Authority (ESA):

- change its inspection scheduling process to ensure that its inspectors are given the time needed to properly conduct all assigned inspections, and reduce the number of rescheduled inspections required that result from cancellations; and
- notify people if their scheduled inspections are cancelled.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will:

- develop scheduling tools to better align assigned workload with inspector resources; and
- develop and implement communication mechanisms to provide notice when inspections cannot be completed as scheduled.

4.2.4 ESA Has No Inspection Checklist

We found that while ESA inspectors follow an inspection checklist for general inspections, the ESA has not developed such a checklist for its regular and periodic inspections, which account for more than 90% of total inspections. This includes not having a checklist that stipulates how its regular and periodic inspections should be performed and how installations should be examined.

Our expert told us that if the ESA had inspection checklists and made them publicly available, contractors and homeowners would better understand the inspection process and what inspectors look for, which in turn would help them put in installations safely in the first place. Inspection checklists would have been especially helpful during the COVID-19 lockdown, during which ESA inspections were done remotely for the first time, by examining photos of installations taken by contractors and homeowners. By having a standardized checklist, inspectors could more consistently request photos of components of electrical installations to assess against the Ontario Electrical Safety Code. Having these checklists available for contractors would provide more guidance on what inspectors are looking for during their review of the installation.

Technical Safety BC inspectors use checklists to perform their electrical inspections. These checklists are built into the system inspectors use to document their inspection results. Technical Safety BC also publishes its checklists on its website.

RECOMMENDATION 7

To help maintain public electrical safety through thorough and consistent inspections of electrical installations, we recommend that the Electrical Safety Authority:

- develop inspection standards and checklists as soon as possible;
- make its inspection standards and checklists publicly available; and
- establish a monitoring process to ensure that the new inspection standards are being followed.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will:

- develop and publish inspection standards and checklists for the most common installations, based on volumes; and
- establish a monitoring process to ensure the new standards are being followed.

4.2.5 ESA Did Not Promptly Follow Up on About 3,500 Installations Found to Be Unsafe When Initially Inspected

Unsafe installations found during inspections must be fixed as soon as possible. Inspectors are required to follow up and check within 14 days that inspected installations that pose a serious risk of fire and/or electrocution have been fixed. The deadline is 35 days for installations that do not pose an immediate risk of fire and/or electrocution and 12 months for unsafe installations identified by periodic inspections. Inspection files remain open until inspectors close them after confirming that all unsafe installations have been fixed.

During our work, we became aware that ESA's computer system was not displaying all the inspections its inspectors were supposed to follow up on, and we informed the ESA. Specifically, on April 20, 2020, our review of all of the 11,722 open inspection files on unsafe installations found that 30% (3,449) had not been followed up on within the required time frame.

When we further analyzed the 3,449 files, we found that 80% (2,764) were periodic inspections, with 40% (1,105) having been open (unresolved) for more than two years and some open for as long as 10 years. When we showed the ESA that its computer was not properly calling up the open files for follow-up, it initiated steps to fix the system and began to clear the backlog of the open files.

We also learned that the ESA has two different policies for when inspectors are supposed to follow up on unsafe installations found during periodic inspections. One policy requires follow-up within one year and another policy does not specify any length of time, leaving it up to each inspector to decide.

RECOMMENDATION 8

To protect the public from fire, electrocution and other possible harm from unsafe installations, we recommend that the Electrical Safety Authority:

- establish one clear policy on when follow-up must be conducted, addressing both regular and periodic inspections;
- test its computer systems for correct functioning, and accurate processing and display of all inspection information; and
- monitor that inspectors are doing follow-up inspections within the set timelines and that unsafe installations are fixed within the required time.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will:

- establish clear policies when follow-up must be conducted for each of regular and periodic inspections;
- continue to test computer systems for correct functioning of inspection information; and
- continue to monitor the rate and pace of follow-up inspections against established target time frames.

4.2.6 ESA Is Not Monitoring Whether Large Industrial Companies Notify ESA of Their Installations

Large industrial facilities that are periodically inspected can switch back to regular inspections at their discretion. If they do, they are required to notify the ESA of every installation put in. We found that the ESA is not monitoring that companies that switch back to regular inspections are complying with this requirement. We identified 12 companies that had switched back to regular inspections whose periodic inspection history showed a trend of unsafe installations. We compared the number of installations that they logged before switching to the number they notified the ESA of after switching. All but one of the 12 companies reported a much lower number of installations than when they were periodically inspected. For example, one company that in the past logged an average of 21 installations a year had not notified the ESA of any installations between November 2018 (when it switched to regular inspections) and July 2020. **Figure 15** shows the number of installations reported to the ESA during the time when they were being periodically inspected and after they switched back to regular inspections.

Figure 15: Number of Installations 12 Large Companies Reported Annually to ESA When Under Periodic Inspection and Regular Inspections
Prepared by the Office of the Auditor General of Ontario

Facility	Before	After	Change (#)	Change (%)
A	190	28	(162)	(85)
B	59	26	(33)	(56)
C	32	0	(32)	(100)
D	33	6	(27)	(82)
E	28	2	(26)	(93)
F	21	0	(21)	(100)
G	21	1	(20)	(95)
H	18	4	(14)	(78)
I	14	2	(12)	(86)
J	8	0	(8)	(100)
K	11	6	(5)	(45)
L	118	613	495	419

Under Part VIII of the *Electricity Act, 1998*, the ESA can enter any facility that is not being used as a private dwelling at a reasonable time to inspect the electrical installations and to assess whether or not they have been notifying the ESA of them. We found that the ESA has never done this.

RECOMMENDATION 9

To enhance public electrical safety, we recommend that the Electrical Safety Authority (ESA) verify that industrial facilities that switch from periodic to regular inspections are notifying the ESA of all of their electrical installations.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will institute a more rigorous review of industrial facilities that switch from periodic to regular inspections for their electrical installations.

4.2.7 Gaps in ESA's Oversight of Electricity Distributors, Identified in 2018 by ESA's Consultant, Remain Unfixed

We found that a number of gaps remain unfixed in the ESA's oversight of electricity distributors more than two years after an ESA-hired consultant identified them.

The ESA is responsible for making sure that distributors comply with Regulation 22/04, Electrical Distribution Safety. To do so, the ESA periodically inspects each distributor, and obtains assurance and confirmation from each distributor that they have complied with the regulation. The ESA also obtains a declaration of compliance from each distributor confirming that:

- all serious electrical incidents were reported to the ESA within 48 hours;
- all unused power lines were disconnected;
- any changes in ownership were reported to the ESA;
- approval from a professional engineer was obtained when deviations were made from the regulation when installing new equipment or power lines; and
- safe distances between buildings and power lines were maintained.

In November 2017, the ESA paid an external consultant $26,000 to review its oversight of distributors for the period from 2012 to 2016. The consultant completed the review in June 2018 and provided the ESA with 76 specific suggestions on how to fix deficiencies found in the oversight process. Nine months later, in March 2019, the ESA paid $34,000 to another consultant to review and prioritize the 76 action items, which were rolled into 54 action items. In May 2020, we reviewed the ESA's progress in implementing the 54 action items and found that 22, or 41%, of them had not yet been implemented, including the following:

- The ESA does not require distributors to submit any evidence that non-compliances, including unsafe installations found by its inspections, were fixed.
- The ESA does not consistently collect information on serious electrical incidents that distributors must report to the ESA within 48 hours. Information such as a description of the incident, the nature of the incident, the possible cause of the incident, the incident date and time, and when the incident was reported to the ESA is not being collected and documented.
- The annual declaration of compliance received by the ESA was not always signed by the appropriate person with the required signing authority.

As we discussed in **Section 4.2.4**, the ESA also does not have inspection standards, and some of the inspections are poorly documented, a finding also noted by the consultant.

RECOMMENDATION 10

To enhance public electrical safety, we recommend that the Electrical Safety Authority (ESA) promptly act to implement all of the action items from the consultant reviews of the ESA's oversight of local distribution companies (distributors) that have not yet been implemented.

RESPONSE FROM THE ESA

The ESA agrees with this recommendation and has a corrective action plan in place that prioritizes the findings of the review. All high-priority items have already been addressed. The ESA will continue to address the remaining items not yet implemented.

4.3 Non-mandatory Inspections

4.3.1 ESA's Non-mandatory Inspections Are Prioritized Ahead of Its Regulatory Responsibilities

General inspections are visual inspections of electrical wiring in an entire home and are often requested by homeowners to satisfy the terms and conditions of their home insurance, of fire codes and of property sale agreements. General inspections can be performed by any licensed contractor, and the ESA is not required by its regulatory responsibilities to perform such inspections. We found that the ESA's scheduling favours general inspections over the regular inspections that the ESA is responsible for by law.

Both the regular and general inspections are conducted by the same ESA inspectors. The ESA provides a guaranteed time for general inspections. However, for regular inspections, a specific time frame is not offered to the homeowner or contractor, and the inspector may show up at any time between 8 a.m. and 4 p.m. on the scheduled date. We found that regular inspections in other Canadian jurisdictions, such as British Columbia, New Brunswick and Saskatchewan, are scheduled for a specific time; Manitoba offers a two- to four-hour window. As mentioned in **Section 4.2.3**, the ESA does not inform contractors and homeowners waiting for an inspection when their inspection is cancelled.

The ESA takes about 90 minutes to do general inspections, while regular inspections take only about 18 minutes. General inspections take longer because electrical wiring throughout an entire home is inspected, not just one installation. Thus, the ESA completes about five regular inspections for every one general inspection it performs. Despite taking 90 minutes to complete a general inspection, the ESA does not follow up to ensure that installations found to be unsafe are fixed. This is further discussed in **Section 4.3.2**.

