Nalcor Energy
Sustainability Report
2017
About this Report

This report describes our efforts to improve our sustainability performance. We have organized the information according to Nalcor and Newfoundland and Labrador Hydro (Hydro) corporate objectives. Consultations with our key stakeholders helped us identify the key areas of interest using a materiality assessment. This tool helped us reflect on our work practices allowing us to measure how well we balance the expectations of our stakeholders and our business, social, economic, and environmental needs.

The appendices of this report document the performance indicators related to sustainability. To learn more about the business and financial activities of 2017 not included in this report, see Nalcor’s 2017 Annual Report, available at www.nalcorenergy.com.
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## OUR SUSTAINABILITY PRIORITIES

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At Nalcor, we come to work every day to safely develop and manage Newfoundland and Labrador’s energy resources on behalf of the people of the province - it is what guides every decision we make.

We understand the work we do has an impact on the communities where we operate. It is our responsibility to minimize this impact and ensure we develop the province's resources in a way that considers safety, environmental stewardship, business excellence, people and the community. Our focus on sustainability helps us assess how our work today will meet the needs of the future.

This past year, we have achieved or exceeded our goals in the many diverse projects happening across the company.

- Reduced emissions – The Lower Churchill Falls Project achieved significant construction milestones, reaching 89% completion. When complete, Muskrat Falls generation will be able to replace current thermal generation resulting in the reduction of one million tonnes of GHG emissions annually.
- Increased reliability – We completed construction of the Labrador Island Transmission Link, which will allow us to deliver energy from Labrador to the island and strengthen the reliability of our electrical grid.
- Increased investment and interest – Our Oil and Gas exploration team saw significant global investment in the province’s offshore oil and gas industry.
- Improved system resilience – Hydro built critical transmission infrastructure to increase system resilience and reliability.

I look forward to continuing to work 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.

As we look ahead and continue our work in 2018, we are committed to talking about both our achievements and challenges in a way that is open, transparent and meaningful to our stakeholders. We hope this report will give you some insight into what we are doing to ensure we create sustainable communities across Newfoundland and Labrador.

Stan Marshall
President and CEO, Nalcor Energy
WHO WE ARE
At Nalcor Energy, the generation and transmission of electrical power is the foundation of our business. We are committed to providing safe, reliable and dependable electricity to our utility, industrial, residential, and commercial customers.

Throughout the company, our dedicated people are building a solid foundation for the future and making a difference in our province.

Our number one priority is safety. As we bring our business to the next level, our goal is always achieving excellence in safety performance.

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 the province.

Our values shape how we do business every day.

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 help us develop a culture based on high standards and expectations. We are empowered to challenge assumptions and to seize new opportunities while realizing our corporate vision.
Corporate Profile

NEWFOUNDLAND AND LABRADOR HYDRO
Hydro manages Newfoundland and Labrador’s electricity system. Through generation, transmission and distribution operations, Hydro’s goal is to meet the needs of customers and provide safe, reliable power to residents, businesses and communities across the province.

CHURCHILL FALLS
One of the world’s largest underground hydroelectric powerhouses with a rated capacity of 5,428 megawatts; Churchill Falls provides clean, renewable electricity to millions of consumers across North America.

LOWER CHURCHILL PROJECT
The Lower Churchill River is one of the most attractive 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.

ENERGY MARKETING
Nalcor actively trades and sells the province’s surplus power to customers in external energy markets. The Energy Marketing portfolio includes Churchill Falls recall power and long-term transmission agreements through Québec.

BULL ARM
Atlantic Canada’s largest fabrication site is located in Bull Arm, Newfoundland. The site’s magnitude, diversity of infrastructure, and strategic location offer a unique opportunity for fabrication, concrete construction, deep water commissioning, marine operations, and supply servicing.

OIL AND GAS
Nalcor is a partner in the development of the Newfoundland and Labrador offshore including the Hebron oil field, White Rose Growth Project, and Hibernia Southern Extension. With a multi-year exploration strategy, Nalcor is systematically finding and quantifying the province’s oil and gas resource potential to facilitate new exploration investments.
CODE OF BUSINESS CONDUCT AND ETHICS
At Nalcor, our work environment is based on trust and respect; this means 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 the company’s commitment to professional and ethical business practices in how it guides our board of directors and our employees in all Nalcor Energy companies.

We also ensure we maintain the highest possible standards of business conduct and ethics in our relationships with all parties with whom we conduct business on either a commercial or non-commercial basis. 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
- to avoid any business practices or conflicts of interest which have 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, both Nalcor and Hydro have experienced significant transition and growth. As a Crown Corporation, Nalcor is accountable to the provincial government (Shareholder) and the people of our province.

The Shareholder has appointed a Board of Directors for Nalcor to oversee the management of the company. The Nalcor Board and the 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 which meet regularly. They are: Audit; Governance; Safety, Health, Environment and Community; and Human Resources and Compensation.

OUR SUSTAINABILITY JOURNEY
The foundation of a sustainable approach is balancing how we do our business in meeting the needs of the current generation without compromising the needs of future generations. The concept of sustainability is overarching and ties together all aspects of our mandate, not just the environmental or commercial considerations. Sustainability addresses the broad view, which brings together economic growth and development with social responsibility. We cannot act in one area without influencing outcomes in another.

We began building our sustainability strategy in 2015 when our senior leadership team recognized the need for a clearly articulated sustainability vision. We connected with our stakeholders to help identify the primary issues we would need to focus on in the future. Throughout 2016, we developed the priorities and objectives that would encompass our sustainability strategy.

In 2017, we began implementing the strategy, which defines our goals for the environment, safety and health, community, and people within our own sustainability framework. We use this framework to drive performance and manage our risks accordingly.

