



Nalcor Energy
Sustainability Report

2019

NALCOR ENERGY SUSTAINABILITY REPORT

2019

About This Report

This report outlines our sustainability performance for 2019 with information organized according to our corporate objectives. Key areas of interest were identified through consultation with our stakeholders using a materiality assessment—a tool which helped us reflect on our work practices and allows us to measure how well we balance the expectations of our stakeholders and our business, social, economic and environmental needs.



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MESSAGE FROM THE PRESIDENT AND CEO



We take great pride in our responsibility to sustainably develop our province's energy resources. Our teams come to work every day with a conscious effort and intent to make our business and province more sustainable for our families and neighbours, today and for generations to come.

As a company with operations throughout the province of Newfoundland and Labrador, we recognize the impact we can have on the communities we live and operate in. We work hard to minimize these impacts and our sustainability pillars and priorities reflect the work we do to deliver on this commitment.

In 2018, we received the Sustainable Electricity Company™ designation from the Canadian Electricity Association (CEA) demonstrating our commitment to environmental, social and economic practices and to the principles of sustainable development. This designation deepens our unwavering commitment to develop and manage Newfoundland and Labrador's rich resources in a way that considers the safety and environmental stewardship of our communities.

Our Sustainability Steering Committee continues to annually review the company's performance against its goals and targets established by the CEA and the ISO 26000 Guidance on Social Responsibility. Our focus on sustainability helps us assess how our work today will meet the needs of the future. In 2019, we continued our commitment to sustainability excellence by prioritizing key aspects including, safe work practices, climate change mitigation measures, the reliability of our assets, employee engagement and community investment.

As a company, we are dedicated to continual improvement in all of our practices in 2020 and beyond. We hope this report will give you some insight into what we are doing to help ensure a sustainable future for Newfoundland and Labrador.

I look forward to working with the Board of Directors, our exceptional team of employees across the company and our many diverse partners in the industry and community in the year ahead.

A stylized, handwritten signature in blue ink, appearing to read 'Stan Marshall'.

Stan Marshall
President and CEO, Nalcor Energy



**WE ARE FOCUSED
ON A SAFE AND
STRONG FINISH
FOR THE MUSKRAT
FALLS PROJECT.**



ABOUT NALCOR

WHO WE ARE

We put people first—building a solid foundation for the future and making a difference in our communities through safety and responsibly developing and managing our natural resources. As a part of this, we are dedicated to providing safe and dependable electricity to our province and neighbouring markets.

OUR VISION AND VALUES

Our vision is to develop and manage our energy resources safely and responsibly for the maximum benefit of the people of Newfoundland and Labrador.

Our values shape how we do business and we use them to make decisions and interact with our stakeholders. We recognize it is not only what we achieve, but how we achieve it, that truly makes us proud of our accomplishments.

Our core values have helped us build a culture based on high standards and expectations and we are empowered to challenge assumptions and to seize new opportunities while realizing our corporate vision every day.



OPEN COMMUNICATION

Fostering an environment where information moves freely in a timely manner.

ACCOUNTABILITY

Holding ourselves responsible for our actions and performance.

SAFETY

Relentless commitment to protecting ourselves, our colleagues and our community.

HONESTY AND TRUST

Being sincere in everything we say and do.

TEAMWORK

Sharing our ideas in an open and supportive manner to achieve excellence.

RESPECT AND DIGNITY

Appreciating the individuality of others in our words and actions.

LEADERSHIP

Empowering individuals to help guide and inspire others.



LOWER CHURCHILL PROJECT

The lower Churchill River is one of the most promising hydroelectric resources in North America. Muskrat Falls and Gull Island have a combined capacity of more than 3,000 megawatts. The development of the Muskrat Falls Project includes construction of an 824 megawatt hydroelectric dam and more than 1,600 kilometres of transmission lines that will provide long-term, clean, renewable energy.



NEWFOUNDLAND AND LABRADOR HYDRO

Hydro manages Newfoundland and Labrador's electricity system. Through generation, transmission, and distribution operations, Hydro is committed to meeting the needs of customers and providing residents, businesses, and communities across the province with safe, reliable power.



CHURCHILL FALLS

Churchill Falls, with a rate capacity of 5,425 megawatts, is one of the world's largest underground hydroelectric powerhouses. It provides clean, renewable electricity to millions of consumers across North America.



ENERGY MARKETING

Nalcor actively trades and sells the province's surplus power to customers in external energy markets. The Energy Marketing portfolio includes surplus Churchill Falls recall power, long-term transmission rights, and agreements with Hydro for the provision of external electricity marketing services.

CODE OF BUSINESS CONDUCT AND ETHICS

At Nalcor, our work environment is based on trust and respect. Our employees work without fear of intimidation, discrimination and retaliation and they know they work in a safe, secure and ethical workplace. Our Code of Business Conduct and Ethics strengthens our commitment to professional and ethical business practices, guiding our board of directors and all of our employees.

We also maintain the highest possible standards of business conduct and ethics in our external relationships. We expect all employees, officers and directors of the company, as well as contractors, suppliers, agents and representatives to:

- Conduct themselves in a professional manner at all times
- Avoid any business practices with the potential to be in conflict with the company's core values, impair the reputation of the company or expose the company to unnecessary financial or other liabilities

CORPORATE GOVERNANCE

In the past decade, we have experienced significant transition and growth. As a Crown corporation, Nalcor is accountable to the provincial government (shareholder) and the people of Newfoundland and Labrador.

The shareholder has appointed a board of directors to oversee the management of the company and the Nalcor board and management team understand the importance of sound corporate governance. The board meets regularly with a view of maintaining high standards in corporate governance. There are four committees that meet regularly including audit, governance, safety, health, environment and community and human resources and compensation.*

OUR SUSTAINABILITY JOURNEY

We have a responsibility to conduct our business in a manner that is environmentally and socially responsible, while ensuring long-term viability.

In 2019, we continued our commitment to sustainability with keen attention to maintaining our Sustainable Electricity Company™ designation with the Canadian Electricity Association.

We published our second annual Corporate Sustainability Report, highlighting our efforts throughout the year and our ongoing commitment to work toward a more sustainable future for our company and our province.

Other initiatives include launching a Stakeholder Engagement Database as a way to consistently document our stakeholder interactions. We have also issued and awarded a request for proposals for an updated Materiality Assessment. This stakeholder engagement process enables us to gather information on the relative importance of specific environmental, social and governance issues to our stakeholders. We are committed to updating this process every five years to ensure our targets and objectives continue to be focused on the issues that are a priority to our internal and external stakeholders.

We are constantly working to achieve success in our sustainability priorities of safety and health, environment, business excellence, people and community and are continuing to make progress we can be proud of.

* To see Nalcor's full board structure please see the 2019 Annual Report.



Stan Marshall, President and CEO, Nalcor Energy (right), accepts the Sustainable Electricity Company brand designation in 2018.

SUSTAINABILITY DESIGNATION

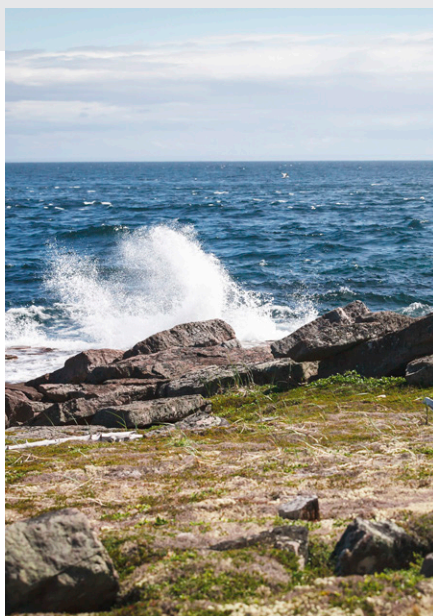
In 2018, we received the Sustainable Electricity Company™ brand designation from the Canadian Electricity Association (CEA), a designation established by the CEA based primarily on ISO 26000 Guidance on social responsibility.

Nalcor is the seventh Canadian electrical utility to receive this award, which recognizes significant achievement in sustainability. The designation demonstrates our commitment to responsible environmental, social and economic practices and to the principles of sustainable development. Every five years, a verification audit is completed by the CEA to ensure we uphold the standards and commitments as required.



**Sustainable
Electricity
Company™**

**Canadian
Electricity
Association**



SUSTAINABILITY GOVERNANCE

In 2017, we created a Nalcor Sustainability Steering Committee to drive implementation of strategic sustainability initiatives, goals and targets. Committee members represent each of the five sustainability themes related to: safety and health, environment, business excellence, people and community.

The Sustainability Steering Committee meets quarterly to review the company's performance against goals and targets, with the direction of the environment and sustainability manager and the oversight of the committee members who are responsible for these initiatives.

The committee provides performance reports to the Nalcor senior leadership team at quarterly meetings and to the safety, health, environment and community committee of the board of directors.

Nalcor Energy Sustainability Policy

People are at the heart of our business and we work hard every day for the people of Newfoundland and Labrador. We live and work here because of all our province has to offer and we are committed to being responsible corporate citizens.

We understand our daily operations impact the communities in which we operate. We take our responsibility to Newfoundland and Labrador seriously and work to minimize our impact and ensure we develop our resources in a sustainable way for the maximum benefit of the people of our province.

We are committed to providing a timely review of sustainable business operating procedures and practices. We are also committed to tracking, measuring and reporting on our performance of sustainability practices and are always looking to improve in these areas.

To succeed in our goals, we have committed to demonstrating excellence in the following areas:

- SAFETY AND HEALTH**
- ENVIRONMENT**
- BUSINESS EXCELLENCE**
- PEOPLE**
- COMMUNITY**

To achieve this, Nalcor Energy will:

- Make sustainability a priority
- Undertake activities and operations in a manner that balances the needs of current and future generations
- Encourage economic efficiencies in operations that are consistent with sustainable practices
- Promote a safe and healthy work environment
- Consider the life cycle of projects related to Nalcor, including their economic, environmental and social footprint
- Establish sustainability indicators to enable accountability, communicate specific goals and measure progress
- Prepare and regularly update a sustainability plan with specific goals and objectives
- Report annually on progress to Nalcor's board of directors and all stakeholders

Our Sustainability Priorities



SAFETY AND HEALTH

- Occupational Health and Wellness
- Corporate Emergency Response
- Public Safety
- Improving Safety Performance and Safety Culture



ENVIRONMENT

- EMS Improvement and Expansion
- Climate Change Mitigation and Adaptation
- Energy Use/Energy Savings
- Renewable Energy in Isolated Communities
- Emission Reduction/Displacement



BUSINESS EXCELLENCE

- Fiscal Responsibility, Transparency and Accountability
- Climate Change Risk Assessment of Assets
- Life Cycle Approach to Capital Projects
- Reliability
- Responsible Procurement/Supplier Diversity
- Interconnection with the North American Grid
- Grid/Electricity Portfolio Growth Plan



PEOPLE

- Diversity and Inclusion
- Employee Engagement
- Attraction and Retention



COMMUNITY

- Community Investment Program
- Economic Impact
- Customer Satisfaction
- Stakeholder Engagement and Indigenous Partnerships



Safety excellence is an integral part of our corporate identity. The families of our employees rely on us to ensure their loved ones make it home safely. We are committed to safe and responsible operations so the communities in which we operate can have confidence our work is always completed with safety top of mind.