General inspections are also offered by licensed contractors. We found that contractors generally charge less for general inspections than what is currently being charged by the ESA. Eight out of 10 contractors we called quoted less than the $399 general inspection fee the ESA currently charges. When the ESA competes with services that are also offered by contractors, there is a risk that the ESA is using its authority as a regulator to create an unfair business advantage. This is not in line with the requirements set out in ESA's administrative agreement with the Ministry which states that the ESA should not use its authority as a regulator to undertake work that creates an unfair business advantage.

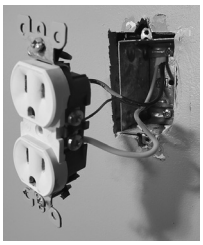
We also noted that general inspections have been conducted at a financial loss for the past three years.

4.3.2 ESA Does Not Confirm That Unsafe Installations Identified by General Inspections Are Ever Fixed, Even When the Installations Pose a Serious Risk of Fire and/or Electrocution

We found that inspectors are not required to follow up and check to see if unsafe installations found during general inspections–even those that are high risk–are ever fixed. Instead, all general inspection files are automatically closed and archived 60 days from the date of the inspection. Our analysis of all of the 3,580 archived inspection files from the 2018/19 fiscal year identified that just over 15% (556) of the inspection files had been found to be unsafe, including three that posed a serious risk of fire and/or electrocution. The ESA arranged for an inspector to check that these three installations were fixed after we brought the files to its attention.

Figure 16: Common Problems Found by ESA in General Inspections

Prepared by the Office of the Auditor General of Ontario

Risk	Image of the Safety Issue	Explanation
Electrocution		Fuse/circuit breakers are not labeled. • The correct breaker might not be found when an immediate power shutoff is required. • Incorrect fuse/circuit might be turned off to facilitate electrical repairs.
Electrocution and/or Fire		The two wires are not connected to the proper terminals on the outlet and should be switched with each other.
Electrocution and/or Fire		The cover plates and boxes are broken or missing.
Fire		There is a damaged electrical receptacle.
Electrocution		The gas piping is not properly connected to grounding wires to ensure that there are no differences in voltage between gas piping and the electrical system.

With the help of our expert, we reviewed the 556 inspection files and identified the most common problems that the ESA finds but does not follow up on in its general inspections. **Figure 16** summarizes our observations.

We also found that in 2018, the ESA asked its IT department to partially disable the automatic archiving feature so that files with high-risk installations would remain open until inspectors confirmed that they had been fixed. However, we discovered that the ESA's IT department forgot to make this change, and informed the ESA. The function was disabled as soon as we brought this up to the ESA.

RECOMMENDATION 11

To ensure regulatory inspections are not negatively impacted by general inspection services that are not required by law, we recommend that:

- the Ministry of Government and Consumer Services assess the appropriateness of the Electrical Safety Authority conducting general inspection services to the public and stop them immediately if it finds this is inappropriate; and
- the Electrical Safety Authority follow up on any instances of non-compliance with the Ontario Electrical Safety Code in a timely manner, if general inspection services continue to be offered to the public.

RESPONSE FROM THE ESA

The ESA accepts this recommendation. We will continue to follow up on any instances of non-compliance with the Ontario Electrical Safety Code that represent a risk of imminent fire or shock hazard in a timely manner when we offer general inspection services not required by law.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services accepts this recommendation and will work collaboratively with the ESA to assess its general inspections program to ensure it does not impact the ESA's regulatory inspection activities.

4.4 Illegal Electrical Installations

Only ESA-licensed electrical contractors can offer electrical services to the public; certified and master electricians cannot. It is also illegal for anyone to do any electrical installation without notifying the ESA. However, we found that advertisement of illegal electrical services is widespread, and it costs much less for the public to do electrical work when the ESA is not notified. Individuals performing work illegally avoid costs of licensing with the ESA and ESA inspection fees which allows them to offer more competitive prices.

4.4.1 Online Advertisement of Illegal Electrical Services Is Widespread

We found that there are a significant number of online ads for "for-hire electricians" who are not contractors licensed by the ESA. As part of its attempt to curb illegal electrical services, the ESA had a staff member search online for ads posted by "for-hire electricians" and verify that they are licensed contractors. This search began in September 2016; within six months, the ESA had issued 538 warning letters and investigated 15 repeat posters of advertisements. However, it stopped searching after this six-month period because the employee who was conducting the searches left the ESA.

On July 7, 2020, we searched a popular online advertising platform and found that in the Greater Toronto and Hamilton Area on that day alone, there were 53 ads posted in the "for-hire-electrician" category. During our audit, the ESA began searching for online ads again, and in March 2020, the ESA obtained a report from the online advertising platform indicating that in Ontario in 2019, on average there were 166 ads posted each day in the "for-hire-electricians" category. The report also stated that an additional 629 ads were posted per day under the category called "Renovations, General Contracting, and Handyman," which also offered electrical services. According to the report, a total of 300,000 such ads were posted on this platform in 2019 in these two categories.

Between July 7 and 14, 2020, we responded to 20 "for-hire-electrician" ads randomly selected from online platforms and requested a quote for wiring and installing six new pot lights, an exhaust fan and two new light switches in a bathroom. The quotes that we received ranged from a low of $150 to $1,100 and together averaged about $650. We found that none of the 20 "for-hire electricians" were contractors licensed by the ESA. All strongly discouraged us from notifying the ESA of the installations, reasoning that the job was too small.

Figure 17: Summary of Quotes Received from Contractors

Prepared by the Office of the Auditor General of Ontario

	ESA ($)		Non-ESA ($)	
	Price Range	Average Price	Price Range	Average Price
9 contractors[1]	650–1,500	980	500–1,350	780
11 contractors[2]	650–2,560	1,460	n/a	n/a

1. These 9 contractors gave us two different quotes depending on whether or not we choose to notify the ESA.
2. These 11 contractors were not willing to perform electrical work without involving the ESA.

4.4.2 Licensed Electrical Contractors Offer Electrical Installations for Less if ESA Is Not Notified

We found that some licensed contractors are also willing to contravene the law and perform electrical installations for a lower price if the ESA is not notified. For the same bathroom electrical work, we obtained an additional 20 price quotes from licensed contractors from across Ontario. Nine of the 20 licensed contractors gave us an ESA and a non-ESA quote, saying that it is up to us to decide if the ESA is notified or not. The average ESA quote was about $200 more than the average non-ESA quote. We also found that three of these nine licensed contractors were previously caught by the ESA for performing electrical work without notifying the ESA. The remaining 11 licensed contractors said that the ESA must always be notified and quoted us the highest average price. **Figure 17** presents a summary of all the quotes that we received.

4.4.3 Law Prohibiting Electricians from Offering Electrical Services to the Public Contributes to Widespread Illegal Installations

We found that the law that prohibits certified electricians and master electricians from offering their services to the public is one of the contributing factors to the widespread problem of illegal electrical installations.

As of December 2019, there were about 32,000 certified electricians and 14,500 master electricians in Ontario. Legislation prohibits them from offering and doing any electrical installations for the public–only licensed electrical contractors, of which there were 9,000 in Ontario as of December 2019, can legally offer such services (see **Figure 18**).

In order for a business or individual to be a licensed contractor, they must meet all of the following criteria:

- in the case of an individual, must be at least 18 years old;
- must be a master electrician or be a business that employs at least one master electrician who has been designated to carry out electrical work on the business's behalf;
- must have an address for service in Ontario;
- must have public liability and property damage insurance coverage of at least $2 million;
- must be registered with the Workplace Safety and Insurance Board (WSIB) if employing others to work on their behalf;
- must not be in default of filing a return to the Ontario Ministry of Finance or Canada Revenue Agency, or of any tax penalty/interest;
- must not owe the ESA any money for which payment arrangements have not been made; and
- pay an ESA licensing fee.

All of these conditions must be met for someone to legally perform even simple electrical installations for someone, such as installing new pot lights or a light switch.

Our expert informed us that to supplement their income from performing electrical work through a licensed electrical contractor, many certified electricians and master electricians do illegal installations

Figure 18: Parties Legally Allowed to Offer Electrical Installation Services to the Public
Prepared by the Office of the Auditor General of Ontario

	Licensed by ESA	Authorized to Offer Electrical Installations
Certified electrician	No	No
Master electrician	Yes	No
Licensed electrical contractor/company	Yes	Yes

directly, instead of through a licensed electrical contractor as required by law. In a 2020 ESA survey of homeowners, 51% indicated that they had obtained electrical services from an electrician who was actually prohibited by law from offering electrical services directly to the public.

RECOMMENDATION 12

To improve compliance with electrical safety laws and reduce the number of illegal electrical installations, we recommend that the Ministry of Government and Consumer Services together with the Electrical Safety Authority and industry stakeholders:

- reassess the current restrictions in Ontario where electrical work for the public can only be conducted by licensed electrical contractors to determine if other arrangements are possible for certified electricians and master electricians; and
- determine whether certified electricians or master electricians can be allowed to perform lower-risk installation work.

We also recommend the ESA in consultation with industry stakeholders review and establish reasonable licensing and inspection fees to address the illegal electrical installation market.

RESPONSE FROM THE ESA

The ESA agrees with this recommendation. As part of its review of the overall fee model, the ESA will review reasonable inspection fees.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services accepts this recommendation and will work collaboratively with its partners to assess and consider the types of electrical work that can be conducted by licensed electrical contractors, certified electricians and master electricians while maintaining public safety.

4.4.4 Home Insurers and Municipalities Do Not Require That ESA Inspect Electrical Installations

We found that there is little incentive for homeowners to ensure that electrical installation services obtained are inspected by the ESA because ESA inspections are not considered by insurance companies that offer home insurance and municipalities that issue permits for renovation work.

We contacted four major home insurers in Ontario to find out if they would deny claims for damage caused by faulty electrical work that was not inspected by the ESA. All four insurers informed us that they do not require that electrical installations be inspected by the ESA and that they would pay out the claims. Two of the insurers said that after paying out such a claim they might consider cancelling the policy if the installation was not done by a licensed contractor but not if it was not inspected by the ESA.