Nalcor and its subsidiary company, Hydro, are members of the Canadian Electricity Association (CEA). Through the CEA’s Sustainable Electricity Program, Nalcor and Hydro have committed to improve their overall sustainable development performance and report to stakeholders in a timely and transparent manner.

To do this, we are committing to communicate and share our progress on our sustainability priorities with our stakeholders via this annual report.

“For our employees, sustainability is about keeping each other safe, protecting the environment, investing in our communities and ensuring our workplace is diverse, inclusive and engaging.”

Mike Roberts
Chief HR Officer and VP Safety, Health and Sustainability
SUSTAINABILITY GOVERNANCE
In 2017, we created a Nalcor Sustainability Steering Committee to drive the implementation of strategic sustainability initiatives aligned with Nalcor’s goals and targets. Committee members represent each of the five sustainability themes related to environment, health and safety, employees, community, and operations.

The Sustainability Steering Committee meets quarterly to review the company’s performance against its 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 reports on performance to the senior leadership teams at quarterly meetings, and they provide updates to the Safety, Health, Environment and Community Committee of the Board of Directors.

NALCOR RECEIVES CEA SUSTAINABLE ELECTRICITY AWARD
In November 2017, the Canadian Electricity Association (CEA) recognized our efforts with its Sustainable Electricity Award for our work on developing an integrated approach to sustainability.

The award recognizes a company that has:

• demonstrated outstanding leadership in the development, implementation, and maintenance of an integrated sustainability strategy within the company; and

• demonstrated how environmental, social and economic elements are integrated in company decision-making and how this has led to improvement in sustainability performance.

“Achieving a national CEA award for our sustainability efforts is the result of the dedication and hard work of our employees. We are proud of the work we do, and being recognized in this way gives us the confidence that we are on the right track with creating a more sustainable Newfoundland and Labrador.”

Marion Organ, Senior Manager of Environment and Sustainability
Nalcor Energy Sustainability Policy

At the heart of Nalcor’s business is our people 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.

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

Nalcor is committed to providing a timely review of sustainable business operating procedures and practices. We commit to track, measure and report on our performance of the implementation of sustainability practices with a commitment of continual improvement 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 strikes an appropriate balance between needs of current and future generations.

• Actively 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; and

• 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
- Improving Safety Performance and Safety Culture
- Public Safety

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
- Reliability
- Lifecycle Approach to Capital Projects
- Responsible Procurement/Supplier Diversity
- Interconnection with the North American 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
OUR SUSTAINABILITY PRIORITIES

SAFETY AND HEALTH

PRIORITIES

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

The safety of our people is our top priority and it is the measure of success that matters the most.

BY THE NUMBERS

The safety of our people is our top priority; it is the measure of success that matters the most.

- **9% reduction** in recordable injuries over 2016
- **Zero lost time injuries** maintained in several areas
- **All injury/illness frequency rate** (injuries per 200,000 exposure hours)
  - Goal 0.60  Result 0.72
- **Lost-time injury frequency rate** (lost-time injuries per 200,000 exposure hours)
  - Goal 0.15  Result 0.08
- **Lead/Lag ratio**
  - Goal 750:1  Result 1042:1
Safety is our number one goal. Our commitment to safety excellence is embedded in our policies, practices and in how we communicate with one another. Our robust safety program supports and encourages our people to renew their commitment to working safely every day when they come to work. We also emphasize the safety of contractors and the public through customized safety programs and communications.

Our safety excellence framework ensures our safety initiatives are built on leadership, technically-sound and best-in-class safety processes, procedures and equipment, competence, supportive culture, union-management alignment, responsibility and reporting. All safety and health aspects are managed within a safety management system which follows the ISO 45001 standard.

**OCCUPATIONAL HEALTH AND WELLNESS**

Occupational health and wellness is an important component of our safety programming. When we address wellness issues, we include both physical and mental wellness as maintaining mental health is a core focus.

Mental health awareness is a very important component of our safety programming as we promote and encourage our strong and inclusive safety culture. We want our employees to be comfortable talking about mental health. We promote awareness and encourage employees to connect with our support services if they need help.

At Nalcor, our programs help our employees understand how to support a colleague, friend or family member effectively when they are struggling with mental health issues. We understand the importance of recognizing, supporting and managing mental health in our workplaces and this is why we foster a workplace that supports open communication.

In partnership with the Government of Newfoundland and Labrador and the Mental Health Commission of Canada, we offer a program called The Working Mind. This education-based program is designed to dispel the myths surrounding mental illness while providing employees with the tools and strategies to assess and manage their own mental health. We have trained several of our employees to deliver this program; we have also trained managers and supervisors to help them recognize when someone could be struggling with a mental health-related illness and to provide help before it reaches the crisis stage.

In addition to these mental health initiatives, many of our employees participated in our Wellness Works program. This program provides employees with a variety of tools and services to support health and wellness including reimbursement of costs associated with physical activities, flu shot clinics, massage therapy, and smoking cessation.

**CORPORATE EMERGENCY RESPONSE**

Ensuring the safety and wellbeing of our employees, contractors, and the public is a priority for Nalcor. We have an established Corporate Emergency Response Plan (CERP) which allows us to respond quickly and effectively in case of emergency.

To support our CERP team, we have created a schedule of exercises to test team preparedness, response, and communications in a learning environment.
SAFETY AND HEALTH

“In 2017, we partnered with the communities of Upper Lake Melville to implement a Mass Emergency Notification System to reach their respective communities in case of an emergency. Four communities – Happy Valley-Goose Bay, Mud Lake, North West River and Sheshatshiu – will be using this system to keep residents safe in all types of emergency events.

Nalcor also partnered with the provincial department of Municipal Affairs and Environment (Water Resources Management Division) to install additional water monitoring stations on the Churchill River. We share information from our operations, including outflows from the Churchill Falls Generating Station and the results of ice monitoring. The Water Resources Management Division will use this information to improve flood forecasting in the Upper Lake Melville Area.