SAFETY AND HEALTH

PRIORITIES

- Occupational health and wellness
- Corporate emergency response
- Public safety
- Improving safety performance and safety culture



Launched our new Mental Health Strategy and Psychological Health and Safety Policy



At the end of 2019, the Muskrat Falls team worked more than 17.5 million hours and 33 months without a lost-time injury



10 years since the last lost-time injury in the Hydro Generation team



Awarded the 2019 CEA President's Award for Safety Excellence in Generation Group 2



Hydro provided electrical safety training to the new recruits at the Fire and Emergency Services Fire School



OCCUPATIONAL HEALTH AND WELLNESS

MENTAL HEALTH MATTERS

As part of our commitment to create a safe and supportive work environment for all employees, a Mental Health Strategy and a Psychological Health and Safety Policy were launched in 2019. Our employee benefits package was also enhanced to include more mental health supports and benefits including increased coverage for sessions with a licensed psychologist, social worker or registered counselling therapist.

We continue to look for new ways and partnerships to help advance our support for psychological wellness and mental health throughout our company.



WORKING MIND TRAINING SESSIONS

In 2019, the focus for the Working Mind sessions was to have 50 per cent of Hydro employees complete this training session. The target was very close to being met, with 306 Hydro employees completing the training throughout the year. Many of the sessions were completed during our annual Safety and Health Week in our regional offices and more sessions were completed in the fall at Hydro Place.

The goal of this half-day course is to provide practical knowledge of mental health and mental illness so participants who complete the training can:

- Understand mental health/illness
- Recognize signs and symptoms in themselves and others
- Reduce stigma and negative attitudes towards people with mental health problems in the workplace
- Maintain their own mental health and improve resilience
- Support colleagues with mental health issues



Dr. Susan Biali Haas joined us as the keynote speaker for our 2019 Safety Summit.

SAFETY SUMMIT

Dr. Susan Biali Haas joined us as the keynote speaker at our 2019 Safety Summit. Dr. Biali Haas is a mental health advocate and strategist with more than 20 years of focus on the principles of healthy living, stress management, burnout prevention, mental health and positive psychology.

The summit also included sessions about managing change and a presentation from one of our own employees about their personal mental health journey and the stigma surrounding mental health.



CORPORATE EMERGENCY RESPONSE

EMERGENCY RESTORATION PLANNING FOR THE LABRADOR-ISLAND LINK

The Labrador-Island Link (LIL) is a crucial transmission line for our provincial energy grid as it delivers a large portion of the province's winter peak energy and demand to the Island Interconnected System. We have committed to an extensive planning program to ensure the reliability of the LIL and that there are a broad range of options to efficiently restore power if there is an unlikely structural failure along the transmission line.

To further prepare employees and to support the Emergency Response Plan, four mock emergency exercises were completed in October and November.

Two tower assembly exercises were completed, one each for line crews in Labrador and on the island.

A table-top exercise provided a mock scenario that brought together different parts of our organization to work collaboratively on testing the success of the actions that came out of the lessons learned from the 2018 desktop exercise. Roles and responsibilities of individual team members and departments were assessed and clarified on how to respond in the event of an emergency situation.

An engineering first response exercise was also completed, designed to test the communication limitations between the home office, where the engineering would be completed, and a remote site location.

Emergency planning exercises such as these are crucial. Having plans in place and scenarios tested in a safe environment enhances our abilities to respond in the unlikely event of a real-time emergency.



The LIL stretches across many remote areas of Newfoundland and Labrador. Emergency planning exercises are critical to ensure the safe operation of our assets.



Members of the Emergency Response Team on site at the Holyrood Plant.

EMERGENCY PLAN EXERCISES AT HOLYROOD

An important part of Hydro's safety planning is completing emergency plan exercises to ensure readiness. In 2019, the Holyrood team successfully implemented multiple training exercises.

Two full plant emergency evacuations were completed as a requirement under the Provincial Occupational Health and Safety (OHS) Act and to ensure employees and contractors at the facility understand procedures for the safe and orderly evacuation of personnel from the powerhouse. Accountability of all personnel, in a timely manner, is the key focus and both exercises achieved complete employee and contractor accountability in less than seven minutes.

One confined space entry rescue exercise was completed, consisting of Holyrood Emergency Response Technicians executing the safe retrieval of a casualty from within the confined space simulator.

One annual, high angle rescue exercise was completed and consisted of Holyrood Emergency Response Technicians executing the safe retrieval of a casualty at height from the powerhouse crane.

One emergency medical response exercise was also completed. These exercises are often incorporated into every other emergency response exercise (fire, spill, etc.) and bring an added element of realism to all scenarios. In 2019, the Holyrood Emergency Response Technicians and Emergency Response Team members were part of the confined space exercise and hazmat spill exercise scenarios.

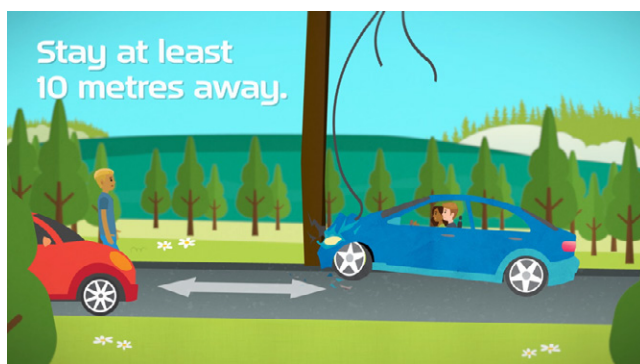
PUBLIC SAFETY

PROMOTING POWER LINE AND POWER OUTAGE SAFETY

In 2019, Hydro continued efforts to raise customer and public awareness of safety around power lines and safety during power outages. Hydro circulated timely, informative content typically in advance of stormy weather, to promote how homeowners can prepare for and stay safe during power outages. Other focus areas included:

- What to do to stay safe if your vehicle comes in contact with a downed power line
- Staying clear of power lines, guy wires and stations while snowmobiling
- Safe hunting near power lines

Hydro also developed informational material aimed at small contractors that promotes working safely with heavy equipment around power lines and poles.



Safety and Health Advisor, Gus Loder, delivering the electrical safety course.

ELECTRICAL SAFETY TRAINING FOR FIRST RESPONDERS

As part of our commitment to safety, Hydro Safety, Health and Environment (SHE) advisors provide outreach and training to various stakeholders in our communities. Gus Loder, SHE advisor for Transmission and Rural Operations (TRO) West/East, and others on the Safety and Health team, have delivered the electrical safety course to community and regional fire departments throughout the province for a number of years. In July, we provided training to the new recruits at the Fire and Emergency Services Fire School for the first time.

This training is important for emergency first responders who can often encounter electrical hazards on the job. The course arms responders with awareness and knowledge of the electrical distribution system, the associated dangers and how to safely respond to incidents that involve energized lines and equipment.



Exploits River Dam.

PUBLIC SAFETY AROUND DAMS

A big part of our public safety initiatives include raising public awareness around dam safety in many communities across our province.

In 2019, Hydro increased public safety control measures in multiple areas including public safety signage installation at the Cat Arm reservoir, Bishop's Falls, Grand Falls, the Buchans main dam, the Millertown dam and the Twin Lakes dam. Fencing was installed in the Cat Arm reservoir as well.

Dam breach analyses were completed for Victoria Main dam, Eclipse Dam and the Southeast and Southwest cutoff dams at Long Pond. These analyses are used to determine downstream flood zones in the event of a dam failure.

A dam safety review was completed for Millertown, Bishop's Falls, Upper Salmon, Granite dam and Burnt canal and an update to the probable maximum flood study for the Bay d'Espoir system was also finalized in 2019.

Emergency preparedness plans were completed and updated for Millertown, Star Lake and Bishop's Falls and emergency response tabletop exercises were completed for the Millertown dam and Long Pond dams.



A safety boom in place at Bishop's Falls dam.



IMPROVING SAFETY PERFORMANCE AND SAFETY CULTURE



HYDRO GENERATION CELEBRATES MAJOR SAFETY MILESTONE

On May 14, the Hydro Generation team celebrated a very significant safety milestone and collective effort towards keeping every employee safe: 10 years since the last lost-time injury. This is a substantial accomplishment that has taken continued focus each and every hour worked, with continued commitment from everyone—whether on the tools or in the office. Reaching and surpassing milestones such as this takes relentless focus.

This commitment to safety and making sure everyone goes home safely every day is an accomplishment the Hydro Generation team can be proud of.



Congratulations to the Hydro Generation team on their commitment to safety and accomplishing this milestone together as a team.

GETTING THE JOB DONE SAFELY TOGETHER

Safety is a critical measure of our success. Since we started construction on the Muskrat Falls Project in 2012, tens of thousands of skilled workers from across the province and country have worked together to build the second-largest hydro facility in Atlantic Canada.

Our highest priority has always been safety. Not a minute, hour or day goes by where safety is not top-of-mind and in the forefront of each and every activity. Our project team, contractors, union partners and skilled labour force all share the same dedication to safety and demonstrate that commitment by working safely every day.

In April, the Muskrat Falls Project received Canada's Building Trades Unions' (CBTU) prestigious Health and Safety Distinction Award. This award recognizes the contributions of industry for their demonstrated commitment to support, build and transform the lives of Canadians through leadership development, skill growth, positive community impact, personal accountability or health and safety.

One of the safety success factors recognized by this award was the number of hours worked by our team without a lost-time injury (LTI). At the end of 2019, our team worked more than 17.5 million hours and 33 months without an LTI. This is a tremendous feat for a large-scale construction project with our team working in various locations throughout the province. We recognize we must not waver on our commitment to safety. In late 2019, we initiated a safety stand down and stopped work on the generation project to reiterate this commitment.

Following a review of our safety protocols with our contractors, work was restarted. We are dedicated to safety and taking this action was necessary to reset our focus.