We also contacted five Municipal Chief Building Officials, who told us that during the building permit approval process for home renovation work, they do not check if those taking out building permits have

notified the ESA of their electrical installations, nor do they require proof of the ESA inspection when they do a municipal inspection of the completed renovation. ESA inspections are required for new home construction only when the electricity has to be turned on and connected to the distribution line for the first time. Distributors obtain authorization from the ESA to connect the power.

RECOMMENDATION 13

To reduce the occurrence of illegal electrical installations, we recommend that the Ministry of Government and Consumer Services together with the Electrical Safety Authority work with municipalities to determine whether the ESA inspections can be incorporated into the building permit assessment process.

RESPONSE FROM THE ESA

The ESA will work with the Ministry of Government and Consumer Services and the Ministry of Municipal Affairs and Housing and relevant stakeholders in order to determine whether the ESA inspections can be incorporated into the building permit process.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services accepts this recommendation and will work collaboratively with its partners to assess and consider how to address this area, including whether the ESA's inspection processes can be incorporated into other related activities such as the building permit process.

4.4.5 Homeowners Not Aware That There Are Some Risks When Electrical Installations Are Not Done by Licensed Electrical Contractors

Since 2015, the ESA has spent $2.3 million on public awareness campaigns specifically targeting the risks of not hiring a licensed electrical contractor. However, surveys conducted by the ESA over the last five years (2015–2020) found that, on average, almost half (46%) of homeowners surveyed each year did not know that it is illegal for certified electricians to offer installation services and that only licensed contractors should be hired to do that work. Another 6% did not answer either way. In addition, a majority (80%) of the homeowners had not seen, heard or read anything advertised or publicized about electrical safety or the Electrical Safety Authority. Another 10% did not answer either way.

According to the Ministry of Labour, Training and Skills Development, if a homeowner directly hires someone who is not a licensed electrical contractor to do electrical installations in their home, the homeowner can become responsible for that person and therefore liable for any injuries or damage that could occur during the installation. Furthermore, if the hired individual does not have WSIB insurance, the homeowner may be sued by the injured person doing the work for additional costs. We found that the ESA has not undertaken any public awareness campaigns to inform the public of this specific risk.

RECOMMENDATION 14

To enhance public awareness about the risks associated with hiring unlicensed electrical contractors, we recommend that the Electrical Safety Authority:

- re-evaluate its approach to public awareness campaigns to better inform the public on the risks of hiring an unlicensed contractor; and
- educate the public on the differences between a certified electrician, master electrician, and a licensed electrical contractor.

RESPONSE FROM THE ESA

The ESA accepts this recommendation and is committed to increasing public awareness of the risks of hiring an unlicensed contractor. The ESA will look for further opportunities to educate the public and address the differences between licensed electrical contractors, master electricians and certified electricians.

4.4.6 ESA's Process to Stop and Prevent Illegal Installations Is Ineffective

The ESA is responsible for investigating and prosecuting those who perform illegal installations. Individuals who are caught for the first time are usually issued warning letters. The ESA can also suspend the licence of a contractor or master electrician caught doing illegal installations and/or prosecute them in Provincial Court. The ESA obtains services from 14 investigators who it designates as provincial offence officers; they have the power to issue search warrants and compel evidence to prosecute people who perform illegal installations. These services are used on a case-by-case basis if the ESA initiates a case before the Provincial Court. However, the ESA does not have the power to directly issue monetary fines to anyone. In comparison, Technical Safety BC does have the authority to directly penalize individuals who perform illegal electrical installations, and it publicly reports on this activity. Having this power would allow the ESA to more efficiently target those that perform illegal installations by issuing fines directly rather than going through lengthy court proceedings.

In addition to the 14 contracted investigators, the ESA primarily relies on its inspectors to identify illegal electrical installations. However, we noted that just over 80%, or 168, of 205 inspectors whom we surveyed indicated that they do not have the time during their workday to look out for offenders. Furthermore, almost half (45%, or 93) of 205 surveyed inspectors said that the ESA's current process to stop and prevent illegal installations is ineffective.

4.4.7 ESA's Pilot Program Using Building Permit Information Not a Strong Deterrent against Illegal Electrical Installations

In an attempt to identify illegal electrical installations, the ESA began a pilot project in October 2017 to check if individuals who take out municipal building permits notify the ESA of their electrical installations. The program had the ESA reconcile building permits with notifications received; if the ESA was not notified, an inspector visited the site, confirmed whether or not an illegal installation had been performed, and issued a warning letter, if necessary. The ESA told us the ideal outcome would have been for an inspector to actually see the illegal installation being put in when they visited the site (in essence, "catching them in the act").

We noted that since October 2017, the ESA had issued warning letters to 38% (717 out of 1,909) of cases where it found it had not been notified. No warning letter was issued in cases where the ESA was denied entry to the site, did not receive co-operation or could not contact the individual. Notwithstanding that warning letters were issued, we noted the following weaknesses in this pilot program:

- The municipal building permit information the ESA uses to reconcile with notifications is not current. It can be as much as two years old, and in many cases applies to sites where the electrical work has already been completed. In those cases, the ESA would not be able to catch the offender in the act.
- Site visits did not take place right away when the reconciliation identified a lead. For example, after reviewing a sample of 20 closed investigation files, we found that in 75% (15) of the cases, inspectors took more than 10 days to visit the site, and for 25% (5) of the cases, the visit took place after 40 days.

In addition, we found that the warning letter is not a strong enough deterrent to stop individuals from continuing to perform illegal installations: three of the 10 individuals we called who had previously received a warning letter from the ESA offered to perform electrical installations for us without notifying the ESA.

RECOMMENDATION 15

To significantly reduce widespread illegal electrical installations, we recommend that:

- the Ministry of Government and Consumer Services enable the Electrical Safety Authority (ESA) to directly issue monetary fines; and

- the ESA dedicate sufficient resources to review and follow up on all reported cases of illegal electrical installations.

RESPONSE FROM THE ESA

The ESA accepts this recommendation and will review its processes to ensure that there is a robust mechanism for reviewing and following up on illegal electrical installations.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services accepts this recommendation and will consider potential amendments to its legislative and regulatory frameworks to enable the ESA to issue monetary fines in support of a robust compliance regime.

4.5 Licensing Electrical Contractors and Master Electricians

4.5.1 ESA's Exam Process for Master Electrician Not Rigorous Enough

Master electricians are responsible for ensuring that installations by certified electricians under a licensed electrical contractor are done correctly and safely. To become a master electrician, a certified electrician must pass the Master Electrician exam that is offered by the ESA. The Master Electrician exam comprises 80 multiple-choice questions and is held about 90 times a year. To pass, at least 60% of the questions from each of the exam's three sections (Ontario Electrical Safety Code, Workplace Safety, and Business Administration) must be answered correctly and overall at least 70% of all the answers must be correct.

We found that the ESA does not have a sufficient number of questions in its question banks to produce enough unique exam offerings. There are three question banks, one for each section of the exam, each with about 65 to 75 questions. The ESA creates the exam by randomly pulling 26 to 27 questions from each of the three question banks. When we compared four exams, two offered in 2015 and two offered in 2018, we found that on average, 40% (32 out of 80) of the questions from the 2015 exams also appeared in the 2018 exams, and that 15% (12 out of 80) of the questions had not changed since 2009.

We also found that the ESA does not set a limit on the number of times someone can attempt the exam and does not keep track of repeat writers (writers who attempt the exam multiple times). Using the ESA's data, we did our own analysis to determine the number of repeat writers. We found that since 2016, there have been over 250 repeat writers who have on average attempted the exam two to three times. Three attempted it five times before finally passing, and 16 attempted four times before passing.

Given the frequency of exam offerings, the prevalence of repeat questions and the significant number of repeat writers, we question the overall rigour and integrity of the Master Electrician exam.

RECOMMENDATION 16

To strengthen its Master Electrician licensing process, we recommend that the Electrical Safety Authority more frequently update the Master Electrician exam with new questions.

RESPONSE FROM THE ESA

The ESA agrees with this recommendation. The ESA has initiated a plan, in conjunction with stakeholders, to review the Master Electrician exam format and the exam questions.

4.5.2 Continuing Education Is Not a Licensing Requirement for Certified Electricians and Master Electricians

We found that continuing education is not a licensing requirement for certified electricians and master electricians in Ontario. Electricians in Alberta

have had to meet continuing education requirements since 2008 to get their licence renewed, and British Columbia plans to introduce the same continuing education requirement in 2021.

The ESA updates the Ontario Electrical Safety Code (Ontario Code), which provides guidance on installing safely, every three years. The last Ontario Code update, in May 2019, included these major changes:

- Power outlets with internal shutters preventing children from electrocution from inserting objects into the outlet must now be installed in all new child-care facilities, elementary schools, and guest rooms in hotels and motels.
- Additional power outlets can now be installed in kitchens to reduce the use of extension cords, which over prolonged use can deteriorate and trigger fires and/or electrocution.
- An emergency power shut-off must now be installed near pools that are open to the public.
- Safety rules for the installation of Electric Vehicle in-home chargers have been enhanced.

We found that the ESA does not require that master electricians complete any mandatory training to stay on top of its changes to the Ontario Code. In our 2003 audit of the Ministry of Government and Consumer Services' oversight of delegated authorities, we highlighted the same problem of mandatory continuing training not being required. In 2017, the ESA asked the Ministry to make continuing education for electricians mandatory, but the Ministry could not move forward because the ESA had not provided any evidence, analysis or stakeholder consultation to support its request.

We also found that the Ontario College of Trades, the authority that oversees certified electricians, does not have any continuing education requirements.

During our audit, we spoke to a number of contractors. Some of them told us they offered training for their electricians that included the updates to the Ontario Code. However, we found that this training is not accredited by the ESA and can vary from contractor to contractor, and some smaller contractors may not offer any training at all. For a fee, the ESA also offers electrical safety training programs, including courses on Ontario Code updates.