IMPROVING SAFETY PERFORMANCE
To improve, achieve, and sustain best-in-class safety performance, we monitor and manage safety and health programs, processes and procedures to ensure continual improvement while taking a personal and proactive approach to injury prevention.

We use safety programs and communications to raise awareness on emerging safety concerns and to prevent incidents by educating our staff on our top trending incidents and injuries.

In 2017, we saw a 9% decrease in medical treatment and lost time injuries, and a 27% decrease in high potential incidents over 2016.

We use several tools to monitor and measure compliance to internal safety and health programs and processes, and legal compliance. We also measure performance against established objectives and initiatives.

PUBLIC SAFETY
While employee safety is a priority for us, we never lose sight of the importance of public safety around our facilities and infrastructure. In 2017, Hydro continued its partnership with Newfoundland Power, the Newfoundland and Labrador Construction Safety Association, and Workplace NL in an ongoing campaign promoting power line safety to the public, heavy equipment operators, and contractors.

Our power line safety public awareness activities have focused on: safety hazards while snowmobiling or off-roading with ATVs near lines and guy-wires; potential line contacts by heavy equipment operators; and hazards surrounding residential digging or tree trimming.

“Our goal is to provide a positive working environment where consideration for the mental well-being of employees is woven into the fabric of our organization.”

Steve Tilley
Manager, Safety and Health
We are also implementing safety enhancements around dams using the Canadian Dam Association guidelines. We assess our dams regularly for public safety risks. We complete spring and fall inspections of dam stability and carry out surveys to establish capital programs and to enhance preventive maintenance strategies. We also issue public notices and conduct community engagement events throughout the province to improve awareness about dam and river safety hazards.

In 2017, we undertook specific capital projects to address public safety around our facilities in Churchill Falls. We completed the design of the public safety booms and buoys for the tailrace. We expect to complete these capital works in 2018.

In Bishops Falls, Hydro has been working on a series of capital projects since 2013. The team has completed engineering and some construction to delineate the hazardous areas on and near the Exploits River and the plant itself.

In 2017, as part of this project, Hydro began work on several safety enhancements, including:

- Installation of warning signs and fencing in the upstream and downstream (tailrace) hazardous areas on both sides of the Exploits River and on the dam itself;
- Installation of a safety boom and hazard buoys in the upstream hazardous area;
- Installation of hazard buoys in the downstream (tailrace) hazardous area;
- Supply and installation of a warning horn on the dam spillway and;
- A stakeholder engagement and communications plan to educate the public on the dangers around dams.

In 2017 Hydro developed a customer education campaign called Good to Know which focuses on promotion of power outage safety, power outage preparedness, and other important public safety topics. Good to Know is a digital campaign using social media networks and Hydro’s website to share helpful information with customers and stakeholders throughout Newfoundland and Labrador.
OUR SUSTAINABILITY PRIORITIES

ENVIRONMENT

PRIORITIES
EMS Improvement and Expansion
Climate Change Mitigation
Energy Use and Energy Savings
Emission Reduction
Renewable Energy in Isolated Communities

Nalcor understands that our daily operations impact the communities in which we operate. We work everyday to minimize our impact and ensure that we develop our resources in a sustainable way.

BY THE NUMBERS

100 per cent of environmental management system targets achieved

Helped Hydro customers reduce electricity use by 2,631 MWh through the takeCHARGE energy efficiency programs

As part of a multi-year initiative, we replaced 75 older and poor condition transformers in Hydro’s Transmission and Rural Operations regions

Completed more than 2,600 daily environmental monitoring reports and 11 detailed environmental audits across the Muskrat Falls Project

72% of electricity generated for Hydro’s customers came from clean hydroelectric power on the Island Interconnected System

186 gigawatt hours of clean energy was purchased by Hydro from the Island’s two wind farm projects.

Approximate emissions
Carbon Dioxide Equivalent (CO2e) 1,525,672 tonnes
Nitrogen Oxide (NOX) 4,952 tonnes
Sulphur Dioxide 5,643 tonnes
Every day, our employees across the province help sustain a diverse and healthy environment for Newfoundlanders and Labradorians through the safe and responsible use of our province’s energy resources.

One way we accomplish this work is through our Corporate Environmental Management System. This system helps us develop environmental targets, goals, objectives, and plans to ensure we maintain a high level of environmental compliance, responsibility, and performance. In 2017, we collectively set 117 targets. This year also marks our third consecutive year completing 100% of our targets.

**IMPROVING AND EXPANDING OUR ENVIRONMENTAL MANAGEMENT SYSTEM**

Nalcor has maintained a high standard of environmental management for almost 20 years. Since the late 1990s, we have been registered as an ISO 14001 company. When we set out to improve our Environmental Management System, our goal was to build upon the existing foundation of environmental compliance and pollution prevention to reflect a more holistic approach and to incorporate the principles of sustainability.

Our first step in that process was to revise our environmental policy to reflect our corporate values related to environment and sustainability. This was completed in 2016. In 2017, we completed a gap analysis with respect to the new version of the ISO 14001 Standard. We reorganized the eight existing environmental management systems and consolidated those systems into three: one for Hydro, our regulated utility; one for our unregulated activities (Power Supply); and one as an overarching corporate system. We also incorporated two facilities into the registered Environment Management System which were previously ISO 14001 compliant.

Following a series of workshops held across the organization, we developed a consolidated Environmental Risk and Opportunity Management Plan. This plan addresses how risks and opportunities are identified, evaluated, managed, and measured.
We identified our key stakeholders and updated our database to ensure clear identification of environmental aspects, their significance, and the lifecycle considerations. We also developed and rolled out a new environmental awareness training to all employees. We anticipate all operational assets for Power Supply and Hydro will be ISO 14001:2015 certified by the third quarter of 2018.