Our team remains diligent in our commitment to safety as this is essential in ensuring each and every one of our workers goes home safely.



CEA PRESIDENT'S AWARD FOR SAFETY

Every day, we strive to create a culture where each person actively takes responsibility for their own safety, and the safety of those they work with, to ensure everyone goes home safely. We work diligently to maintain these standards throughout our company.

In recognition of our unwavering commitment to safety, Nalcor was awarded the 2019 Canadian Electricity Association (CEA) President's Award for Safety Excellence in Generation in Group 2. This prestigious recognition is reserved for corporate utilities that achieve the top ranking in Total Recordable Injury Frequency (TRIF) among comparable utilities, and is a testament to our employees' commitment to safety.



We are fortunate to live and work in a province with an abundance of natural resources and we are passionate about developing and managing our natural environment in a sustainable way. Our employees understand the importance of finding ways to minimize our environmental impact while tackling climate change, and inspiring others to do the same.

ENVIRONMENT

PRIORITIES

- Environmental management system improvement and expansion
- Climate change mitigation and adaptation
- Energy use and energy savings
- Renewable energy in isolated communities
- Emission reduction and displacement



Completion of 99 per cent of our Environmental Management System targets



Rescued and released a total of 64 storm petrels in Witless Bay



Churchill Falls was the first community in Labrador with a curbside recycling program



Total annual energy savings achieved, as a result of Hydro's residential programs in 2019, was 1,385 MWh



ENVIRONMENTAL MANAGEMENT SYSTEM IMPROVEMENT AND EXPANSION

A cornerstone of our environmental stewardship is our Environmental Management System (EMS). Our EMS is registered under ISO 14001:2015—an international standard which means our system is audited and verified by an external auditor.

An EMS is a systematic approach to understanding the scope of what we do and how these activities can impact the environment. This includes ensuring controls are in place to minimize or avoid impacts, monitoring these controls and making improvements to the system as required. The system includes training for employees, measures for how to respond to environmental emergencies and the consideration of our stakeholders.

In 2019, numerous activities were undertaken to improve our existing EMS in many areas, including fish and wildlife management and management of our waste streams. We have also taken several steps to expand our system to include new assets and operating areas.



Members of the environment team perform an audit on the vegetation control program along the 230 kV transmission line near Churchill Falls.



An environmental compliance audit at the Churchill Falls fuel station.

HELPING STORM PETRELS

In 2019, we made a concerted effort to reduce the impact of our terminal station infrastructure on Leach's Storm Petrels (*Oceanodroma leucorhoa*), specifically at our Soldiers Pond Terminal Station site.

These small seabirds are attracted to lights and can be led astray during the end of the breeding season when they migrate to their offshore wintering grounds, especially on foggy nights.

Our employees took several steps to reduce potential disorientation at the site. Any unnecessary lighting was decreased to reduce upward glow. They also carried out searches for stranded birds to release them back to the ocean.

Following the success at the Soldiers Pond Terminal Station, the Holyrood Thermal Generating Station teamed up with Canadian Wildlife Service to implement a similar procedure over the past year. This included monitoring and tracking storm petrel activity. A total of 64 storm petrels were rescued and released in Witless Bay.



A total of 64 Storm Petrels were rescued and released in Witless Bay.



Fisheries and Oceans Canada and ERMA officials view the dam and fish ladder at Bishop's Falls.

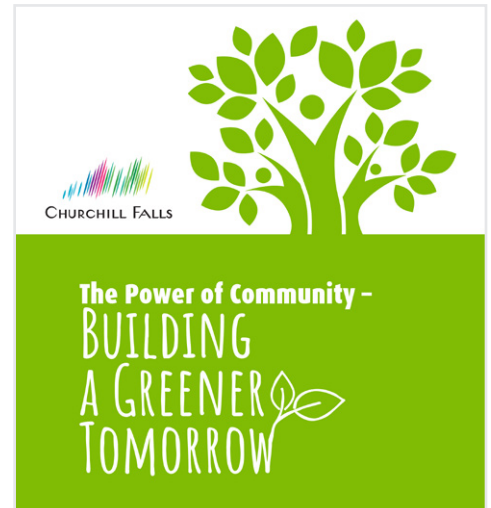
WORKING WITH OUR PARTNERS ON THE EXPLOITS RIVER

In July, officials from both the Department of Fisheries and Oceans Canada (DFO) and the local Environment Resources Management Association (ERMA) visited some of the Exploits hydroelectric generation facilities, with a focus on the operation of the various fish passage systems.

Hydro continues to work with our government, conservation and community partners to ensure the fish passage systems at Grand Falls, Bishop's Falls and other dams are working as they should to help facilitate the annual salmon run on the Exploits River. Hydro owns and operates fish bypass systems at Grand Falls and Bishop's Falls to help guide juvenile salmon migrating downstream from the power canal back to the main river channel. These fishways, owned by DFO and operated by ERMA, allow upstream migrating Atlantic salmon to get past the dams.

Hydro has also entered into a Minimum Flow Agreement with DFO to ensure juvenile salmon are successfully moved downstream and adult salmon are successfully moved upstream to spawn. Minimum flow regimes are in place and adhered to for most of the existing dams in the Exploits watershed, including at Grand Falls and Bishop's Falls, which are intended to maintain an adequate flow for habitat maintenance (in late fall to early spring) and for fish migration (during the remainder of the year).

The effective management and conservation of the Exploits River salmon resource is of great importance to so many in central Newfoundland. ERMA, which operates the popular salmonid interpretation centre in Grand Falls-Windsor, is interested in the ongoing enhancement of the salmon population and habitat, and is a long-established partner of Hydro's.



First installed in the mid-90s, the fish passage system overseen today by Hydro and its partners has proven to be an important feature that has contributed to the success story of Atlantic salmon on the Exploits River.

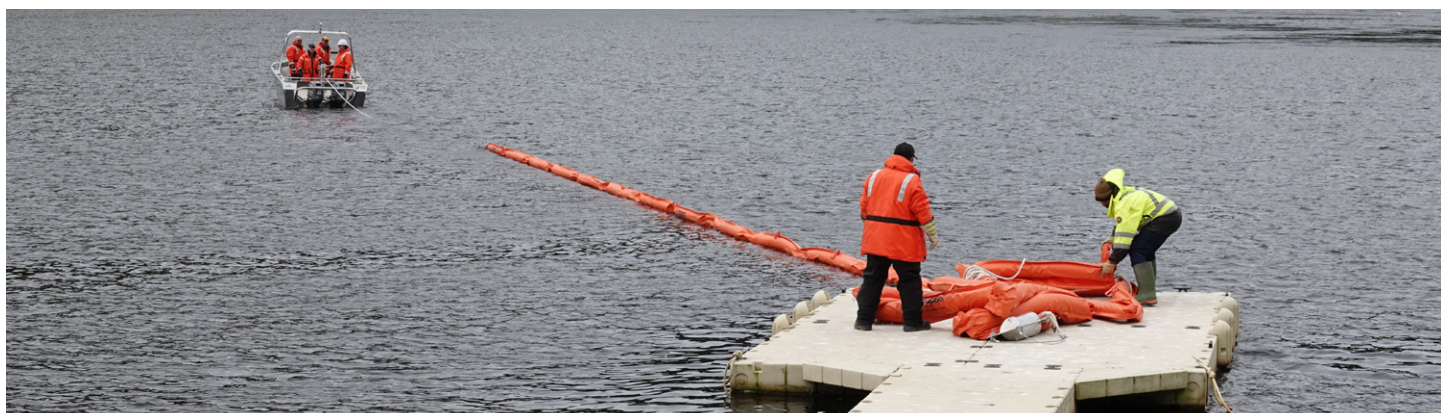
WASTE DIVERSION INITIATIVES IN CHURCHILL FALLS

After a local volunteer group retired from collecting recyclable beverage containers in Churchill Falls, residents were left with no way to recycle without making a nearly 300km trip to Wabush or Happy Valley-Goose Bay. To help residents optimize their waste collection schedule and incorporate beverage container recyclables, we established a curbside collection program two years ago.

In 2019, we expanded the program to include mixed paper and cardboard. The program's implementation included replacing community and workplace single garbage receptacles with multi-stream units, acquiring and installing fibre balers and providing operational training. In addition to recycling initiatives, we also partnered with the Multi-Materials Stewardship Board (MMSB) to encourage backyard composting in the community.

Churchill Falls was the first community in Labrador with a curbside recycling program.

The expanded recycling program and waste reduction initiatives will have a significant impact on the environmental sustainability of the community, including prolonging the life of the landfill.



Members of the spill response team completing the response plan exercise in Churchill Falls.

CHURCHILL FALLS RIVER AND RESERVOIR SPILL RESPONSE PLAN EXERCISE

Pollution prevention measures are implemented in the powerhouse and at our control structures. These measures include the installation and maintenance of secondary containment devices and alarms. However, due to human error or mechanical failure, the risk of spills to water bodies still exist. Therefore, it is necessary for a spill response plan to be in place to mitigate any potential impacts to our environment and to human health.

Churchill Falls is remote and primarily relies on internal resources for spill response. The Churchill Falls River and Reservoir Spill Response Plan (R&R SRP) is in place for any potential petroleum hydrocarbon spills into the Churchill River and the Upper Churchill reservoirs, with a focus on the use of boats and booms.

All members of the spill response team are required to complete an annual classroom training review of the spill response plan, roles and responsibilities and on-river spill recovery techniques. In addition, once every three years, a practical river spill exercise is facilitated. This practical exercise took place in the fall of 2019.

The scenario for the practical exercise was a transformer oil spill from the powerhouse into the Churchill River. Fourteen members of the spill response team responded: ten deployed three boats and practiced using booms and absorbents at three locations while four members assisted with retrieving required supplies for the spill response. A helicopter was also deployed to fly downstream to determine the extent of the spill.

This extensive exercise enabled the team to practice their responsibilities during a powerhouse spill as per their R&R SRP.

ONGOING EMS EXPANSION

As part of our ongoing commitment to be an environmental leader, we are working to include three new lines of business into our Environmental Management System (EMS): Muskrat Falls, the Labrador Island Link (LIL) and the Labrador Transmission Corporation.

Over the past year, the first phase of our EMS development was completed for these three areas including the identification of preliminary aspects, their compliance obligations and considerations for Life Cycle Management. This phased approach to EMS development sets the foundation for comprehensive environmental management through the transition to operations for new assets.



The powerhouse, spillway and north dam at the Muskrat Falls site.



CLIMATE CHANGE MITIGATION AND ADAPTATION



Hydro's first 100 per cent electric vehicle was added in 2019.