RECOMMENDATION 17

To enhance public electrical safety, we recommend that the Electrical Safety Authority work together with the Ministry Government and Consumer Services to:

- implement a continuing-education requirement as a condition of master electrician licensing; and
- work with the body that oversees the certification of electricians to discuss implementing a requirement for continuing education

RESPONSE FROM THE ESA

The ESA is developing a voluntary continuing education program for master electricians. The ESA will work with the Ministry of Government and Consumer Services and the Ministry of Labour, Training and Skills Development to review the potential implementation of a mandatory continuing education requirement for master electricians.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services accepts this recommendation and will work collaboratively with the ESA and its partners to consider continuing education requirements for master electricians and licensed electricians in the province.

4.6 Electrical Product Safety

Health Canada, the Ministry of Labour, Training, and Skills Development, and the ESA's own inspectors report uncertified electrical products to the ESA. The ESA is supposed to investigate them and either prevent them from being sold or require the manufacturer or the seller to arrange for the product to be certified. However, we found that the ESA's process to stop the sale of uncertified electrical products is not effective. Given the volume and movement of products across borders, we also found that it is difficult for a provincial authority like the ESA to effectively enforce product safety laws in Ontario.

4.6.1 Unsafe Electrical Products Are Widely Available for Sale Online

We found that uncertified electrical products are widely available for sale online. Through the Internet, Ontarians can purchase electrical products directly from manufacturers located anywhere around the world. The products can be shipped directly from overseas to the buyer's address. However, many of these products may not necessarily have undergone electrical safety tests that are required in Ontario. The ESA does not have an active surveillance program in place to monitor the buying and selling of uncertified products through online platforms because it is not possible and practical to monitor the large number of electrical products shipped each day to Ontario from different parts of the world. In July 2020, we purchased 13 electrical products from a large online retailer and asked our expert to verify that they were certified. **Appendix 6** includes photos of the products we purchased, which included a light fixture, a portable heater, a heated blanket, light switches, phone chargers, a toaster, a portable electric burner, a light bulb and plug-in lamps.

By cross-checking each product's unique identification number with the certification agency's product database, our expert found that six (46%) of the 13 electrical products were not certified by an accredited certification agency. These six products, including a portable heater, light fixture, heated blanket, touch-control LED lamp and two phone chargers, had no evidence of being safety tested for public use. With the help of the ESA we engaged a third-party agency to test the six electrical products to assess if they are safe. The agency found that five of the six products, including the portable heater, light fixture, touch-control LED lamp and two phone chargers were unsafe for home use. For example, three of the products failed flammability tests, which means that the materials used in the products pose a high risk of fire if the product malfunctions. Another product failed a double insulation test, which means the product does not have enough insulation to prevent an electric shock if the product malfunctions.

The ESA told us that it is limited in the activities it can undertake as part of the Regulation 438/07, Product Safety due to resource constraints and as a result, since ESA's inception, their approach to product safety has been largely reactive, focusing only on reports received of uncertified electrical products. In the next section, we explain how the ESA's response to these reports is ineffective.

RECOMMENDATION 18

In light of the wide availability of uncertified electrical products online, the Ministry of Government and Consumer Services, together with the Electrical Safety Authority and industry stakeholders, should review the current electrical product safety regulation and accordingly, adapt it to the current online market environment.

RESPONSE FROM THE ESA

The ESA agrees and will work with the Ministry of Government and Consumer Services, federal partners and stakeholders in this regard.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services (Ministry) will work with the ESA and federal partners and stakeholders in this regard. The Ministry acknowledges the prevalence of electrical products available online, particularly in recent years. The Ministry accepts this recommendation and will work collaboratively with federal partners to consider potential legislative and regulatory amendments to better reflect today's digital marketplace and consumer behaviour, which would require approval of the government.

4.6.2 Investigations of Uncertified Electrical Products Not Effective

When the ESA receives a report of an uncertified product, they must ensure that the product obtains certification from an accredited certification agency, or ensure that the manufacturer or seller of the product stops distributing and selling the product. We reviewed a sample of 45 reports of uncertified electrical products received from ESA inspectors and the public in the last five years to determine what action the ESA took in response. We found the following:

- For 10 (22%) of the reports, the ESA closed the file and took no action because it was unable to contact the seller or manufacturer.
- For 14 (31%) of the reports, the ESA closed the file after the seller said they had stopped selling the product. We found that the ESA made no efforts to verify through an inspection that this was actually the case.
- For 11 (24%) of the reports, the seller or manufacturer sent a confirmation to the ESA, including in some cases a photo of the certification label, to confirm that the product was certified. We found that the ESA did not check the authenticity of the label directly with the certification agency, which it has the authority to do under Regulation 438/07, Product Safety.
- For the remaining 10 (22%) of the reports, the ESA took the appropriate action of investigating and obtaining a report issued by a certification agency to confirm that the product underwent an authentic certification.

RECOMMENDATION 19

To enhance electrical safety, we recommend that the Electrical Safety Authority:

- conduct a review, and develop and implement a plan to target the sale and use of unsafe electrical products in Ontario; and
- dedicate sufficient resources to review and follow up on all reported cases of unsafe electrical products being sold in Ontario.

RESPONSE FROM THE ESA

The ESA is in the process of conducting a review of its product safety program and, in consultation with federal and provincial regulators and stakeholders, developing a renewed Product Safety Strategy. As part of the renewed Strategy, the ESA will review its resources and update its processes to ensure that there is a robust mechanism for reviewing and following up on reported cases.

4.7 Public Access to Electrical Safety Information

4.7.1 ESA Does Not Provide Easily Accessible Information About Electrical Safety to the Public

The ESA receives frequent calls with technical questions on how to interpret the Ontario Code to perform electrical installations safely. About 80% of the ESA staff who handle calls responded in our survey that they are asked technical questions multiple times a week, and 35% said that they receive such questions daily. However, we noted

Figure 19: Information Disclosed by Technical Safety BC That Is Not Disclosed by ESA

Prepared by the Office of the Auditor General of Ontario

Published Information (for Public Use)	
1.	Address of site/home where electrical work is taking place
2.	Electrical contractors not notifying it of electrical work
3.	Electrical contractors failing to request an inspection
4.	Licensed electrical contractors with outstanding defects
5.	Electrical contractors failing to provide records required for licensing
6.	Names of businesses found operating without a valid licence
7.	Electrical contractors using unqualified workers
8.	Electrical contractors using uncertified products in electrical installations

Figure 20: ESA and Technical Safety BC Comparison

Prepared by the Office of the Auditor General of Ontario

Comparator	ESA	Technical Safety BC	Section Reference
Prioritizes high-risk installations through a risk-based approach*	No	✓	4.1.1
Conducts remote inspections (through photos and videos)	No	✓	4.1.3
Uses checklists when conducting inspections	No	✓	4.2.4
Schedules inspections with the contractor/homeowner for a specific time	No	✓	4.3.1
Ability to issue administrative monetary penalties	No	✓	4.4.6
Mandatory continuing education requirements	No	✓	4.5.2
Publicly discloses essential information useful to the public on its website (such as performance history of contractors, inspection checklists)	No	✓	4.7.1

* The ESA implemented a risk-based approach in July 2020 at the time of our audit.

that these employees are not trained to answer technical questions. Instead, they forward the calls to inspectors, but only if the caller has already paid for an ESA inspection; otherwise, the questions are not answered and the ESA will direct callers to the information that is available on its website. Many of the forwarded calls are also not answered; about half (50%) of the inspectors we surveyed told us that they do not have time to respond to the forwarded calls.

People also call to find out if their electrical contractor is in good standing or has done any unsafe installations in the past. When we listened to a sample of 20 live calls, we found that even when asked directly, ESA staff would not let callers know that their contractor's licence had temporarily been suspended and/or that the contractor had completed unsafe installations in the past. The ESA also does not disclose this information on its online contractor directory. We noted, in contrast, that Technical Safety BC publishes the past performance history of contractors on its website. **Figure 19** shows the information on licensed electrical contractors that Technical Safety BC discloses. **Figure 20** provides a summarized comparison of the ESA's operations to Technical Safety BC.

RECOMMENDATION 20

To be more responsive to the public in providing timely information on electrical safety, we recommend that the Electrical Safety Authority:

- train staff to respond accurately and completely to all calls with technical questions and assign a sufficient number of employees to this responsibility;
- review its policy to increase disclosure of information to callers about licensed electrical contractors' past performance and licence status; and
- review the disclosure provided with respect to licensed entities by Technical Safety BC, and work with stakeholders to identify categories of additional information to be publicly disclosed on licensed electrical contractors.

RESPONSE FROM THE ESA

- The ESA will conduct a review of the methods by which it shares technical information with the public and manages technical questions to ensure that these methods are effective, and will train staff accordingly.
- The ESA will also review the categories of information about licensed electrical contractors that are disclosed to the public.

4.7.2 ESA Does Not Disclose the Results of Its Investigations of Electrical Safety Incidents and Its Operational Information

The Ontario Electrical Safety Code requires that all serious electricity-related safety incidents be reported to the ESA within 48 hours of occurrence. In the last 10 years, three sources–the Ministry of Labour, Training and Skills Development; the Office of the Fire Marshal; and the public at large–reported a total of 895 incidents to the ESA by. Each year, the ESA consolidates this information and publishes it in its Ontario Electrical Safety Report (Safety Report). The ESA also reviews the incidents to determine their cause (for example, improper procedures were followed, the installations were faulty, or equipment was not properly used).

We found that, although the ESA determined the cause of 75% (672) of the 895 incidents, it has not included this information in its Safety Report. The ESA also does not report when it could not determine a cause (the remaining 25% [223] incidents). We also found that the ESA also does not include in its Safety Report any of its own inspection results, such as the most frequent Code violations. In contrast, the TSSA publishes in its safety report the top three compliance issues found in each of its regulated sectors. Furthermore, the ESA also does not publish the pass rate of its inspections of electrical installations and the number of completed inspections by type.