**CLIMATE CHANGE MITIGATION**

As an electricity utility, we have a significant role to play in climate change mitigation on a provincial and national level. The provincial government has recognized the importance of monitoring and adapting to climate change effects, and its vision was outlined in the Climate Change Action Plan 2011. This plan states its desire to be “a province that effectively integrates progressive action on climate change into its policy, planning and programs in a way that supports future economic, social and environmental success.” We share the province’s vision, and as the climate changes, we recognize we must adapt and change to.

We have included energy use and savings, emission reduction, and renewable energy in isolated communities as key initiatives in our Climate Change and Mitigation and Adaptation Strategy as they all contribute to climate change mitigation.

**ENERGY USE AND SAVINGS**

Nalcor promotes the use of cost-effective, energy efficient technologies to customers and seeks opportunities to reduce energy use within its own facilities and operations through the adoption of similar technologies and improvements. Reducing the amount of electricity Nalcor uses in its operations means reducing greenhouse gas emissions associated with fossil fuel-based electricity generation, both of which are key contributors to climate change.

In 2017, Hydro completed seven internal energy efficiency projects and one project was completed for our non-regulated utility. These projects not only saved energy for its own operations, but also created improvements to lighting levels, safety and comfort, and reduced maintenance frequency. These internal energy efficiency projects included:

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Savings (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Hope Simpson diesel plant lighting</td>
<td>18</td>
</tr>
<tr>
<td>Menihek diesel plant lighting</td>
<td>17</td>
</tr>
<tr>
<td>St. Anthony diesel plant lighting</td>
<td>80</td>
</tr>
<tr>
<td>Bishops Falls light and heat upgrades</td>
<td>76</td>
</tr>
<tr>
<td>Grey River variable frequency drives on motor</td>
<td>63</td>
</tr>
<tr>
<td>Hydro Generation lighting upgrades</td>
<td>38</td>
</tr>
<tr>
<td>Hydro Place HVAC optimization</td>
<td>112</td>
</tr>
<tr>
<td>Ramea yard lighting retrofit</td>
<td>1</td>
</tr>
</tbody>
</table>

The combined annual energy savings from Nalcor’s internal energy efficiency initiatives in 2017 was 405 MWh.
PARTNERSHIP WITH takeCHARGE
Hydro has shown leadership in the area of energy efficiency and conservation by promoting the use of cost-effective, energy efficient technologies to customers through partnerships with Newfoundland Power and the takeCHARGE Energy Efficiency Program.

takeCHARGE provides energy efficiency awareness and rebate programs to everyone in Newfoundland and Labrador and it currently has more than 30,000 program participants, including over 400 local businesses. The program also provides rebates on select energy efficient products and promotes conservation through public awareness campaigns, such as the takeCHARGE K-I-C START school program.

ISOLATED SYSTEMS COMMUNITY ENERGY EFFICIENCY PROGRAM
The Isolated Systems Energy Efficiency Program provides outreach, education and direct install of energy efficient products to homes and businesses.

Since 2012, this program has trained more than 55 local representatives in Hydro’s 42 remote diesel communities to provide education and complete product installations.

These representatives have installed more than 94,000 energy efficient products in more than 500 businesses and 5,719 homes – saving more than 7 GWh of electricity.

In 2017, 94% of respondents in our follow up satisfaction survey with homes and businesses using this program said they were either satisfied or very satisfied with the program.

“As the primary generator of electricity in Newfoundland and Labrador, we know people are counting on us - our friends, families and neighbours. That includes our responsibility to be stewards of our environment; to protect it, care for it and ensure we can enjoy it for generations to come. We are committed to managing operations to reduce our environmental impact while always providing our customers with safe, reliable electricity.”

Jim Haynes
President, Newfoundland and Labrador Hydro
EMISSION REDUCTION
Nalcor is committed to protecting the environment. We identified reducing emissions from our diesel and thermal generating facilities as a key objective to meeting this goal. To ensure our employees focus on continual improvement in emissions at these facilities, we invested significantly in environmental monitoring programs, operational controls, and fuel changes.

Twenty eight per cent of electricity generated for Hydro’s customers is from thermal generating sources, with the largest being the Holyrood Thermal Generating Plant. The gas turbine in Holyrood is equipped with a water injection system to reduce NOx emissions. Our goal is to maximize hydroelectric production on the island interconnected system to reduce the need for operation of gas turbines.

The Muskrat Falls hydro generating plant, with a completion date expected in 2020, will significantly reduce air emissions, including GHG related gases, making it a key component of our emissions reduction strategy. In 2017, we were proud to report we had reached 89% completion in the construction of the Muskrat Falls project.

Once the project is complete, we will be able to replace thermal generation at Holyrood; this will mean a reduction of one million tonnes of GHG emissions annually. We predict power from Muskrat Falls will displace more than 6 megatonnes of CO₂ emissions annually and will provide clean, renewable energy to help reduce our carbon footprint. With these measures, we anticipate our future energy mix to be 98% renewable.

CLEAN ENERGY FOR RURAL AND REMOTE COMMUNITIES
Although emissions from our diesel plants in Hydro’s remote communities do not contribute much to our overall air emissions output, we identified advancing clean energy initiatives for rural and remote communities as a priority for us and for 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 with the Nunatsiavut Government to access funds under the federal government’s Clean Energy for Rural and Remote Communities Program to deploy a smart grid system in an isolated community currently supplied by diesel generation. This proposal would involve constructing wind and solar generation sources and connecting them to the existing diesel plant through a grid controller. As well, smart metering would be installed to enable study opportunities for load control and reduction. This initiative will also reduce the amount of diesel fuel consumed per kWh of electricity required by the community.
OUR SUSTAINABILITY PRIORITIES

BUSINESS EXCELLENCE

PRIORITIES

- Fiscal Responsibility, Transparency and Accountability
- Reliability
- Climate Change Adaptation
- Integration of a Lifecycle Approach
- Responsible Procurement / Supplier Diversity
- Interconnection with the North American Grid / Electricity Portfolio Growth Plan

Our foundation is built on our principal business: the generation and transmission of electrical power.