The earth's climate is dynamic and has changed significantly in the past. However, the nature and cause of current climate change is different. It is widely recognized that emissions from human activities have resulted in climate change. There is an identified need for all sectors to mitigate and adapt to climate change. As an electricity generating utility, we have a significant role to play in climate change adaptation and mitigation on a provincial and national level.

In 2019, many activities were undertaken to contribute to the mitigation of climate change including electrification of transportation, reducing energy consumption and development of renewable energy projects in our isolated communities. Our climate change adaptation efforts are included under Business Excellence as adapting to climate change is an important part of ensuring the reliability of our infrastructure.

PROVIDING CLEAN ENERGY ELECTRIC VEHICLE OWNERS CAN RELY ON

As the level of electric vehicle infrastructure in Canada continues to increase, Hydro is actively working with provincial and federal governments to implement the province's first fast-charging network and helping bring the province more in line with electric vehicle use seen across the country.

Enabling electric vehicle owners to travel long distances across the island portion of the province will remove one of the largest barriers to ownership for consumers, while also bringing opportunity for savings in fuel and maintenance costs. Increased domestic ownership of electric vehicles will also help to reduce carbon emissions and support electrification efforts in the province.

An electric vehicle fast charging network will have several benefits for Newfoundland and Labrador. Hydro is excited to advance this initiative, support a greener future for our province and provide clean, renewable, road-trip ready energy.



ENERGY USE AND ENERGY SAVINGS



HELPING YOU BECOME A SCALLYWAG BUSTING PRO

In 2019, Hydro and Newfoundland Power introduced the Scallywag program and associated TV commercials to promote energy efficiency. The scallywag busting team at takeCHARGE helped people get rid of energy-wasting pests.

They provided many tips to help people save energy and money including taking shorter showers, putting on a sweater rather than turning up the heat and using LED bulbs. There was also an opportunity to take advantage of great deals across the province on thermostats, insulation and instant rebates to help people save.

People were invited to celebrate at energy-efficiency events (NEIA Newleaf Conference, Newfoundland Growlers hockey game and a Kent event) from October 14-20, and to enter for a chance to win one of two scallywag busting toolkits—full of energy efficient products.

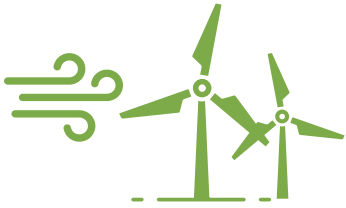


RESIDENTIAL AND BUSINESS REBATE PROGRAMS

Hydro partnered with Newfoundland Power to deliver the takeCHARGE program to offer rebate programs to encourage residential and commercial customers to reduce their electricity usage. Reducing the amount of electricity used means reducing greenhouse gas emissions associated with fossil fuel based electricity generation.

Hydro's residential portfolio included five programs: insulation, thermostats, heat recovery ventilators (HRV), instant rebates and the Residential Benchmarking Program. These programs were offered jointly with Newfoundland Power and one offered solely by Hydro (the Isolated Systems Community Energy Efficiency Program). The total annual energy savings achieved as a result of Hydro's residential programs in 2019 was 1,385 MWh.

Hydro's Business Efficiency Program and Isolated Business Efficiency Program, both include prescriptive product rebates for heating and lighting controls and a custom program for individual customer facilities. These programs provide technical support to identify economical energy efficiency opportunities and provide financial support for capital upgrades. The total annual energy savings achieved as a result of Hydro's prescriptive and custom business programs in 2019 was 723 MWh.



RENEWABLE ENERGY IN ISOLATED COMMUNITIES



The Makkovik Diesel Plant.

MAKKOVIK SOLAR NET METERING PROJECT

In 2017, Hydro established a Net Metering Program that allows Hydro's customers to generate power for their own use from small-scale renewable generating facilities of 100 kW or less and supply any available surplus power to Hydro.

Net metering initiatives are undertaken by customers, not by Hydro directly. There is, however, an impact on Hydro's system as a result of net metering activity. Hydro currently has one net metering customer in an isolated diesel community under Hydro's Net Metering service option. This customer is located in Makkovik, Labrador and has a 48 kW solar energy generator. Net metering for this customer began in November 2019 and resulted in energy savings of 540 kWh as of the end of 2019—a savings of approximately 152 L of diesel fuel when compared to supplying from a diesel generator.

REDUCING AIR EMISSIONS IN RURAL AND REMOTE COMMUNITIES

Although emissions from diesel plants in remote communities do not contribute much to Hydro's overall air emissions output, the following clean energy initiatives for rural and remote communities have been identified as a priority for Hydro and our stakeholders, especially the local communities in which these facilities are operating. As part of our commitment to reducing air emissions and to climate change mitigation, Hydro is working on the following initiatives:

1 NAIN WIND MICRO-GRID

Hydro is working with the Nunatsiavut government on a project, under the federal government's Clean Energy for Rural and Remote Communities Program, to complete a feasibility study on developing a renewable energy system in the isolated community of Nain which is currently supplied by diesel generation. This system will integrate wind generation and energy storage, with the community's existing diesel generation system to reduce the community's reliance on diesel fuel for electricity. This system is expected to reduce the use of diesel generation by 28 to 37 per cent. If this system is proved feasible, this project is expected to be deployed as a pilot project leading the way for future renewable integration along the coast.

2 MARY'S HARBOUR MINI-HYDRO AND SOLAR

Hydro is working with St. Mary's River Energy LP on a project, under the federal government's Clean Energy Rural and Remote Communities Program, to integrate hydro generation, solar generation and energy storage with the community's existing diesel generation. This project is expected to reduce diesel consumption by 30 per cent, per year. In September of 2019, Hydro finished integrating the hydro generation portion of this project and has been purchasing energy to help meet community energy needs since that time.

3 PROVINCIAL GOVERNMENT REQUEST FOR EOI AND HYDRO REQUEST FOR PRE-QUALIFICATION

Over the summer, the Provincial Government Department of Natural Resources (NR) and Hydro jointly launched an Expression of Interest (EOI) for Renewable Energy Solutions for Isolated Coastal Diesel Powered communities.

The purpose of this EOI was to solicit input from the local, national and international marketplace for potential renewable energy solutions in 14 of the province's regulated isolated diesel-powered electricity systems. NR and Hydro are currently using the input gained from this process to determine a long term plan for integrating renewable energy generation into isolated diesel systems and to develop a request for pre-qualification (RFPQ).

This RFPQ will allow independent power producers an opportunity to enter into Hydro's Rural Planning—Isolated Renewable Interconnection Process.



EMISSION REDUCTION AND DISPLACEMENT

All of the previously highlighted activities contribute to the reduction of air emissions and the displacement of greenhouse gases.

The completion of the Muskrat Falls Project will, however, have the most significant impact to the reduction in air emissions and GHG displacement. It's estimated that power from the project can displace three to four megatonnes of carbon dioxide annually from thermal generating facilities. When Muskrat Falls is on line Newfoundland and Labrador electricity supply will be 98 per cent renewable.

Right: In the isolated community of Ramea, Hydro has been purchasing renewable energy from the Frontier Power Systems (Frontier) wind farm since 2004. In 2019 the power purchase agreement between Hydro and Frontier Energy expired and is now being renewed on a monthly basis.





We believe it is not only what we achieve, but how we achieve it, that allows us to be proud of what we are able to accomplish. We are dedicated to bettering our processes, our abilities and our organization as we move together toward a more sustainable future for our province.

BUSINESS EXCELLENCE

PRIORITIES

- Fiscal responsibility, transparency, and accountability
- Climate change risk assessment of assets
- Lifecycle approach to capital projects
- Reliability
- Responsible procurement and supplier diversity
- Interconnection with the North American grid
- Grid/electricity portfolio growth plan



Nalcor Energy Marketing (NEM) delivered 95 per cent of available recapture energy from the Churchill Falls Generating Station to market realizing revenues of \$36 million



Created specific climate change objectives including ensuring Readiness for Extreme Weather Events and Electrification of Transportation



Worked to protect our power grid from cyber attacks, including the use of modern operating technology systems for active cyber threat detection and incident response at the plant level



Underwent capital improvements at the Wabush Terminal Station to ensure reliable electricity for Hydro's Labrador customers



North Dam was completed at Muskrat Falls and put into operation, with approximately 243,000 m³ of concrete poured to build the 450 m long and 39 m high structure



Imported approximately 232 GWh of lower-cost energy from various regions across eastern Canada and the northeastern United States for the benefit of electricity customers in the province



FISCAL RESPONSIBILITY, TRANSPARENCY, AND ACCOUNTABILITY

INNOVATIVE THINKING AND HARD WORK AT HOLYROOD RESULTS IN MILLIONS SAVED ON TANK RECERTIFICATION

The Holyrood Thermal Generating Station (HTGS) generates between 15 to 25 per cent of the island's electricity each year. In peak production, the plant burns approximately 18,000 barrels of oil per day. To ensure a ready supply of fuel is available, four large tanks near the plant hold about 217,000 barrels of fuel each.

Construction of the storage tanks at Holyrood first began when the plant went into service in 1969. They are now between 40-50 years old, and every 10 years the tanks must be re-certified by the provincial Department of Municipal Affairs and Environment to confirm they are in safe working order and meeting environmental standards. This certifications process is both extensive and expensive—each tank has to be shut down for a period of time to undergo a full inspection (inside and out) and any required maintenance. This involves working in confined spaces and often high-risk environments and normally costs about \$3 to 5 million per tank.

At the end of 2018 and 2019, two of the tanks at Holyrood were due for their 10-year recertification. But with operation of the plant planned only until 2021, Holyrood staff worked to find a more feasible solution to maintain certification of the tanks.

In collaboration with Hydro's Engineering Services and Environment teams, the team at Holyrood hired an experienced tank inspection contractor to complete a full assessment of the condition of the two tanks. Rather than initiate the previously used inspection process for recertification, the contractor used existing engineering data and completed external inspections of the tanks without having to take the tanks out of service. Results of the assessment showed that from an engineering perspective, both tanks could be operated safely and reliably.

Working together, the Holyrood team and the contractor then delivered the findings to the Department of Municipal Affairs and Environment for review and consideration. After their review and follow-up to address questions and concerns, the department confirmed Hydro could continue to operate these two tanks until the end of 2021.

In the end, the effort by the team to find a better solution has paid off. In total, the modified approach cost about \$160,000, avoiding an expense of several million dollars that would have been included in electricity rates.



The Holyrood Thermal Generating Station generates between 15 to 25 per cent of the island's electricity each year.