4.7.3 ESA Underreports Product Safety Information

We further found that the ESA's Safety Report did not include complete information on uncertified electrical products found during inspections. ESA inspectors report these products to the ESA's product safety department. The 2018 Safety Report shows that ESA inspectors identified 418 uncertified electrical products, but the actual number in the ESA's system was 524, identifying a reporting error. The Safety Report also shows that between 2009 and 2018, the number of uncertified electrical products reported by inspectors declined by 38%; however, when looking at the most recent five years between 2013 and 2018 the number actually increased by 66%, from 316 to 524. We further found that the number of injuries and fatalities caused by unsafe electrical products is not separated out from injuries and fatalities caused by other electricity-related accidents; it would be useful for the reader to know how many people are harmed or die each year specifically because of unsafe products.

RECOMMENDATION 21

To provide Ontarians with complete and transparent information about the state of electrical safety in Ontario, we recommend that the

Electrical Safety Authority annually report the results of its investigations of electrical safety incidents, its operational information and complete product safety information after it has been reviewed for accuracy.

RESPONSE FROM THE ESA

The ESA supports this recommendation. The ESA will continue to look at ways to provide objective and accessible information about its operations and the state of electrical safety in Ontario as part of its Annual Report and Ontario Electrical Safety Report.

4.8 Board Governance

The ESA Board does not have a member representing consumers' interests. We also found that the ESA has no records, such as interview questions and scores, to support how the Board's nomination committee assessed and selected the current Board members.

4.8.1 ESA's Board Does Not Include a Consumer Representative

The ESA's Board consists of 12 members. **Appendix 7** lists the current Board members and their association. The *Safety and Consumer Statutes Administration Act, 1996* allows the Minister to appoint up to five Board members (without forming a majority); however, when the ESA was created in 1999, the Minister agreed to appoint up to three only. The remaining eight Board members are elected according to the ESA's Board bylaws. The bylaws specify how many members must come from specific industries but are silent on having anyone represent the interests of consumers. The bylaws also allow the ESA's CEO to be a Board member with full voting rights. We did find, however, by reviewing Board motions, that the current CEO, who began serving in June 2009, has never exercised his voting right. Doing so could create a potential conflict of interest given that the Board is responsible for overseeing the CEO and approving the CEO's compensation.

RECOMMENDATION 22

To support the Electrical Safety Authority (ESA) in representing the interests of consumers, we recommend that the ESA replace the CEO Board position with a member position representing the interests of consumers.

RESPONSE FROM THE ESA

The ESA will work with the Ministry of Government and Consumer Services to implement the governance changes necessary.

4.8.2 ESA's Board Does Not Follow Its Own Member Appointment Process

The Board's nomination committee finds and screens potential new Board members. Potential candidates are supposed to be interviewed by the committee and appointed based on their qualifications and how well they score during an interview. However, the ESA was not able to provide us with interview notes or completed score sheets to support the appointment of all of the current Board members. When we reviewed Board members' applications, we found that one board member indicated that they are known to many ESA staff including the CEO. We found that given that the Board is tasked with overseeing the CEO's performance, current Board members should be independent, and without any pre-existing familiarity with the CEO. We also noted that Board members' attendance at meetings and compensation are not publicly disclosed. In comparison, Technical Safety BC does publicly disclose this information in its annual report.

RECOMMENDATION 23

To demonstrate a transparent Board appointment process, we recommend that the Electrical Safety Authority (ESA):

- establish a documentation and record-keeping process for the appointment of new Board members;
- establish a process to ensure Board members are independent from the ESA's management; and
- publicly disclose the salaries of all its Board members.

RESPONSE FROM THE ESA

The ESA agrees with this recommendation. The ESA will review its Board appointment processes to confirm that measures are in place to ensure independence as well as retention of appointment documentation. A Board member Training and Development Plan is already in place, which includes education on the importance of Board independence from management. The ESA will comply with the Ministry of Government and Consumer Services' direction regarding disclosure of Board member salaries.

4.9 Ministry Oversight

4.9.1 Ministry Did Not Obtain Sufficient Evidence from ESA to Assess Whether ESA's Non-mandatory Services Are Interfering with Its Responsibilities under the Acts

The ESA conducts three activities beyond those it is mandated to perform under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996* (Acts) in order to collect additional fees: general inspections, electrical safety training and the certification of electrical products. The administrative agreement with the Ministry allows the ESA to conduct this additional work as long as it promotes electrical safety and the additional work does not interfere with the ESA fulfilling its responsibilities under the Acts. This additional work provided the ESA with about $20.5 million in revenue in 2019/20, which represents about 18% of its total revenue for the year.

The ESA's administrative agreement with the Ministry that was signed in 2013 requires the ESA to hire an external consultant to periodically verify that this additional work is not interfering with the ESA's mandated responsibilities and make the consultant's findings public. We found that although the ESA has been performing this additional work since its inception in 1999, the first review did not take place until October 2019. The consultant concluded that the additional work was not interfering with the ESA's mandated responsibilities. However, our review of the report found that the ESA did not properly set the scope of work with the consultant, which resulted in some important information not being assessed. For example:

- The ESA's inspection scheduling was not reviewed to determine how much inspector time was taken up by general inspections and the impact that this had on inspectors' mandated responsibilities such as regular inspections and investigations of illegal installations.
- No work was done to assess if the ESA's expenditures were being appropriately allocated between its regulated and non-mandatory services to ensure that fees earned from its mandated responsibilities were not being used to cover operating costs of its additional work.

The administrative agreement also requires that the ESA not use its authority to create an unfair business advantage. As discussed in **Section 4.3.1**, we found that there is a risk that the ESA has created an unfair business advantage by offering an inspection service that can be done by any licensed electrical contractor, and has prioritized the scheduling of general inspections over regular inspections. We also noted that general inspections have been conducted at a financial loss for the past three years.

RECOMMENDATION 24

To ensure that Electrical Safety Authority (ESA)'s non-mandatory services are not interfering with its responsibilities under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996*, we recommend that the ESA work with the Ministry of Government and Consumer Services to more precisely define and agree on the scope and level of review work that is required to be performed when engaging a third-party consultant.

RESPONSE FROM THE ESA

The ESA will work with the Ministry of Government and Consumer Services toward more precisely defining the scope of future third-party consultant engagements.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services (Ministry) will work collaboratively with the ESA when engaging a third-party consultant to ensure the appropriate scope and level of review is established to guide the Ministry's assessment that the ESA's non-regulatory activities are not interfering with the ESA's mandated responsibilities.

4.9.2 The Ministry Has No Performance Targets Set to Assess ESA's Operational Performance

The administrative agreement requires that the Ministry work with the ESA to establish performance targets to hold the ESA accountable in fulfilling its mandate. However, we found that the Ministry has not set any meaningful measures and targets to assess ESA's performance

In 2015, the ESA set a target to achieve, by 2020, a 20% decrease in the combined rate of electrical fatalities and critical injuries compared to that in 2015. In 2020, the ESA reported to the Ministry that it had achieved an 18.4% decrease. We found that the Ministry primarily reviews the electrical fatalities and critical injuries reported in Ontario to assess the ESA's performance. However, the Ministry has not used meaningful operational performance metrics to ensure that the ESA is operating effectively and in a cost-efficient way to carry out its responsibilities under the Acts. The Ministry's review is limited to the number of calls the ESA receives and the number of inspections it conducts each year to measure the ESA's operational performance. However, these numbers alone cannot be used to assess how well the ESA is managing its operations. A performance measure must be specific to a desired outcome and include time-limited targets for improvement. Outcome measures of this kind have not been developed.

As we discuss throughout the report, the ESA has been operating inefficiently. For example, as discussed in **Section 4.1.1**, the ESA did not have a comprehensive risk-based inspection approach for most of its existence that would have allowed the ESA to streamline its operations and focus its costly inspector resources more on inspecting complex installations and less on simple installations.

RECOMMENDATION 25

To confirm that the Electrical Safety Authority (ESA) is meeting its mandate to improve public electrical safety in a cost-effective way, we recommend that the Ministry of Government and Consumer Services:

- establish outcome measures and performance targets for the ESA that focus on cost efficiency and safety improvement in the electricity sector;
- on a regular basis, assess the ESA's performance against these targets; and
- take corrective actions when the ESA does not achieve the targets.

RESPONSE FROM MINISTRY

The Ministry of Government and Consumer Services (Ministry) recognizes that effective oversight measures and targets are important to help assess whether the ESA is meeting its mandate under Part VIII of the *Electricity Act, 1998* and the *Safety and Consumer Statutes Administration Act, 1996* and that there is an opportunity to improve. The Ministry accepts this recommendation and will work collaboratively with the ESA to review the Administrative Agreement with the goal of specifically responding to the findings by:

- establishing outcome measures and performance targets for the ESA that focus on cost efficiency and safety improvement in the sector;
- assessing the ESA's performance against these targets on a regular basis; and
- taking corrective actions as appropriate when these targets are not achieved by the ESA.