BY THE NUMBERS

- Recorded revenues of $930 million, an increase of $106 million over 2016
- Operating profit was $169 million, an increase of $33 million over 2016
- Capital expenditures were $3.4 billion as the company continued to make critical investments in the ongoing construction of the Muskrat Falls Project as well as core electricity assets
- Total assets continued to grow to $18 billion, compared to $14.1 billion in 2016

HYDRO

- To enhance reliability more than 150 projects completed
- Close to 5,000 activities carried out on equipment and facilities
FISCAL RESPONSIBILITY, TRANSPARENCY AND ACCOUNTABILITY

As a Crown corporation, Nalcor acts on behalf of the people of Newfoundland and Labrador. We understand the importance of accountability and transparency to the citizens of this province and we are committed to being open, transparent, and accountable across our operations.

Transparency means making information and data available to our stakeholders, while accountability is recognizing and taking responsibility for our company’s decisions and actions.

Transparency and accountability are a part of every line of business throughout Nalcor. Through our reporting processes and procedures, we ensure accountability and provide due diligence and oversight. As part of the regular business operations, we report to the public, government and stakeholders through various means such as formal reports, a public annual general meeting, and responses to public requests for information as well as public information sessions, open houses and presentations offered throughout the province.

We continue our commitment to public accountability through the following government and regulatory interfaces:

• A presentation of the capital and operating budgets to the Premier and Ministers of Natural Resources and Finance and senior government officials for review and approval

• As a regulated utility, Hydro’s expenditures and investments are subject to full oversight and approval by the Board of Commissioners of Public Utilities (PUB)

• The PUB requires Hydro to submit quarterly/annual reports and comply with rigorous reporting

• The government has the power to audit Nalcor and its processes and the Auditor General has open access to the company

• Nalcor produces an annual Transparency and Accountability Report, a Strategic Plan, and an Annual Report.

SYSTEM MAINTENANCE AND RELIABILITY

Nalcor is focused on its core responsibility to provide electricity to Newfoundlanders and Labradors in a manner which balances safety and reliability with cost effectiveness. We will continue to deliver on our promise to customers today, while managing the evolving needs of tomorrow with an integrated, interconnected electrical system.

Our customers rely on us to provide safe and reliable power. In order to demonstrate our reliability, we have processes to measure the length and number of interruptions in electricity distribution. Hydro uses international standards called SAIDI and SAIFI created by Institute of Electrical Electronics Engineers (IEEE). These indices serve as valuable tools for measuring reliability performance, indicating on average how long interruptions are and how frequently they occur.
The following is the 2017 End Consumer measure as compared to 2016 and 2017 target:

<table>
<thead>
<tr>
<th>RELIABILITY MEASURE</th>
<th>2016 OUTCOME</th>
<th>2017 OUTCOME</th>
<th>2017 TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>End Consumer – NLH/NP Loss of Supply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAIFI</td>
<td>1.30 ibt / cust</td>
<td>1.33 ibt / cust&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.50 ibt / cust</td>
</tr>
<tr>
<td>SAIDI</td>
<td>2.42 hours / cust</td>
<td>2.77 hours / cust&lt;sup&gt;2&lt;/sup&gt;</td>
<td>2.43 hours / cust</td>
</tr>
</tbody>
</table>

1. SAIDI or the System Average Interruption Duration Index is a system index of the average duration of interruption in the power supply indicated in minutes per customer

SAIFI or the System Average Interruption Frequency Index is a system index of the average frequency of interruptions in power supply

2. Data does not include the March windstorm significant event

End User SAIF: 0.44 int/cust. End User SAIDI: 1.29 hours/cust including March windstorm

To ensure reliability, we must invest responsibly to maintain our electricity assets throughout the province.

In 2017, Hydro built critical new transmission infrastructure to increase system resiliency and improve reliability. This included a substantial upgrade to the Bay d’Espoir-to-Avalon Peninsula transmission corridor with the completion of a new high voltage line, as well as the ongoing construction of a transmission line from the Hardwoods terminal station to Soldiers Pond. With this new transmission asset, we have greatly increased capacity on the Avalon Peninsula – making the province’s electricity system, and our ability to serve our customers, stronger and more reliable.

Hydro’s transmission and operations teams integrated new transmission assets and equipment for the Bottom Brook terminal station in western Newfoundland and at Soldiers Pond on the Avalon Peninsula. This work adds to the stability and reliability of the island’s interconnected electricity system.

Nalcor refurbished several terminal stations in 2017. This work included upgrades to Hydro power transformers in Cat Arm, Western Avalon, Hardwoods, Holyrood, and Paradise River. Our team also completed breaker replacements and refurbishments in several locations, including Holyrood, Churchill Falls, Buchans, Bear Cove, and Plum Point. The team carried out maintenance and upgrades on various distribution systems and remote diesel plants in the province’s most isolated service areas. In 2017, we completed an overhaul of the 27 MW gas turbine serving Happy Valley-Goose Bay and region. We also continued to make necessary investments to upgrade and refurbish the Bay d’Espoir and Holyrood generating stations to ensure the reliable operation of these key facilities.

In 2017, Nalcor completed construction of the Labrador-Island Transmission Link which was an important milestone marking completion of all transmission construction for the Muskrat Falls Project. This link allows us to integrate our Soldiers Pond switchyard into Hydro’s electrical grid, and brings us closer to delivering energy from Labrador for the first time while significantly improving our reliability.
CLIMATE ADAPTATION
Our sustainability focus incorporates climate change adaptation and the associated near term and future risks to our infrastructure. As a company, we recognize the role we play in both climate change mitigation and adapting to climate change. We have established a working group to focus on this specific issue.