The surge tanks at Bay d'Espoir stand more than 370 feet above ground and were among the tallest in the world at the time of construction.

REACHING NEW HEIGHTS: DRONE TECHNOLOGY HELPS HYDRO GENERATION MINIMIZE RISKS, REDUCE COSTS AND INCREASE RELIABILITY

Over the past several years, the use of drones has become increasingly popular as a way to capture impressive videos with a bird's eye view. But recently, the Hydro Generation team also put this technology to use in Bay d'Espoir and Grand Falls to safely get a close-up view of our facilities in areas with traditionally limited access—and reduce costs in the process.

While completing planned work on the surge tanks at Bay d'Espoir earlier this summer, it was noticed that the protective cladding on one of the tanks had been damaged. Debris had blown around the surrounding area, creating concerns for both the tank, as well as the potential for material to come in contact with the nearby transmission line. The team knew a more detailed inspection was needed to confirm the extent of the issue, but at 371 feet above ground, the surge tanks are not easy to access. Rather than use a traditional inspection approach of climbing the tanks, the team decided to try something new: conduct the inspection using a drone that had recently been purchased. Although it wasn't common practice, by using the

drone, they were able to confidently see the condition of all three tanks and confirm there was no additional risk of further damage to the cladding.

At Exploits, the team was faced with a similar challenge when inspections were required at some dams in the area. Due to very slippery conditions and safety risks at the sites, manual inspections were extremely difficult. Aerial inspection by helicopter was also not an option, since a helicopter wouldn't be able to get close enough to assess the condition of the structures. The team decided to use a drone, and as a result, they were able to capture quality video to evaluate the dams and assist with plans going forward.

This innovative, out-of-the box thinking by the Hydro Generation team helped minimize safety risks, provided easier access to complete the inspections and saved significant costs over the traditional approach.



EFFICIENCY & EFFECTIVENESS PLAN

Hydro has made a commitment to implement measures to further control business costs, consistent with the mandate to provide least-cost, reliable power to customers. While in recent years Hydro has consistently been seeking and delivering cost efficiencies, in 2019, through the Board of Commissioners of Public Utilities proceedings on Rate Mitigation, we identified specific strategic and structural areas for immediate focus that are expected to drive sustainable cost reductions into the future. The Efficiency and Effectiveness Plan (EEP) is a program which considers these specific areas:

- Work management and execution
- Operational technology advances
- Exploits operations
- Capital planning
- Contracting and procurement
- Human resource management

The program will include short-term and long-term changes that will achieve cost savings by ensuring the business operates efficiently and effectively, now and into the future. Most importantly, these changes will be fostered by a robust change management program that will be critical in making these changes successful in the long term. The EEP Plan builds on the previous Innovation and Productivity (I&P) program that was prominent at Hydro from 2017 into 2019. This program was instrumental in creating a culture of cost savings within the company and focused on seeking ideas from employees. The ideas from the I&P program helped identify the six larger focus areas that are now the current EEP initiative.

IMPLEMENTING THE ENTERPRISE RISK MANAGEMENT FRAMEWORK

Our Enterprise Risk Management Framework considers risks to our strategic and other business plans. The framework is adopted to ensure that risks against key objectives are identified, discussed and appropriately managed. This supports the achievement of objectives (including those relating to sustainable operations) under our five business goals: safety and health, environment, business excellence, people and community.

In 2019, efforts continued to enhance board level risk reporting and to establish effective risk committees in each of Nalcor's divisions. Risks to many of the sustainability initiatives presented in this report are now tabled and discussed regularly with our board of directors, as well as senior leadership teams. The framework focuses on removing barriers and effectively managing risks, making it more likely that our business goals will be achieved.



CLIMATE CHANGE RISK ASSESSMENT OF ASSETS



Second on the left: Marion Organ, Senior Manager, Environment and Sustainability, Nalcor Energy, sits on the Climate Change Adaption Panel for Building Climate Resilience: Infrastructure Design and Planning with Uncertainty.

In 2019, we continued efforts to advance climate change mitigation and adaptation. One of the key initiatives for the year was the development of goals, objectives and a work plan to address the priority risks that had been identified in 2018.

The Climate Change Adaptation working group has identified the following goals and objectives for climate change adaptation and mitigation which have been incorporated into a five year plan:

Goal

Objectives

Improve awareness and understanding of climate change

- Increase awareness and engagement
- Improve technical expertise and knowledge on climate change adaptation

Increase understanding of predicted/potential climate change effects

- Assess flood risk to infrastructure
- Assess risk to access infrastructure
- Assess risk to infrastructure from coastal erosion and sea level rise
- Improve meteorological monitoring and forecasting for ice formation and potential effects on transmission lines
- Improve meteorological monitoring and forecasting for wind
- Update hydrological modelling to consider climate change effects

Incorporate Climate Change Adaptation and Mitigation (CCMA) into planning

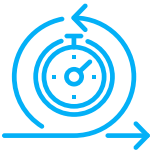
- Include CCMA in corporate planning
- Include consideration of CCMA into project design and planning
- Include consideration of CCMA into asset management

Improve infrastructure resiliency

- Improve resiliency of access infrastructure
- Improve flood resiliency infrastructure
- Improve wind resiliency of infrastructure
- Ensure readiness for extreme weather events

Energy efficiency

- Energy conservation and demand management
- Support of Gov NL Low Carbon Economy
- Electrification of transportation



LIFE CYCLE APPROACH TO CAPITAL PROJECTS



A transformer at the Twin Falls plant which has been removed and sent for disposal at an approved PCB disposal facility.

Our commitment to a life cycle approach to planning and engineering, design, procurement and execution is embedded under sustainability in the Environmental Policy and Guiding Principles. This is achieved through a systematic approach that includes assessing each stage of project development, design and management and identifies where we may have the most control or influence.

Activities identified for a project may then be evaluated based on their potential impact to the environment. For activities that have a higher risk, operational controls will be identified to mitigate those impacts. Finally, Environmental Management Plans (EMPs) may be developed for more complex or multi-year projects. EMPs may include regulatory guidance, best practices and the request or verification of documentation and allow us to ensure continuous environmental management throughout the life of the project.

Implementing a life cycle approach to our capital projects continues to improve not only our execution of projects, but also allows us to continually improve our processes for planning and project management. Through the application of a life cycle

approach we find opportunity at every stage—from planning and designs that incorporate climate change adaption strategies to assessing the purchase of materials for opportunities that can find more environmentally friendly alternatives.

A life cycle approach can also effectively break down project complexity and preemptively address issues that may have long term implications such as costs, or result in legacy issues like contamination.

One area where we are utilizing this approach is the Churchill Falls Switchyard Program. The project managers ensure that the PCB contaminated equipment and oil being taken out of service go to a certified disposal facility. All applicable paperwork is completed to ensure tracking and documenting of the PCB wastes from our site until after it is properly destroyed. The older electrical equipment and transformer oil is replaced with non-PCB materials.



RELIABILITY



The Energy Control Centre (ECC) is the operation hub for the province's electricity network.

INDUSTRIAL CYBER ATTACKS ON POWER GRIDS

Cyber attackers have long been targeting business applications such as email systems, information records and digital files. With the modernization of industrial systems there is a global increase in sophisticated cyber attack groups launching attacks against industrial control systems like electric power grids. These attacks attempt to disrupt power generation, transmission and distribution stations to cause blackouts or physically damage engineering assets.

Industrial control systems (ICS) are engineering assets focused on real-time systems for physical input values and controlled output physical action. For example, the engineering systems within Hydro, Power Supply and Churchill Falls responsible for power generation, transmission and distribution systems all fall into this category.

Hydro is leveraging specialized cyber-defense training and expanding operational technology systems to continually enhance our industrial cybersecurity program. We also maintain strong collaborative relationships with Canadian utilities and cyber teams in the electric and industrial control system sector to keep up-to-date on emerging cyber threats to power grids for proactive cyber defense.

As modern industrial cyber attacks can affect physical asset functionality, our Industrial Cybersecurity Program directly contributes to the protection of worker safety and the reliability of power system operations.

The program is continuously improved for proactive cyber threat detection and incident response that supports and maintains the safety and reliability of operations. This year brought improvements in several areas of cybersecurity awareness including modern online training material for plant workers to ensure cybersecurity is top of mind, an updated cyber strategy and the use of modern operating technology systems for active cyber threat detection and incident response at the plant level.

BUILDING A RELIABLE TRANSMISSION SYSTEM

The Labrador-Island Link (LIL) was taken offline in mid-2019 to advance the development and commissioning of the software required to operate the LIL across two lines (bipole).

In 2018 and early 2019, the LIL operated over one transmission line (monopole) as an interim step so we could deliver surplus recapture power from Churchill Falls to the island. This electricity powered homes across the island and reduced the amount of power required from the Holyrood plant. It also provided a savings to Hydro customers as it reduced the amount of oil required to run the Holyrood plant.

Providing a high-quality, reliable transmission system remains our top priority. The province's transmission system is currently undergoing its largest change in decades, so it is important we take the necessary time to ensure the new assets are safely and reliably integrated into our electricity system while minimizing potential impacts to customers.



The Soldiers Pond Converter and Terminal Station will be the final step in converting power from Muskrat Falls to be distributed to homes and businesses.



The largest generating unit at Bay d'Espoir undergoes preventative maintenance to ensure long-term reliability.

CAPITAL UPGRADES FOR LONG-TERM RELIABILITY

Hydro completed important capital projects in 2019 to ensure the province's key electricity assets are in reliable operating condition now and into the future.

AN OVERHAUL FOR BAY D'ESPOIR'S BIGGEST UNIT

Unit 7 was originally commissioned in 1977 and, at 154 MW, it's the largest of all seven generating units at the Bay d'Espoir Hydroelectric Generating Facility.

The scheduled work conducted this year was part of Hydro's planned preventative maintenance program to ensure the long-term reliability of the unit and the power plant as a whole. The overhaul involved disassembling the turbine and generator, inspecting, cleaning, performance testing, refurbishing and doing corrective work on various components.

WABUSH TERMINAL STATION UPGRADES

In 2019, Hydro began significant capital improvements at the terminal station in Wabush, a vital part of our electrical system in Labrador, and critical in providing electricity to the residents, businesses and major industrial customers in the region.

Most of the station assets are original equipment installed in the mid-1960s and require refurbishment. Capital upgrades will continue in 2020, and will provide greater flexibility and improve the reliability of power supply to Labrador West, as well as ensure a safe and reliable working environment for Hydro employees.

BREAKER REPLACEMENT

Hydro has continued to conduct a multiyear program to replace or refurbish aging breakers. In total, 10 breaker replacements were completed and energized, successfully and safely, which helps ensure Hydro's terminal stations are operating reliably to deliver power to our customers.