Appendix 1: Timeline of Electrical Inspection in Ontario

Prepared by the Office of the Auditor General of Ontario

Time Period	Key Events
1914	• Ontario Hydro is given the authority to appoint electrical inspectors in all municipalities, make regulations and prescribe fees under the *Power Commission Act*. • Ontario Hydro is given the authority to cut off power to those in violation of regulations, inspectors are able to enter into any premises for inspection and penalties are introduced.
1918	• An Approval Laboratory Department is created within Ontario Hydro to test electrical equipment. • Rules and regulations are introduced for testing and approving electrical materials, devices and fittings. Products that meet the guidelines are declared as "Hydro Approved."
1924	• The Approval Laboratory Department is given the authority to prohibit the sale of electrical equipment considered to be unsafe for public use. • Ontario Hydro begins testing electric products for all of Canada. Other provinces request use of the "Hydro Approved" designation. This leads to the need for a national testing body.
1927	• Regulations are kept updated with developments in the industry through amendments put forward by a committee that comprise manufacturers, contractors, the Toronto Hydro-Electric System and the Hydro Electric Power Commission. • Due to a growing lack of uniformity among provinces over regulations and their interpretations, a National Code Committee is established under the Canadian Standards Association. • The work of this Committee results in the first Canadian Electrical Code. This Code is adopted in Ontario and continues to stand as the basis for formal electrical wiring regulation in Ontario.
1940	• The Canadian Standards Association Testing Laboratories are created. Ontario Hydro retains the position of the ultimate safety authority in Ontario responsible for conducting inspections of electrical equipment.
1947	• Ontario Hydro begins to decentralize its administration by creating regional offices. Inspection groups are established throughout Ontario with the primary responsibility to conduct inspections, supervise and police the sale of electrical equipment, and gather information for advancing prosecutions of Code violations.
1980s	• Ontario Hydro is faced with a new challenge to downsize and increase financial performance. This leads to the creation of the Electrical Inspection Division, an arm's-length, as well as a financially self-sustaining, line of business within Ontario Hydro.

1990s	• The Electrical Inspection Division undertakes a review to determine how well it is meeting the needs of its end users after stakeholders and customers raise a number of concerns, including:
	  ◦ inconsistencies in decisions among the various local inspection units;
	  ◦ no incentives offered for quality performance, such as reduced number of inspections or lower costs;
	  ◦ permit and inspection processes not being user friendly;
	  ◦ many people doing their own electrical work without an awareness of potential hazards;
	  ◦ inspection system is subsidized by the cost of power (contrary to the principle that those who benefit from the service should bear its costs); and
	  ◦ existing legislation does not contain provisions for appeals and licensing or accreditation of inspectors and trades personnel.

Time Period	Key Events
1993	• The Electrical Inspection Division is officially established as an independent business within Ontario Hydro under a new mandate: *to establish an efficient, comprehensive safety system that would provide a customer-focused service for compliance monitoring and value-added benefits to the electrical industry*. Subsidization from Ontario Hydro is stopped, and the costs for operating the new business are derived from fees charged to end users of the services offered. • The Division is divided into five territories with approximately 25 regional work centres and a total staff of 260. In its first year of operations, electrical inspection costs are $27 million, about $4 million higher than its revenues. • In its commitment to provide quality service to customers, more focus is put on responding to feedback and meeting customers' needs for services in a cost-effective manner. Also, to ensure continued financial viability, focus is put on adding new products and services. • In the first few months of operations, services are expanded to include: ◦ **Electrical Equipment Approval**—for all major industries and manufacturers. ◦ **Safety Code Consulting**—used by engineers, consultants and electricians to obtain interpretations of the Electrical Safety Code. ◦ **Educational Programs**—to upgrade the skills of utility, consulting and trades personnel in their application of the Code or Code changes. ◦ **Hazard Investigations**—used to assist the Ministry of Labour in electrical fatality investigations or electrical shock complaints from the public. ◦ **Fire Investigations**—used to assist the Fire Marshall and fire departments in ruling on cases of fires that may be electricity related. ◦ **Marketplace Surveillance**—to ensure electrical equipment offered for sale is safe. ◦ **General Inspection**—to provide a complete audit of the electrical system in a residence or commercial building to identify electrical hazards. ◦ **System Plan Reviews**—to review consultants' plans before work starts on wiring installations for public buildings, factories and other structures. ◦ **Annual Inspections**—to provide an audit of electrical installations at public institutions and factories.
1995/1996	• Ontario Hydro comes under review, largely driven by a movement to create a competitive electricity system in Ontario. In a review by the Macdonald Commission, four key objectives for electrical inspection are identified to ensure both public safety and effective provision of service: ◦ high-quality, cost-efficient inspection services; ◦ consistent enforcement of the Ontario Electrical Safety Code; ◦ a straightforward/responsive process that maximizes inspection opportunities and includes an effective dispute resolution mechanism; and ◦ provisions to ensure that the costs of inspection services are borne by users, without government subsidization.
1998	• A working group on Electrical Inspection and Safety in Ontario is established. Its report recommends that a new governance structure be established. The report puts forward key recommendations that lead to the creation of the Electrical Safety Authority, including: ◦ separate the electrical inspection function from Ontario Hydro to prevent a real and/or perceived conflict of interest; ◦ establish a not-for-profit corporation under the *Corporations Act*; ◦ report directly to a Board of Directors; ◦ develop the Ontario Electrical Safety Code with input from experts and stakeholders for final approval by the Lieutenant Governor in Council; and ◦ maintain the current mode of electrical inspection operations with a seamless transition from Ontario Hydro to a new corporation to maintain high customer satisfaction levels.
1999	On April 1, 1999, the Electrical Safety Authority (ESA) is established as a not-for-profit delegated authority accountable for public electrical safety in Ontario.
2004	ESA is assigned responsibility for safety oversight of electrical distribution companies through Regulation 22/04, Electrical Distribution Safety.
2005	ESA is assigned oversight of licensing electrical contractors and master electricians.
2007	ESA is assigned responsibility for product safety of electrical products through Regulation 438/07, Product Safety.
2020	ESA implements a risk-based inspection approach.

Appendix 2: Schedule of Fees as of December 2019

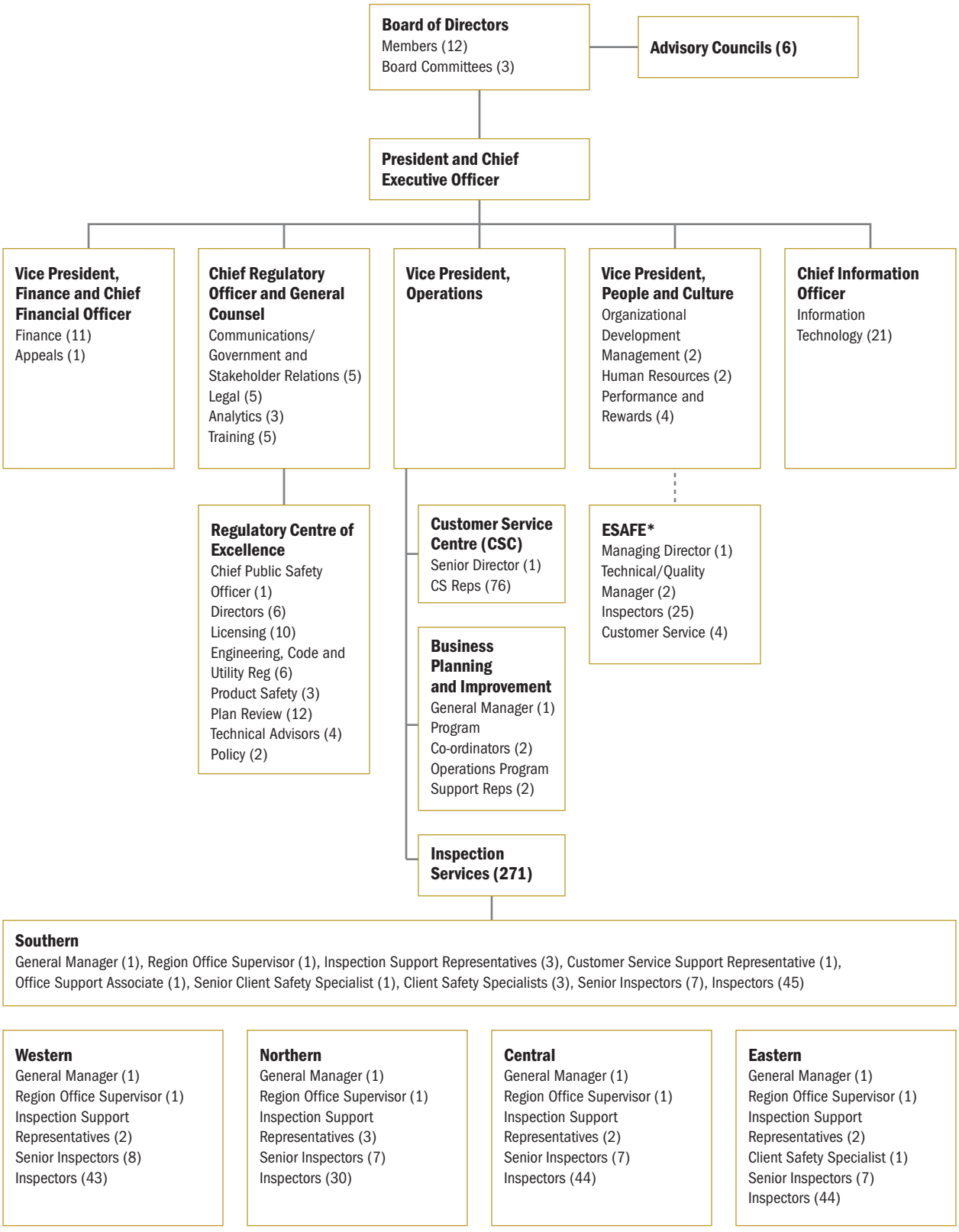
Prepared by the Office of the Auditor General of Ontario

ESA Services	Fees Before HST ($)	
Permit/Inspection Fee	**Charged to Licensed Electrical Contractors**	**Charged to Homeowners (Non-Electrical Contractors)**
New Residential[1]	175–452	397–849
Renovation Residential	79–222	79–345
New Apartments[2]	96 per unit	104 per unit
Renovation Apartments[2]	99 per unit	108 per unit
Commercial, Industrial and Agricultural	79–5,391	79–5,391
Entertainment[3]	61–305	61–305
Additional Site Visit Fees[4]	73–153	75–153
Other Inspection Fees[5]		
Hourly Rate[5]		153–211 per hour
Travel Fees (e.g., remote location)		153+
Reconnecting Service[6]		124–560
Contractor Licensing		
Electrical Contractor Licence		395 per year
Master Electrician Licence		80 per year
Master Electrician Examination		
Exam Fee		145
Electrical Plan Review		Min 302 for first 2 hours + 151 per additional hour
Distributor Oversight Fee[7]		1,100–781,473 per year
Administration		
Record Search/Request for Information		67–146 (includes HST)
Other Administration Fees (NSF fee, refund processing, etc.)		28–122

1. New residential includes detached homes, townhouses, semidetached, duplex, triplex and quadruplex homes and units of stacked housing.
2. Apartments include low- and high-rise residential buildings. The ESA provides discounts if an inspection is required for more than four units.
3. Entertainment includes carnivals, special events, trade shows, theatres and commercial/film shoots.
4. These fees apply to additional site visits made to re-inspect corrected defects or for any other site visit made upon request.
5. These fees apply when the ESA performs emergency inspections, inspections outside working hours or same-day inspections. This charge is in addition to the regular inspection fee.
6. The reconnection inspection is provided after fire, flood, lightning strike, explosion and other disasters, as well as for non-occupancy and non-payment (where the distributor has chosen to disconnect the power).
7. Oversight fee can vary based on the size of the distribution company. The fee is determined based on the following formula: [(# of customers x $0.215) + (distribution revenue x 0.0044%) + (min flat fee of $1,100)].