Working together with the provincial Climate Change Branch, this group will help guide and advance our understanding of climate change mitigation and adaptation, the associated risks and opportunities, and the development of appropriate mitigation plans.

In 2018, the working group will focus on evaluating current and future risks and opportunities, improved training and awareness related to climate change adaptation, and the development of a Green House Gas Management Plan for Hydro.

INTEGRATION OF A LIFECYCLE APPROACH IN PROJECT EXECUTION AND OPERATIONS
A lifecycle approach identifies both opportunities and risks to our sustainability pillars from our business, all the way from raw materials, to disposal, for safety, environment, business excellence, people, and the community. The lifecycle approach considers procurement, transportation, construction, operations, decommissioning and disposal for our activities. Currently, we are setting the foundation for a lifecycle-based approach to sustainability. Our Environmental Policy was updated in 2016 to include a commitment to life cycle considerations. In 2017, the implementation of the new ISO 14001 Standard included consideration of the lifecycle in the evaluation of environmental aspects for all our facilities and services, including engineering.

Most recently, both Hydro and Nalcor’s engineering groups have incorporated lifecycle-based thinking to our capital projects. Specifically, lifecycle-based thinking is part of the Project Management Manual which provides direction and guidance for the execution of capital projects from the design and procurement to the construction of the project. The future operations and disposal costs plus requirements are also considered.

RESPONSIBLE PROCUREMENT
We are also working with suppliers to advance sustainability objectives as they relate specifically to diversity under our sustainability goal for people. As a proponent for supplier diversity and for increased access to opportunities, we undertook several supplier-related activities in 2017. With the Newfoundland and Labrador Organization for Women Entrepreneurs (NLOWE), Nalcor held an NLOWE Supplier Diversity session for our supply chain team, as well as a Nalcor Supplier Information Session for NLOWE members. We also participated in NLOWE’s 20th annual conference, along with its Women’s Economic Action Plan launch. We will continue to implement practices to support supplier diversity within our supply chain.

Through various agreements, we promoted the participation of Indigenous-owned businesses and we made meaningful efforts to help build capacity with this stakeholder group. As part of the Lower Churchill Project, we have an Impacts and Benefits Agreement with the Innu Nation which identifies numerous contracts offered on a bid first approach to Innu companies. Since 2013, Innu businesses have been awarded $513 million in contracts. In addition to these contracts, Innu businesses were given full and fair opportunity to compete for other contracts on a competitive basis. We also held regular meetings and shared information about bidding opportunities to build capacity and ensure competitive bids were received by Innu businesses.

ELECTRICITY PORTFOLIO GROWTH PLAN
Our energy marketing team has been focused on maximizing the value of our surplus electricity in energy markets in eastern Canada and the United States. In 2017, we sold 1.6 terawatt hours of recaptured energy from Churchill Falls to buyers outside the province. Revenues from energy sales totaled approximately $47 million.
Connection to the North American grid gives us the opportunity to obtain imports to help us with system reliability on an as-needed basis. Our energy marketing team will work closely with Hydro to ensure we meet provincial domestic needs on a timely and efficient basis.

We will also continue to research and assess opportunities for longer term contracts to supplement ongoing short term market activities.

As mitigating rates for the people of this province is a key priority for us, we have entered into a short-term agreement with Hydro to facilitate energy imports from outside the province to replace fuel at Holyrood. We have also entered into other agreements to purchase energy from outside of the province when there are costs savings to be realized.

**INTERCONNECTION TO NORTH AMERICAN GRID**

The Newfoundland and Labrador electricity system realized an historic first in December 2017 when the inaugural flow of energy across the Maritime Link (ML) marked the connection of the island to the North American grid for the first time. In mid-2018, Nalcor will complete the Labrador-Island Transmission Link (LIL) connecting the Island portion of the province to Labrador.

Interconnection to the North American grid also brings changes for Nalcor Energy Marketing (NEM). By refocusing part of its electricity portfolio and electricity trade activities in the short-term, we will be able to take advantage of opportunities arising from the completion of the new transmission assets.

When the Labrador Island Link is complete, we will be able to look for opportunities to replace expensive thermal energy from Holyrood with less expensive imports and with recapture energy, that is surplus energy to the needs of Labrador. This new focus will continue until we can operate the Muskrat Falls Generating Station. To this end, NEM has entered into agreements with various market participants to enable energy purchases when we can realize cost savings (the first energy imports flowed over the ML in February 2018). We will continue to assess all opportunities (including spot market purchases) in close coordination with Hydro to determine the best option for Newfoundland and Labrador electricity customers before we finalize purchase decisions.

As our electricity grid evolves, we expect the demands on the operation of our system to continue growing. In response to this, in 2017 Hydro’s Newfoundland and Labrador System Operator (NLSO) advanced its role of overseeing and managing the safe, reliable operation of the province’s bulk electricity system, 24 hours a day. The NLSO does this by monitoring consumption load, overseeing system risks and requirements, and constantly striking a balance between supply and demand.
Nalcor encourages and supports a dynamic work environment where we value and recognize employees for their efforts, supporting the overall performance of the corporation.

An inclusive work environment fosters a workplace where employees feel engaged, respected and comfortable to share their perspectives. They feel their ideas are valued and appreciated. This supports employee morale and commitment to our core values.

Ashley Turner
HR Lead, Diversity, People and Programs
DIVERSITY AND INCLUSION

Promoting diversity and inclusion in the workplace matters to Nalcor because we know a diverse workforce enhances our work culture and contributes to our success as a company. In 2017, we set gender equity targets to increase the representation of women in occupations in which they are under-represented. To support these targets, along with Nalcor’s broader commitment to encourage opportunities for women and other designated groups (Indigenous peoples, persons with disabilities, and members of visible minorities), we undertook a review of our recruitment and talent management processes. We applied a diversity and inclusion lens to our recruitment process, recognizing that diversifying our workforce will support our business success.