WOOD POLE LINE MANAGEMENT

Every year, Hydro inspects and treats more than 2,500 wooden transmission line poles as part of our early detection program. This includes treating deteriorated poles and other power line components to avoid safety and reliability issues, as well as identifying poles in the early stages of decay so that corrective action can be taken. With nearly 26,000 poles spanning approximately 2,500 kms of wooden transmission lines across Newfoundland and Labrador, Hydro's wood pole line management plan helps optimize the service life of lines, saves costs by deferring rebuilds and avoids unplanned outages that could result from damaged structures.

PLANNING FOR TODAY, TOMORROW AND OUR FUTURE

Hydro is always planning to ensure we can deliver reliable electricity to our customers: Newfoundland Power, industrial, direct commercial and residential.

In November, Hydro filed its 2019 annual update to the comprehensive Reliability and Resource Adequacy Study. The original study was filed with the Board of Commissioners of Public Utilities in 2018.

The study addresses our long-term approach to providing continued least-cost reliable service. It considers a wide range of possible scenarios (12 cases in total) over a 10-year planning period from 2020 to 2029. Hydro is committed to a comprehensive approach to planning, including ongoing consultation and public engagement.

The system needs must be well understood, and all options carefully considered, before long-term planning decisions are implemented. Hydro is currently working through the regulatory process with the board review of both the 2018 filing and this annual update with key parties, with the goal of aligning on approval of new planning criteria.



RESPONSIBLE PROCUREMENT AND SUPPLIER DIVERSITY

PROCUREMENT

Promoting participation of Indigenous-owned businesses is a priority for our organization.

The Impact and Benefits Agreement (IBA) with Innu Nation—which was established before the start of construction on the Muskrat Falls Project—identified a number of first-bid opportunities for Innu businesses. Since 2013, over \$600 million in expenditures associated with the development of the Lower Churchill Project has been committed to Innu businesses for the Muskrat Falls Project.

There have been numerous supplier development sessions held with Indigenous procurement organizations throughout the year. These sessions outlined our procurement process and provided an overview of potential business opportunities.

JDE ONLINE REQUISITIONS AND SIGNING AUTHORITY POLICY ROLLOUT

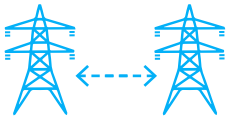
This year we implemented JD Edwards E1 Online Requisitions, which eliminated the manual, paper process for purchasing requisitions, change requests and financial approvals across all lines of business (with the exception of the Lower Churchill Project).

This new rollout is providing a more modern look and feel, an enhanced usability and a faster, more intuitive workflow. It resulted in improved efficiency in many areas of our organization, including automation of select, important processes, reducing reliance on paper and improving security access for end users. It also resulted in simpler and higher-quality methods to obtain data and reports.

We also revised the Signing Authority Policy which provides direction related to financial Signing Authority for authorizations to purchase (Requisitions), contract awards (Approval to Awards), expenditure authority (Direct invoice approvals), Change Orders and Purchasing Exceptions.

Training was provided to those employees who create or approve requisitions.





INTERCONNECTION WITH THE NORTH AMERICAN GRID



PREPARING FOR MUSKRAT FALLS

In advance of the in-service of the LIL and the Muskrat Falls Generating Facility, our energy trading team will continue to work with Hydro to procure off-island energy to displace energy production from the Holyrood Thermal Generating Station, and to optimize the value of the province's storage and production assets.

As the Muskrat Falls Project assets come online the volume of exports our team manages will nearly triple from recent historic levels.

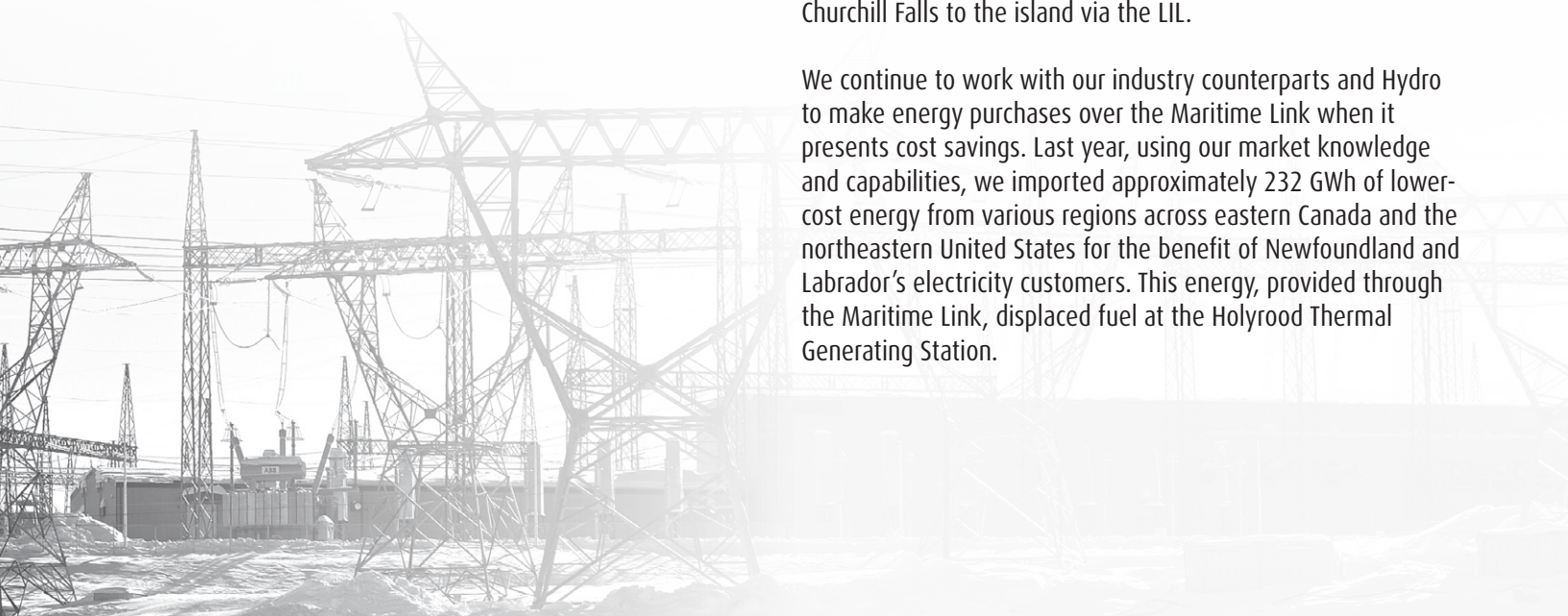
INTERCONNECTION TO THE NORTH AMERICAN GRID AND ENERGY TRADING

Nalcor's energy trading team is continuously pursuing opportunities to optimize the value of the province's surplus electricity by participating in energy markets in eastern Canada and the United States.

In 2019, 95 per cent of available recapture energy from the Churchill Falls Generating Station was delivered to market. This provided 1.189 terawatt hours of energy to customers in New York, New England, Ontario and the Maritimes, and in addition to other energy trading activity, realized revenues of \$36 million.

Our team also works 24/7 alongside Hydro's energy production team to maximize the transfer of low-cost recapture energy to the island for Hydro customers. In the first half of 2019, we transferred approximately 215 GWh of low-cost energy from Churchill Falls to the island via the LIL.

We continue to work with our industry counterparts and Hydro to make energy purchases over the Maritime Link when it presents cost savings. Last year, using our market knowledge and capabilities, we imported approximately 232 GWh of lower-cost energy from various regions across eastern Canada and the northeastern United States for the benefit of Newfoundland and Labrador's electricity customers. This energy, provided through the Maritime Link, displaced fuel at the Holyrood Thermal Generating Station.





GRID/ELECTRICITY PORTFOLIO GROWTH PLAN



Thanks to the hard work and dedication of everyone on the project team, we achieved several major milestones in 2019.

THE POWER OF PEOPLE

Thanks to the hard work and dedication of everyone on the project team, we achieved several major milestones in 2019 and construction is now more than 99 per cent complete. All dams are in operation, the reservoir has been created, all required concrete has been poured and we successfully delivered electricity from Labrador to the island over the LIL.

Early in the year, the North Dam was completed by Barnard Pennecon and put into operation. Built over two construction seasons, approximately 243,000 m³ of concrete was poured to build the 450 m long and 39 m high structure.

In early August, with the North Dam in operation, we started raising the water level in the reservoir and by early September we reached the final operating level of around 39 m.

In the powerhouse, two of the four turbine and generator units were installed. With these two units in place, Andritz Hydro is completing its work in preparation for turning Unit 1 to generate first power. Work continues with the assembly and installation of the third and fourth turbine and generator units. Barnard Pennecon, contracted to complete the civil works, made significant progress completing all of the remaining concrete in the powerhouse and the spillway. With the last concrete poured in 2019, a total of 680,000 m³ of concrete was placed to build the generation facility.

All of our 2019 accomplishments are a result of a tremendous team effort from our skilled workers, contractors, Trades NL and our engineering and construction management teams.





Our people are the foundation of our company, and together, we are creating an inclusive and diverse workforce that enables everyone to feel comfortable and engaged at work. We are committed to taking action to make sustainable progress in everything we do and everywhere we operate.

PEOPLE

PRIORITIES

- Diversity and inclusion
- Employee engagement
- Attraction and retention



Profiled the theme “Bring Your Whole Self to Work” throughout various D&I events and initiatives



Awarded six, \$1,500 scholarships to women from across the province through the 2019 Women in Trades & Technology Scholarship Program with the Women in Resource Development Corporation



Continued efforts to attract and retain women in leadership, operations and engineering positions and supported their advancement in these roles



New supervisors participated in a 12-day program to develop fundamental leadership and supervisory skills



77.5 per cent response rate in our employee engagement survey



DIVERSITY AND INCLUSION



CELEBRATING DIVERSITY AND INCLUSION

As part of our commitment to diversity and inclusion (D&I), we recognize a variety of initiatives throughout the year that focus on raising awareness about diverse groups and celebrating D&I. Some of these D&I calendar days include Multiculturalism Day, National Indigenous Peoples Day and International Day of Persons with Disabilities.