Appendix 3: Organizational Structure

Prepared by the Office of the Auditor General of Ontario



* ESAFE is an arm's-length division of the ESA.

Appendix 4: Glossary of Terms

Prepared by the Office of the Auditor General of Ontario

additional work: General inspections, electrical safety training, and testing the safety and certification of electrical products.
Canadian Electrical Code: A prescriptive technical document, developed by the Canadian Standards Association, to reflect the minimum safety requirements for the installation and maintenance of electrical systems and equipment in Canada. It is updated to reflect the latest advances in technology and other major developments. This code is followed by every province in Canada and was adopted in Ontario as the main segment of the Ontario Electrical Safety Code.
certified electrical products: Electrical products that plug into electrical outlets, which must be certified and tested by an accredited certification agency to be sold and used in Ontario.
contractor: A company and/or individual licensed by the ESA and authorized to offer, advertise and perform electrical installations in Ontario.
high-risk installations: Electrical installations that have a high potential of non-compliance with the Ontario Electrical Code and hence may pose a high risk of extreme fire or electrocution.
illegal installations: Electrical installations for the public not done by a contractor. There are two main exemptions: homeowners can do installations in their own homes, and installations within an industrial facility or on a farm can be done by an owner or an employee.
industrial facility: A manufacturing plant, hospital, local distribution company or power generating plant.
installations: New-wire electrical installations that involve adding/replacing electrical wiring and devices—for example, wiring a new residential home or an industrial facility, installing pot lights, wiring a new hot tub, or replacing an electrical panel. New-wire electrical installations are not replacements of wall plugs or light switches, as these connections are made to an already existing wire.
local distribution companies: Companies/distributors, such as Toronto Hydro, responsible for supplying electricity from transmission lines to homes and to commercial and industrial buildings. Local distribution companies are also responsible for ensuring electrical distribution systems are built, maintained and operated in accordance with Regulation 22/04, Electrical Distribution Safety.
Ontario Electrical Safety Code: A prescriptive technical document, produced and sold by the ESA, that details how safe installations of electrical wiring and devices should be performed and sets the minimum safety requirements for the installation and maintenance of all electrical systems and equipment in Ontario. The Ontario Electrical Safety Code is composed of the Canadian Electrical Code, together with specific Ontario amendments. Development of the Canadian Electrical Code is led by the Canadian Standards Association (CSA). It is developed in consultation with technical committees and subcommittees reflecting expertise from across Canada, including the ESA. The Ontario amendments are developed by the Ontario Provincial Code Committee, a committee composed of different stakeholders including contractors and manufacturers.
safe installations: Installations that comply with the Ontario Electrical Safety Code.
unsafe installations: Installations that do not comply with the Ontario Electrical Safety Code.

Appendix 5: Audit Criteria

Prepared by the Office of the Auditor General of Ontario

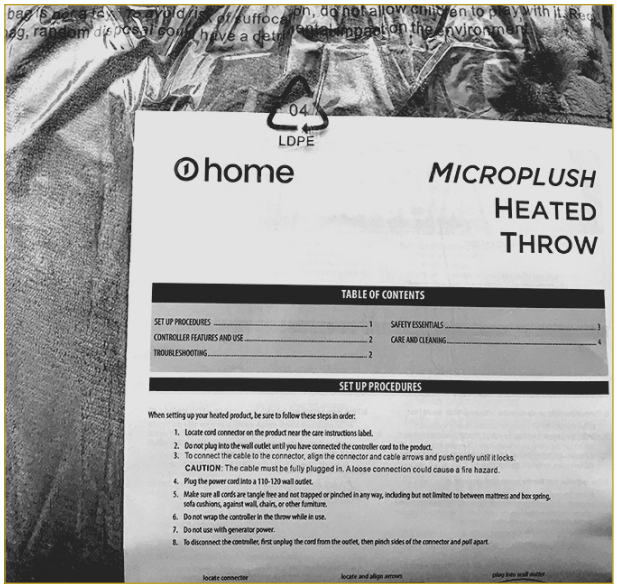
1.	The governance structure and processes in place effectively monitor that the ESA is fulfilling its mandated responsibilities.
2.	Effective licensing processes are in place so that licensed electrical contractors and master electricians are qualified to carry out their work in compliance with applicable safety laws.
3.	Effective and timely inspection processes are in place for electrical installations so that electrical installations comply with applicable safety laws.
4.	Effective processes and systems are in place to record, review and investigate electricity-related incidents, injuries and fatalities; and to take appropriate and corrective action on a timely basis to prevent future incidents.
5.	The ESA's management of human and financial resources is sufficient and used efficiently and effectively to fulfill mandated, regulatory and non-regulatory responsibilities.
6.	Effective processes are in place to prevent, identify, stop, investigate and prosecute illegal electrical activities, including the sale and use of unapproved electrical products.
7.	Accurate, timely and complete information is regularly collected to allow management to assess the effectiveness of mandated, regulatory and non-regulatory safety activities and make informed decisions.
8.	Effective performance indicators and targets for protecting the safety of Ontarians are established, monitored and compared against actual results so that intended safety outcomes are achieved.
9.	The Ministry of Government and Consumer Services has effective processes to monitor and address the ESA's performance in enhancing electrical safety and reducing safety incidents involving electricity across the province.

Appendix 6: Electrical Products Purchased from Online Retailer

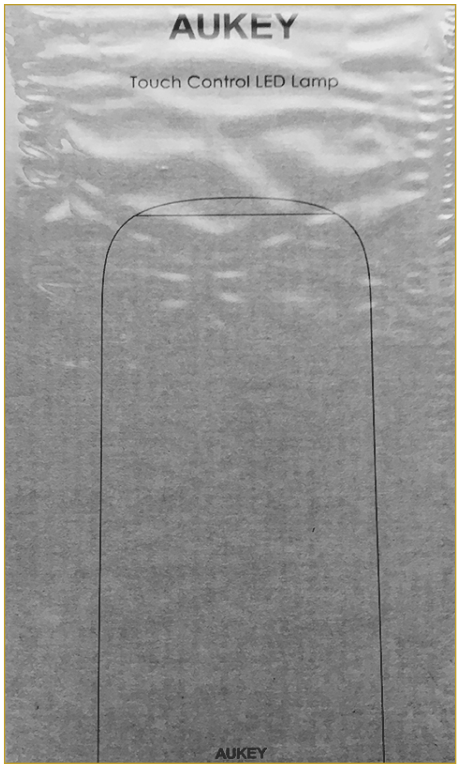
Prepared by the Office of the Auditor General of Ontario

Not Certified

Home Heated Blanket
Could not be safety tested.



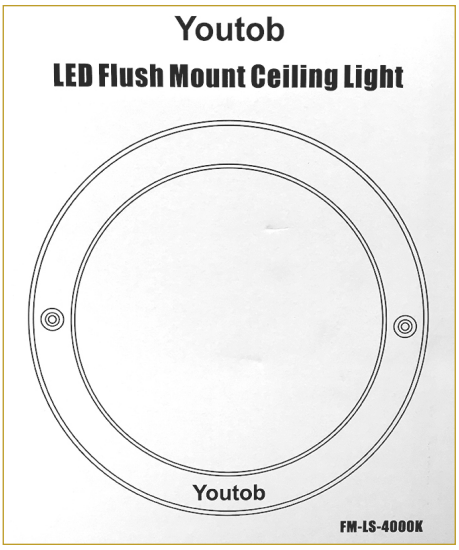
Aukey Touch Control LED Lamp
Failed safety testing.



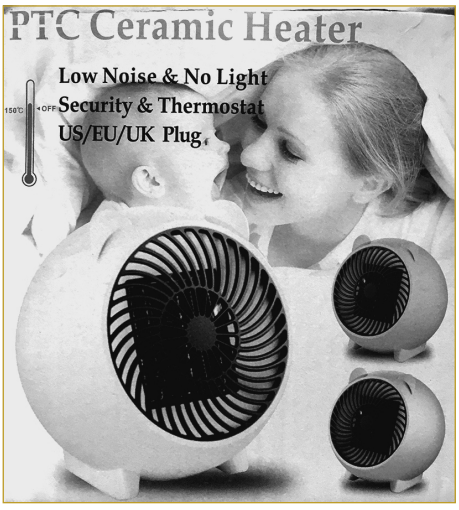
Adaptive Fast Charger
Failed safety testing.

IETGZ USB Wall Charger
Failed safety testing.

Youtob LED Flush Mount Ceiling Light
Failed safety testing.