Through collaboration with community partners and proactive efforts to attract a diverse pool of qualified candidates, we increased female representation in several key areas. This includes management and skilled trades apprentices, particularly within Newfoundland and Labrador Hydro.

ENGAGING AND EMPOWERING OUR EMPLOYEES

When our employees come to work every day, we want to ensure they feel valued, respected, engaged and empowered to deliver their best work. Throughout 2017, we developed and implemented strategies to improve employee engagement across the company. We worked with managers and employees to support corporate-wide and location-specific initiatives to address trends from the 2016 employee engagement survey.

To help attract and retain our employees, we have a talent management framework in place. In recruitment, we apply strategies to ensure we attract and retain highly-skilled and motivated employees who are strongly committed to our success and future direction.

We are committed to providing meaningful training and development opportunities to our employees. In 2017, we offered the Leadership Fundamentals Program to a variety of new supervisors in our organization. We also supported registrations for a group of early to mid-career employees in the Women in Science, Engineering, Trades and Technology (WinSETT) Leadership Program. We enhanced our training programs for all employees, which includes training related to safety and health, environment, business conduct and ethics, and diversity and inclusion.

DIVERSITY & INCLUSION CHAMPIONS COMMITTEE

Nalcor’s Diversity & Inclusion (D&I) Champions Committee promotes internal D&I initiatives based on the strategic directions set by the Diversity and Inclusion Advisory Council. Members of the committee increase awareness of the value of diversity and inclusion and help build a diverse and inclusive workplace culture.

Back Row: Ashley Turner, Michael Ladha, Mark Thorne, Kelsey Hayley, Samantha Dalley, Mohamed Khalifa, Jessica Lundrigan, Melissa Wheeler

Front Row: Victoria Mitchell, Meghan Couves, Carmichael Polonio, Jeannine Fitzgerald

Missing: Alison Ball, Annette Poole, Beth Sheppard, Blake Barney, Harold Kean, Jason Coady, Jim McNeill, Jonathan Drummond, Kathleen Simms, Lisa Ledrew, Lori Coffin, Mark McGrath, Robert Woodman, Roy Byrne, Stephen Power Jr.
OUR SUSTAINABILITY PRIORITIES

COMMUNITY

PRIORITIES

Community Investment Program

Economic Impact

Customer Satisfaction

Stakeholder Engagement and Indigenous Partnerships

Our employees give generously of their time, skills and talents by helping those who need it most.

BY THE NUMBERS

Employment

In 2017, we employed more than 8,200 workers on the Lower Churchill Project from over 480 communities in Newfoundland and Labrador, including 940 women and 714 Indigenous people.

Education

To date, we employed 1,100 people trained through the Labrador Aboriginal Training Partnership (LATP) associated on the Muskrat Falls Project. Nalcor was the industry partner with LATP between 2010 and 2017.
At Nalcor, corporate social responsibility makes a difference in how we maintain our ongoing relationships with our customers, our communities, and the province as a whole. Our business success depends on our company ensuring it is an innovative and responsible corporate citizen for the people of Newfoundland and Labrador.

We believe being a responsible corporate citizen means we give back to communities in Newfoundland and Labrador and we improve the quality of life for people throughout the province. We do this by actively supporting organizations in the communities where we operate and where our employees live through our community investment programs and our volunteer contributions.

Both Nalcor and Hydro manage two such programs, each focusing on different support areas:

- Nalcor invests in youth leadership and anti-bullying initiatives, diversity and inclusion, STEM (Science, Technology, Engineering and Math) education, and safety.
- Hydro invests in child and youth health and safety, STEM education, diversity and inclusion, and environmental initiatives.

In 2017, Nalcor and Hydro made community investments of $640,000 to more than 20 organizations throughout Newfoundland and Labrador including:

- $250,000 to youth leadership and anti-bullying initiatives
- $200,000 to child and youth health safety and diversity and inclusion initiatives
- $40,000 to child and youth education initiatives

In partnership with the Canadian Red Cross, Nalcor and Hydro distributed more than 10,000 anti-bullying shirts to more than 40 schools across Newfoundland and Labrador for Pink Day 2017. Nalcor and Hydro also began a new partnership with Ronald McDonald House through the Adopt-A-Room program which, with our support, allows the House to provide upkeep to two rooms over the next three years.

COMING TOGETHER FOR OUR COMMUNITIES

Our employees are the core of our community investment program. They dedicate time and effort to volunteer, raise funds and donate items of need to organizations across the province. Last year, we gained ownership of the living quarters at the Bull Arm Fabrication Site after the close-out of the lease agreement with ExxonMobil. This meant we also acquired a number of kitchen, household and office items.

Our Bull Arm team immediately saw the opportunity to reach out to not-for-profit organizations across the province providing food and shelter services, which could make good use of the items available.

We asked not-for-profit organizations to identify their interest in the items available. We supported 23 organizations representing a variety of groups and they were delighted to be included in this donation.
COMMUNITY

VOLUNTEERISM
For our employees, giving back to the community is not always about making a donation. Many of our employees give freely of their time to support community organizations around the province. Every year, during national Volunteer Week, Nalcor and Hydro employees mark their own celebration of volunteerism through Acts of Kindness Week and offer additional opportunities for employees to share their time, knowledge and efforts.

During Acts of Kindness Week in 2017, our employees volunteered their time:
• supporting over 20 community groups;
• delivering meals to 55 people through Meals on Wheels;
• serving a healthy breakfast to close to 1,000 students through the Kids Eat Smart breakfast program; and
• collecting and delivering furniture to families in need.