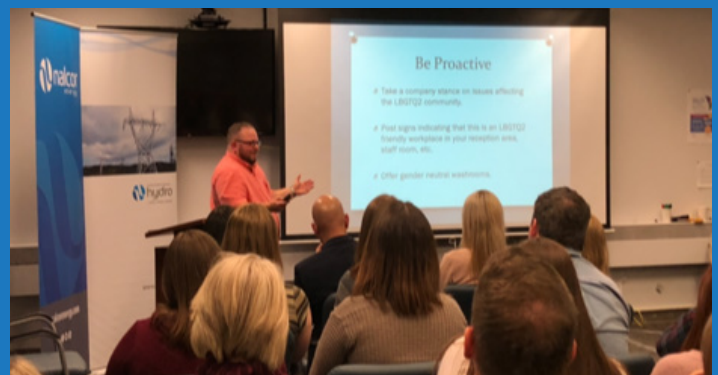
PRIDE ACROSS THE PROVINCE

In July, we celebrated Pride Week in communities throughout the province. We raised the Pride flag at Hydro Place and other regional offices and rainbow benches were installed at both Hydro Place and the Holyrood plant. The company also partnered with Eric G. Lambert School's Gay-Straight Alliance group on a community initiative in Churchill Falls to paint rainbow picnic tables. The picnic tables were placed throughout the community and will remain as a demonstration of support for the LGBTQ2S+ community that continues beyond Pride Week.

BRING YOUR WHOLE SELF TO WORK

In 2019, Nalcor and Hydro profiled the theme "Bring Your Whole Self to Work" throughout various D&I events and initiatives. Held in October, our second annual D&I Day featured two guest speakers and focused on the importance of fostering an environment in which employees feel comfortable bringing all aspects of their identity to work.

Our end-of-year D&I panel event in December, hosted by the D&I Champions Committee and Women's Leadership Network, featured a panel of our employees who self-identify as members of various diverse groups. They shared their perspectives on what it means to bring your whole self to work, and what this concept means to them in the context of their personal backgrounds. We believe hearing and learning from our peers will help us grow and raise awareness.



Top: Hydro employee Jamie Curtis championed the installation of rainbow benches at the entrance of the Holyrood plant.

Middle: Residents of Churchill Falls come together to paint picnic tables for their community to celebrate pride.

Bottom: Gemma Hickey provides an informative session to employees during our second annual D&I Day.



EMPLOYEE ENGAGEMENT

EMPLOYEE ENGAGEMENT SURVEY

We are committed to creating and maintaining a positive work environment to ensure employees feel engaged and valued. Being engaged can look different depending on a number of criteria including your position, your motivation and your work group.

In late 2019, we asked employees to share their perspective about their work experience through an employee engagement survey. Grouped into 28 reporting groups, employees across the organization anonymously responded to questions related to: their job, including aspects such as workload stress and control; their team, such as co-worker relations and recognition; their division, including communication and leadership; and at the organizational levels of engagement, including support for diversity and corporate social responsibility.

Nalcor and Hydro had an extremely positive response rate at 77.5 per cent. Such a strong response rate helps ensure representative results across the organization. This tool is an effective means of communication from employees in all areas of the organization about their work experience and relationship with the organization and will allow the company to impact change in some areas of response when these items are actioned throughout 2020.



ATTRACTION AND RETENTION

TALENT MANAGEMENT

We have a talent management framework in place to attract and retain employees. Our recruitment and onboarding strategies are designed to promote employee retention and early engagement in our corporate culture so that employees are strongly committed to our success and future direction.

We use multiple delivery formats for our training and development programs to appeal to all employee needs. In 2019, we supported various leadership development programs. New supervisors participated in a twelve day program to develop fundamental leadership and supervisory skills. Another group of early- to mid-career employees in Women in Science, Engineering, Trades and Technology (WinSETT) attended a leadership program.

Online learning opportunities continued to grow in 2019, including new course offerings for our online training platform and featured webinars from partner organizations and professional groups. To further support employees, the Developmental Performance Review process required all non-union employees to develop work plans that were aligned with our overall business strategies. Mid-year and annual reviews helped ensure employees were supported in achieving their goals and objectives through meaningful engagement with their immediate supervisor.





Left: Recruitment Coordinator with Hydro HR (far left) awards two Trades & Technology Scholarships for Women at the CNA campus in Seal Cove.

Middle: Hydro employees Julie Quirke, Meghan Couves and Samantha Tobin led a group of students on a tour of the Holyrood Thermal Generating Plant as part of the 2019 Techsploration program.

Right: Kate Flynn completed her work term through the Empowering Futures Program.

HELPING WOMEN PURSUE CAREERS IN TRADES AND TECHNOLOGY

Hydro strives to create a work environment that represents the communities in which we live and work. We believe a diverse workforce is key to our success in meeting our customers' expectations.

That's why we are proud to continue our partnership with organizations like the Women in Resource Development Council (WRDC)—supporting initiatives that raise awareness of the boundless career opportunities available to women in the fields of trades and technology.

In 2019, Hydro was honoured to participate in Techsploration, a program that helps grade nine girls explore careers in science, technology, engineering and math (STEM). A team of Hydro employees mentored a group of students from St. Peter's Junior High in Mount Pearl. For two months, mentors provided insight and organized interactive learning activities to help participants explore the many exciting careers available in the electricity industry.

While those students are still considering their career path, we know that many who are ready to embark on training and education in their fields can find it financially challenging.

Through the 2019 Women in Trades & Technology Scholarship Program, Hydro and WRDC awarded six \$1,500 scholarships to women from across the province.

The scholarships were designed to help ease the financial challenges that full-time, female students can face during their first-year studies in trades and technology programs.

EMPOWERING OUR FUTURE WORKFORCE

In 2018, as part of Nalcor's long-standing commitment to provide meaningful work opportunities for co-op students, we began participating in the Electricity Human Resources Canada (EHRC) Empowering Futures program, a work-integrated learning program for students in the electricity industry. The program provides support for employing students in science, technology, engineering, arts and mathematics (STEAM), as well as business roles, including a focus on students from under-represented groups.

Students hired through the Empowering Futures Program counted for 18 of the 43 co-op students we hired through multiple lines of business in 2019.

GENDER EQUITY TARGETS

In 2019, we continued our efforts to attract and retain women in leadership, operations and engineering positions and supported their advancement in these roles. Fostering a work environment that supports women in under-represented roles is crucial to the success of our organization.

OCCUPATIONAL GROUP	WOMEN				
	2016	2017	2018	2019	TARGETS
Executive	15%	15%	24%	30%	30%
Management	27%	32%	33%	34%	35%
Engineers (including Engineers in Training)	24%	21%	21%	22%	30%
Technicians and Technologists	5%	6%	6%	7%	10%
Field Supervisors	3%	5%	5%	5%	6%
Skilled Trades (including Apprentices)	2%	4%	6%	6%	10%
Manual Workers	16%	16%	17%	19%	20%

*Notes: Includes Nalcor Energy and subsidiaries representation as of December 2019.



Giving back to our communities is a critical part of who we are as employees and as a company. Through our Community Investment Program (CIP), Nalcor and Hydro support registered not-for-profit organizations with donations, volunteer hours and in-kind work and contributions. Being an engaged, valued corporate citizen is a priority for us and we are delighted to work with and support organizations across our province.

COMMUNITY

PRIORITIES

- Community investment program
- Economic impact
- Customer satisfaction
- Stakeholder engagement and indigenous partnerships



More than 650 Newfoundlanders and Labradorians signed up to participate in Hydro's Electricity Feedback Panel



Hydro's commercial customer satisfaction survey returned a score of 83 per cent of overall satisfaction



Implemented a Stakeholder Database to track and manage our stakeholder interactions



Continued to support organizations in the communities where we live and operate throughout the province






Participated in over 60 meetings/sessions with Indigenous governments, organizations and individuals to ensure open communications and meaningful engagement



COMMUNITY INVESTMENT PROGRAM

COMMUNITY OF GIVING

Nalcor and Hydro have created a community of giving throughout our company and across all regions of our province. These are some of the organizations we supported and how it's impacted communities.

LEADERSHIP & ANTI-BULLYING	Canadian Red Cross 25,000 children, youth and community members accessed mental health training	
DIVERSITY & INCLUSION	Choices For Youth 86 mothers and 110 children participated in the Momma Moments program	YWCA Supported Power of One youth conference and the Women of Distinction Awards
STEM & EDUCATION	Techsploration Mentored grade nine girls, exploring careers in science, technology, engineering and math (STEM)	Post-Secondary <ul style="list-style-type: none"> Supported students at Memorial University and CNA Provided annual scholarships for children/dependents of Nalcor and Hydro employees
CHILD/YOUTH HEALTH & SAFETY	Ronald McDonald House <ul style="list-style-type: none"> Sponsored the Red Shoe Crew Walk which raised over \$256,000 Adopted two rooms at the house Employees volunteered to help deliver programs and services for families 	Canadian Cancer Society Supported Camp Delight, a camp for children impacted by childhood cancer
ENVIRONMENT	Indian Bay Ecosystem Corporation Supported the 709 Watershed podcast, dedicated to discussion about local, provincial and national environmental issues	Petty Harbour Mini Aquarium Continued to support educational outreach programs
 EMPLOYEE VOLUNTEERISM  IN-KIND DONATIONS  MONETARY DONATIONS	COMING TOGETHER FOR OUR COMMUNITIES Throughout the year we give back to numerous organizations through donations and employees volunteer their time. Some of the initiatives we are honoured to support include: <ul style="list-style-type: none"> Employees spend one Friday every month preparing and serving hot meals to guests at Jimmy Pratt Soup Kitchen. Food security, through donations to Bridges to Hope, Stella's Circle, provincial food banks and \$10,000 to CFSA following the fire at their main distribution centre. Continued support for the Labrador Wellness Centre, Labrador Friendship Centre, CBC Labrador Turkey Drive and the Labrador Winter Games. 	

BAY ST. GEORGE AREA GREEN TEAM

In 2019, the Bay St. George Area Development Association (BSGADA) Green Team—with generous support from Hydro—worked on the development of habitat restoration plans and river restoration activities throughout the Bay St. George river system. The team conducted habitat assessments on Robinsons River, Crabbes River and Fischells River, to identify natural or manmade obstructions/barriers affecting salmon passage. The types of obstructions identified included beaver dams, woody debris, damaged culverts, bridges, etc.

The team assisted BSGADA committee members and volunteers with the removal of obstructions on Flat Bay Brook (and tributaries), Middle Barachois Brook and Little Barachois Brook, as outlined in the 2018 Habitat Improvement/Conservation Plan. The removal of these obstructions will support healthier fish populations in these river systems.

Throughout the summer, the Green Team also conducted a variety of Environmental Awareness Events with people of all ages throughout the region. The topics included climate change, water conservation, composting and waste management and educating the public about their project. The team reached a total of 183 people through five events.

Hydro's partnership offered an exceptional and unique experience to four young people in our province, while supporting crucial and meaningful conservation work.