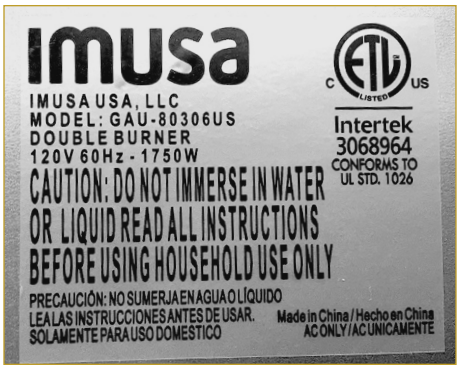


PTC Ceramic Heater
Failed safety testing.

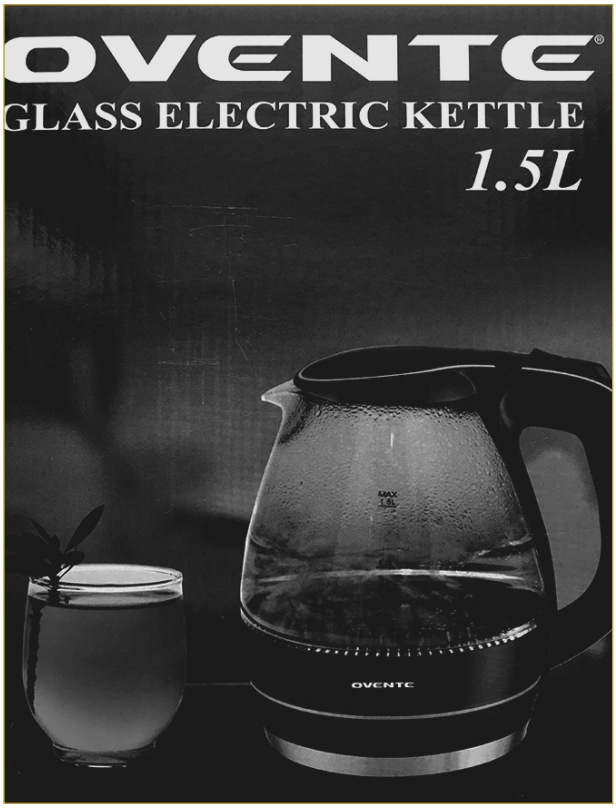


Certified

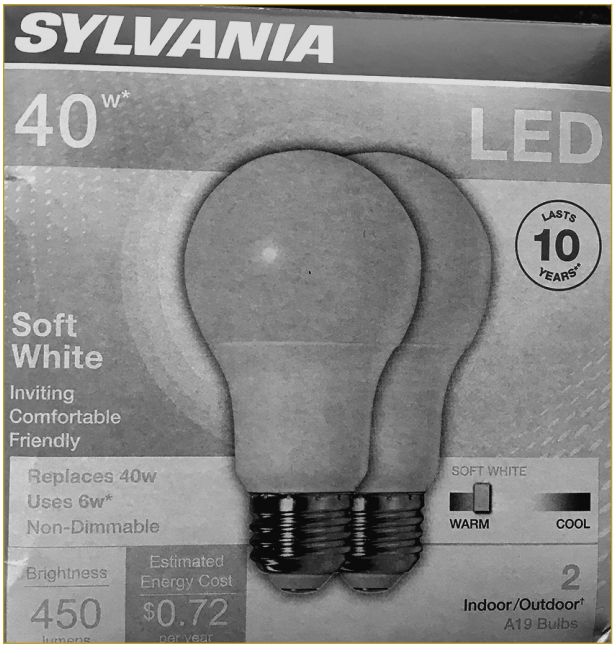
Imusa Electric Double Burner



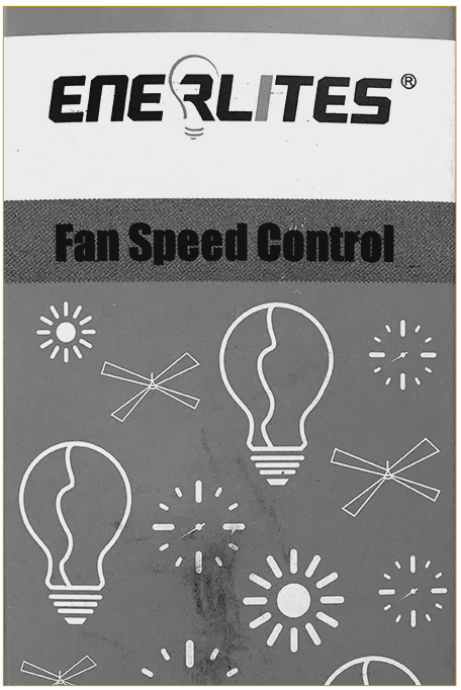
Ovente Glass Electric Kettle



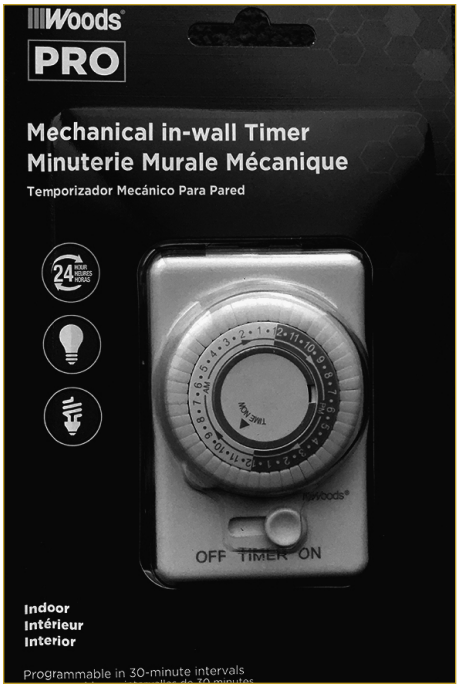
Sylvania 40W LED Lamp



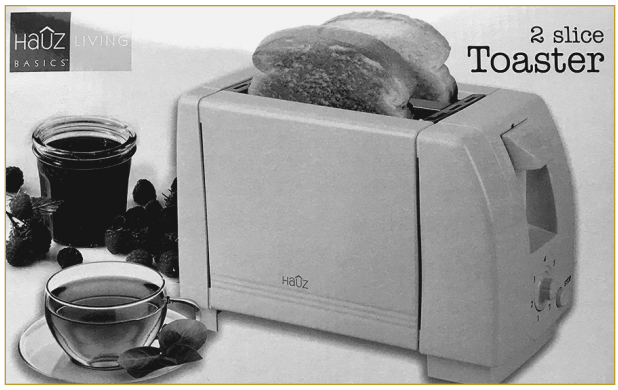
Enerlites Fan Speed Control

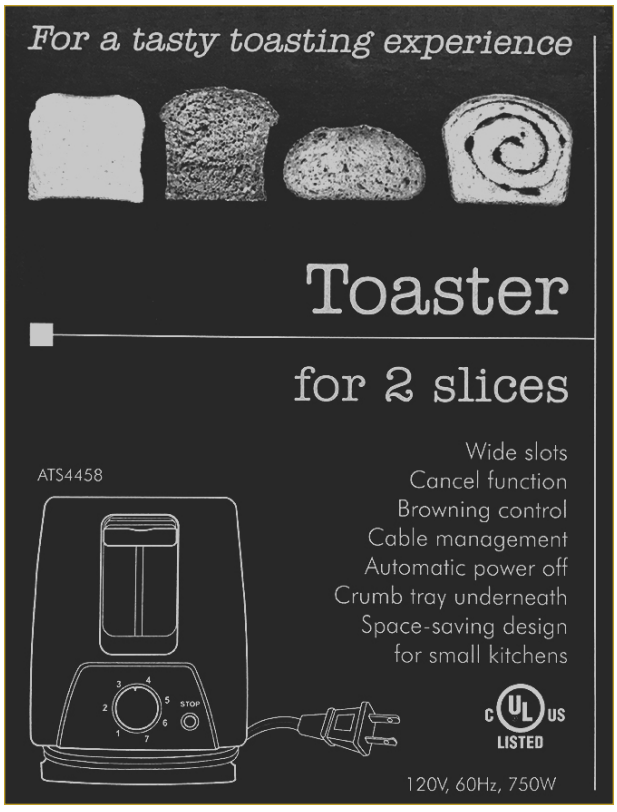


Woods Mechanical In-Wall Timer



Hauz 2 Slice Toaste





Portable Luminaire

Appendix 7: ESA Board of Directors

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The ESA Board meets on a quarterly basis and has established three committees: Audit and Investment, People and Culture/Governance, and Regulatory Affairs.

The appointment of members is as follows:

- Three members are appointed by the Ministry of Government and Consumer Services.
- Eight members are appointed based on an election/appointment process from these industries: engineering (1), electrical manufacturing (1), electrical utilities (2), electrical contractors (3) and other sectors (1).
- One member is ESA's President and Chief Executive Officer.

Members of the ESA Board of Directors as of December 31, 2019		
Electrical Manufacturing (Founder/Managing Partner at Daniel Péloquin Consultant)	**Electrical Utilities** (CEO of Festival Hydro Inc.)	**Electrical Utilities** (President/CEO of Independent Electricity Systems Operator)
Electrical Contractor (President/CEO of Oosterhof Electrical Inc.)	**Electrical Contractor** (President/CEO of Complete Electrical Services Inc.)	**Electrical Contractor** (General Manager of Honey Electric Ltd.)
Engineering (Principal at Bergeron Consulting)	**Legal** (OPG and Union Gas – previously held positions)	**Electrical Safety Authority** (President and CEO)
Electrical Contractor (Co-owner of Power-Tek Electrical Services Inc.)	**Electrical Utilities** (President, Thunder Bay Hydro)	**Other** (President, Spectrum Business Development Inc.)

Appointed by the Board
Appointed by the Ministry
ESA President and CEO

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ISSN 1911-7078 (Online)
ISBN 978-1-4868-4898-0 (PDF, 2020 ed.)