Through our partnership with the Jimmy Pratt Outreach Centre Soup Kitchen, many of our employees volunteered throughout the year preparing and serving hot meals to patrons. Our employees also gave generously of their time to many other organizations across the province.

ECONOMIC IMPACT
Part of being a good corporate citizen is making a positive economic impact on the communities where we work while also building local capacity. Nalcor continues to make a positive economic impact on the province with year-over-year increases in revenues and profit for 2017. Our asset base grew to $18.0 billion in 2017 from $14.1 billion in 2016.

We are dedicated to building strong relationships with the people of the province, Indigenous leaders and the communities where we operate. These partnerships provide long-term benefits for the people of our province. Over the years we have seen how communities and businesses have played a significant role in helping us achieve our milestones relating to our capital investment program.
Nalcor spent a total of $513 million on Innu businesses through contracts with the Lower Churchill Project. Last year, as part of the Lower Churchill Project, we worked with nearly 400 local businesses, communities and organizations. Early in the project, while working with governments and Labrador’s Indigenous groups, we recognized the need to build local capacity in Labrador where the majority of the project was being built. Seven years ago, 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 project.

To date, more than 1,100 Indigenous people have found employment related to the project.

In addition to having an Innu Employment and Training coordinator on hand to assist in job coaching activities, we have dedicated resources to assist contractors and unions with identifying qualified Indigenous candidates for available opportunities, and where possible, make the connections for Indigenous individuals to participate in a subsidized work term or placement.

We are working towards the goal of optimizing Indigenous employment in all lines of business. 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.

CUSTOMER SATISFACTION
At Hydro, we know our customers – our friends, family and neighbors – are counting on us. Over the past few years, we have made a concerted effort to improve our relationship with our customers and the experience they have when they interact with us.

We conduct surveys with our customers every second year to gauge satisfaction with the level of service received and current company practices and to identify opportunities for improvement. Responses received from customers regularly influence company decisions to make changes and do things better.

Some examples of changes made following the last residential customer service survey in 2016 are outlined on the right.
myNLHYDRO
Hydro implemented Smart Customer Mobile technology, branded as myNLHydro which offers features that help customers to manage their energy usage, view and pay bills online, submit service requests, receive real-time outage notifications, set individualized budget goals with alert features (email, push & text), and much more.

To improve the customer experience, myNLHydro provides customers self-service capabilities and allows them to connect with Hydro anywhere, anytime, and on any device.

AFTER-HOURS OUTAGE CALL HANDLING
Hydro implemented after-hours outage call handling through a third party service provider, TeleLink. Prior to implementation, after-hours outage calls were handled by our Energy Control Center (ECC). This improvement allows the operators in the Energy Control Centre to focus on restoring power while enhancing the service for our customers.

NEW INTERACTIVE VOICE RESPONSE (IVR) PHONE SYSTEM FOR CUSTOMERS
Hydro’s Call Center receives over 35,000 calls per year. Our previous infrastructure was outdated and no longer vendor supported. We implemented a new interactive voice response (IVR) phone system to improve service and responsiveness.

New Program for Customers with Critical Needs
Hydro’s Critical Customer Notification Program was designed to provide extra attention and communication to customers who have a greater reliance on electrical service, including people who depend on life support equipment, and agencies and institutions such as hospitals, which provide essential services dependent on electricity. Whenever we plan a power outage, we make every effort to contact those customers and organizations, so they are adequately informed and able to prepare in advance.
IMPROVED FOCUS ON OUR KEY ACCOUNT CUSTOMERS
We developed a framework for account management for Hydro’s commercial and key customers. As part of this, a single point of contact for Hydro’s key customers was created to manage the long-term relationships.

In 2017, feedback from our commercial customer survey highlighted the need for Hydro to improve communications for planning outages and providing updates during longer interruptions. The vast majority of residential customers are satisfied with Hydro’s service. Ninety percent (90%) provided a rating of 7 or higher when asked to rate their overall satisfaction with Hydro.

STAKEHOLDER ENGAGEMENT AND INDIGENOUS PARTNERSHIPS
The foundation of our approach to stakeholder engagement is consultation and building relationships. By focusing on continuous improvement, we engage regularly with Indigenous groups and communities throughout the province to build meaningful relationships which are based on respect, cooperation, trust and shared responsibility.

In 2017, we invested time and resources into building stronger relationships with our Innu Nation partner and other Indigenous groups, including the NunatuKavut Community Council (NCC) and the Nunatsiavut Government. We have a manager of Indigenous Affairs based in Labrador. This year, with our Muskrat Falls Project partner, the Innu Nation, we celebrated one million hours worked by Innu Nation members since the start of project construction.

Throughout our operations, we have committed to regular open communication and dialogue with local communities. As a part of that commitment, we have established a Community Liaison Committee in Holyrood. The Community Liaison Committee is an advisory group that provides feedback, knowledge, and suggestions related to plant operations. The committee promotes open communication with stakeholders and provide them with an avenue to bring forward feedback on community, environmental, economic and any other concerns.
COMMUNITY DEVELOPMENT AGREEMENT - PARTNERSHIP WITH NUNATUKAVUT COMMUNITY COUNCIL (NCC)

In December 2017, we announced the signing of a Community Development Agreement (CDA) with the NunatuKavut Community Council (NCC). NCC is the representative governing body for approximately 6,000 Inuit of south and central Labrador, collectively known as the Southern Inuit of NunatuKavut. It is a meaningful and significant agreement that sets the foundation for a mutually beneficial relationship between both parties.

The CDA will provide tangible benefits to Southern Inuit and communities throughout NunatuKavut. It is a six-year agreement that contains provisions which foster respectful engagement on a number of issues, including:

• 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

• Obligation to negotiate on future Nalcor projects in Labrador

• Initiatives for renewable energy generation

• Workplace environment and cultural accommodations

• Training, employment and business opportunities.