Team Member Dawn Quilty said of her experience, "It was so fun! This job has given me so much information about the importance of our rivers and the fish in them and so many experiences that will help me as I choose my post-secondary education and career path over the next couple of years!"



Members of the Bay St. George Area Green Team.

ECONOMIC IMPACT

INDIGENOUS EMPLOYMENT ON THE MUSKRAT FALLS PROJECT

In 2010, the Labrador Aboriginal Training Partnership (LATP) was established to support education and training initiatives to help Labrador Indigenous people gain the skills and qualifications needed for employment opportunities with the Muskrat Falls project.

Workers who identified as Indigenous have filled more than 2,500 positions and worked almost five million hours on the Muskrat Falls Project since January 2013. This accounts for approximately 10 per cent of the total hours worked since the start of construction and 12 per cent of the hours worked in Labrador. Indigenous people worked in all areas of the Project, filling positions in administration and project support, labour and trades, engineering and professional occupations as well as management and supervisor roles.

In addition to having an Innu Employment and Training coordinator and Innu Liaison on hand to assist in job coaching activities, we have had dedicated resources to assist contractors and unions with identifying qualified Indigenous candidates for available opportunities and—where possible—make the connections for Indigenous people to participate in a subsidized work term or placement. As well, all workers employed on the Project receive Innu Cultural Awareness Orientation.

As the Muskrat Falls Project moves into the operation phase, we continue to work with Indigenous governments and organizations to optimize Indigenous employment opportunities. We are working towards the goal of optimizing Indigenous employment in all lines of business.



CUSTOMER SATISFACTION



The awards were accepted by the Hydro Communications team at an event in St. John's on June 26, 2019.

HYDRO RECOGNIZED FOR INNOVATIVE APPROACH TO CUSTOMER RESEARCH AND COMMUNICATION

Over the past few years, Hydro has been making an extra effort to tell more stories and to develop information that is meaningful and useful for customers. It's important that electricity customers are able to learn more about the work Hydro is doing, but it's also important they have opportunities to share their opinion.

In late June, Hydro received three awards from the provincial chapter of the International Association of Business Communicators (IABC) for its efforts to improve communication and engagement with customers.

One award for research innovation and another for excellence in community relations recognized Hydro's approach to engagement and consultation with customers as part of the Supply Adequacy and Reliability Study. The project included the development of an online customer panel that includes a series of information, videos and follow-up questions that explore customer expectations for reliability, the balance between cost and reliability and customer options.

An award for customer relations, recognized Hydro's overall communications strategy and series of educational digital content designed to connect customers to their business.

2019 CUSTOMER SATISFACTION SURVEY

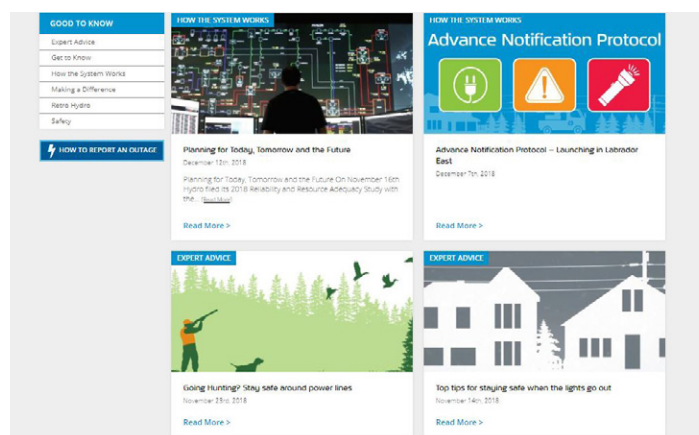
Each year Hydro works with an external partner to conduct a detailed customer satisfaction survey, alternating each year between two specific target audiences: residential and commercial customers. The commercial customer satisfaction survey was conducted in late 2019 and returned a score of 83 per cent overall satisfaction. The last residential customer survey, conducted in 2018, resulted in a score of 89 per cent. Respondents in both surveys provided very positive feedback on Hydro's delivery of customer service and reliability of the electrical system.

Hydro also conducts much shorter transactional surveys throughout the year with anyone who reaches out to the Contact Center. These results also consistently show positive results, with 85 per cent of respondents indicating their satisfaction with their recent interaction with the company in the final quarter of 2019.

GOOD TO KNOW INFORMATION – NOW ALL IN ONE PLACE

Throughout 2019, Hydro began making an extra effort to tell more stories and to develop information that is significant and valuable for customers. In other words, sharing things that are generally "good to know". The Hydro website has a central place to showcase these stories and pieces of customer and system information. The content has been broken down into several different categories including expert advice, get to know, how the system works, making a difference, safety and retro Hydro.

All of this information can be found online (nlhydro.com) by clicking on one of the featured stories on the front page or on the 'Good to Know' title in the web header.





STAKEHOLDER ENGAGEMENT AND INDIGENOUS PARTNERSHIPS



INVOLVING OUR CUSTOMERS

As Hydro continues to plan for the future and make decisions that meet the expectations of our customers, we are actively seeking input from electricity consumers in the province.

Through our Electricity Feedback Panel, customers provide opinions and feedback by participating in online surveys on a variety of subjects. In 2019, Hydro used the panel to gain insight and information from customers on topics such as the type of information customers would like to hear more about, how best to communicate with customers and thoughts on electric vehicle adoption in the province.

There are currently more than 650 Newfoundlanders and Labradorians who have signed up to participate in the panel. Consumers are encouraged to sign up at ElectricityFeedbackNL.com.

STAKEHOLDER DATABASE

Stakeholders are an important audience and there are frequent and ongoing interactions with external stakeholders by departments including environment, communications, safety and health, human resources, supply chain, customer care and energy efficiency and Indigenous benefits and stakeholder relations.

Our stakeholders range from federal, provincial, municipal governments and Indigenous groups, to environmental non-governmental organizations (ENGOS) and community groups. The relationship between key business goals and the social license to operate are recognized and incorporated into our approach to these external partnerships.

Stakeholders are considered when developing our Environmental Management System (EMS) and advancing our sustainability objectives. We actively engage stakeholders in achieving our sustainability priorities in areas where our stakeholders are key influencers. These priorities are developed based on stakeholder input and become the focus of our targets and objectives under our Sustainability Strategy.

We have developed a Stakeholder Database to enable us to track and manage our stakeholder interactions. It contains content on individual stakeholders, related engagement activities and commitments. The database enables us to consistently document our interactions, and ensures we are able to follow through with our commitments, meet our deadlines, keep stakeholders informed of areas of interest and generate timely reporting statistics.

RELATIONSHIPS WITH INDIGENOUS GOVERNMENTS, COMMUNITIES AND PEOPLE

We acknowledge our organization operates on the traditional lands of the Indigenous Peoples of Newfoundland and Labrador. Partnerships and positive relationships with Indigenous People are consistently a priority for us.

AGREEMENTS WITH INDIGENOUS GOVERNMENTS

We have agreements in place with both Innu Nation and NunatuKavut Community Council (NCC).

The Lower Churchill Project Impact and Benefits Agreement (IBA) with Innu Nation was signed in 2011 which includes:

- Employment and training participation objectives for construction and operations
- Work place policies and cultural accommodations
- Business participation targets
- A joint Nalcor-Innu environmental management committee responsible for: environmental policies, EMS and consideration of Innu knowledge
- Project royalties

In 2017, Nalcor entered into a six year Community Development Agreement (CDA) with the NCC which includes:

- Direct investment into community capacity and sustainability
- Environmental-related monitoring, reporting and mitigation with respect to the Muskrat Falls Project and the Labrador Transmission Project, as well as the inclusion of NCC Indigenous traditional knowledge
- Initiatives for renewable energy generation
- Workplace environment and cultural accommodations
- Training, employment and business opportunities

Implementation of these agreements is ongoing and is a key consideration on how we conduct our business.

This past year, Indigenous awareness sessions were delivered to multiple lines of business across Nalcor and this will continue into 2020 and beyond. As Indigenous and non-Indigenous individuals work alongside each other this builds our foundation of cultural awareness, which, in turn, results in a greater mutual understanding.

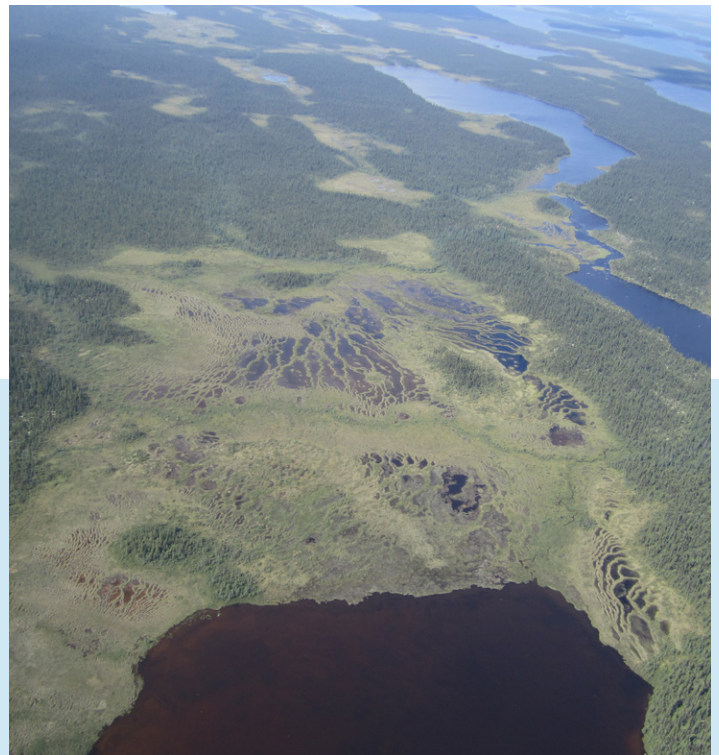
MEANINGFUL ENGAGEMENT

In 2019, we participated in over 60 meetings/sessions with Indigenous governments, organizations, and individuals. These included meetings with our CEO and Indigenous leadership. Open and respectful communication is central to building and sustaining positive beneficial relationships. Our Director of Indigenous Affairs and Community Relations is located in Happy Valley-Goose Bay and this office has provided an effective conduit and meaningful, accessible consultation and communication.

SUPPORTING INDIGENOUS COMMUNITIES

Participating in Indigenous community initiatives is an important part of showing we respect what is important to Indigenous people. We have supported numerous Indigenous community events and programs including:

- Annual Elders gathering
- High school graduations in Innu communities
- Donation of a senior's van for the Labrador Friendship Centre



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