

Northland Power
**2018 SUSTAINABILITY
REPORT**
Intelligent Energy for a Greener Planet™



Table of Contents

Message from the President and Chief Executive Officer	2
About this Report	4
Northland's Asset Diversification	6
Inspired Workforce	8
Global Leader in Clean and Green Power	12
Prosperity for all Stakeholders	16
Global Reporting Initiative Index	22
Disclaimer	25



Northland Power's goal is to be a leading supplier of clean, green energy while providing a sustainable and prosperous future for all stakeholders.

Nordsee One is Northland's 332 MW offshore wind farm located 40 kilometres off the coast of Germany.

About Northland Power

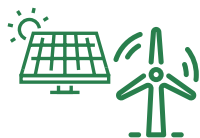
Northland Power Inc. ("**Northland**" or "**we**") is a global independent power producer that provides energy from a geographically and technologically diversified portfolio of sustainable infrastructure assets that include wind, solar and thermal power generation. We own and operate 26 facilities in Canada and Europe, with additional development projects in Mexico and Taiwan. We are headquartered in Toronto, Ontario with regional offices in Amsterdam, Hamburg, Houston, Mexico City, London, Seoul and Taipei. We are managed by an executive team with over 200 years of combined power industry experience.

Founded in 1987, we are dedicated to developing, building, owning and operating clean and green power infrastructure assets. We continually strive to increase value for shareholders by creating and managing high-quality projects underpinned by revenue contracts that deliver predictable cash flows. We focus on excellence in managing our projects and operating facilities, always seeking opportunities to enhance performance and value. We inspire our people to achieve excellence in everything they do, while working towards a sustainable and prosperous future for all stakeholders. We work in collaboration with business partners, municipalities and Indigenous partners to develop our green projects, always being mindful of our environmental footprint.

Our Vision

To be a top clean and green developer, constructor, owner, and operator of sustainable infrastructure assets, inspiring our people to achieve a sustainable and prosperous future for all of our stakeholders.

Northland by the Numbers



60%

of Power Generation
from **Green Energy**¹



95%

Annual Operation
Availability



2.4+

Gigawatts
in Operation



\$72

Million in Employee
Wages and Benefits



320

Employees as of
December 2018



0

Days Lost due to
Injury or Death

1. Balance of power generation from biomass and natural gas thermal generation.
Note: All dollar values are in Canadian (CAD) unless otherwise stated.



Message from the President and Chief Executive Officer

I am proud of the work we do at Northland to transform our planet's collective energy use and help create a more sustainable world. As an independent power producer, we are committed to delivering responsibly produced energy to meet the world's evolving needs. We have invested nearly \$10 billion of capital in renewable projects over the past decade to achieve this goal.

Since our last report was issued, we continue to focus our development efforts on renewable power generation, with green energy now accounting for 60% of our total generation. We are building a stronger portfolio of renewable energy assets and I look forward to watching this grow as more of our projects come online. Leading the way in 2018 was our 269 megawatt (**MW**) offshore wind project in the German North Sea, Deutsche Bucht. The project is advancing on time and on budget towards full commercial operations by the end of 2019. Once complete, Deutsche Bucht will provide enough energy to meet the needs of approximately 328,000 households. In May 2019, we announced our first investment in Mexico, the 130 MW La Lucha solar project. With construction now underway, the project is expected to be completed in the second half of 2020. In Asia, we made progress on our 1,044 MW Hai Long offshore wind project in Taiwan, having announced the first power purchase agreement (**PPA**) for the 300 MW feed-in-tariff allocation in early 2019. We expect to have PPAs for the remaining 744 MW by the end of the year and to see the project in operation by 2026.

Conducting ourselves in a way that respects people and the environment while pursuing opportunities to grow represents a sustainable future for all.

Not lost in our development activities is our overriding commitment to the health and safety of our workforce. In all aspects of our business, this is our number one priority and is central to our corporate values. We have a global Health and Safety office which continually monitors our performance and makes active improvements to our practices and processes. Monthly reviews are undertaken by the executive team, including myself, to ensure we are kept apprised of any gaps and track ongoing issues. The office also provides training and communication on relevant health and safety matters.

We want Northland to be the first choice for talented people looking for a rewarding and challenging career. Our workforce is a diverse team of individuals with a broad, multi-faceted skill set dedicated to delivering results for our stakeholders while upholding our values and culture. Our commitment to cultivate an inclusive entrepreneurial and empowered culture has given us an edge, allowing us to take our place on the global stage alongside much larger companies.

We are committed to open and transparent communication of our environmental impacts, and wherever possible, seek to eliminate or mitigate these impacts. We strive to safeguard the resources we use in energy production and pursue technologies that minimize our environmental impact, while enhancing wildlife and nature conservation. Examples include the recycling of wastewater at our Canadian thermal facilities and incorporating an innovative Mono Bucket suction technology on two of our turbine foundations at Deutsche Bucht—this technology will reduce the effects of underwater noise on marine mammals.

Finally, we remain sensitive to the needs of our local communities, continually engaging in open and respectful dialogue and regular contributions. We strive to be good neighbours and to deliver ongoing benefits through community investments and partnerships as well as philanthropic efforts.

All of our activities, whether in operations, construction, people management or stakeholder engagement, fall under the diligent oversight of our Board of Directors through its Audit, Compensation & Governance and Nominating Committees.

Conducting ourselves in a way that is respectful to people and the environment while pursuing opportunities to grow represents a sustainable future for all. It also means conducting ourselves responsibly, as a company and as individuals. Our 2018 Sustainability Report demonstrates our commitment to responsible and transparent development for all of our stakeholders.



Mike Crawley
President and Chief Executive Officer



About this Report

Northland is proud to present our 2018 Sustainability Report. The purpose of this report is to demonstrate how we are delivering on our vision and strategy, of which sustainability is an integral component, and to inform our stakeholders about our overall environmental and social performance.

- This report covers the year ended December 31, 2018, with comparative information for the year ended December 31, 2017.
- Certain comparative information has been restated to adhere to current year measurement and presentation, primarily as a result of our expanded scope, providing more fulsome coverage of our global operations.
- No external assurance was sought for the content of this report.

Stakeholders and Materiality

- This report addresses GRI topics that Northland considers material to the significance of our impacts and their importance to stakeholders for decision-making.
- We conducted a materiality assessment, weighing GRI indicators according to impact and their relative importance to stakeholders.
- Our stakeholders include:
 - Investors:** Individuals, investment and pension funds and the broader investment community, including lenders, who hold or are interested in purchasing Northland's equity or debt instruments
 - Community:** Municipalities, individuals, non-governmental organizations, Indigenous groups and regulatory authorities in and around the communities where we currently operate or are looking to expand
 - Employees:** Current and prospective employees and contractors
- In defining our stakeholders, we applied a broad definition of inclusiveness: any entities or individuals that may be significantly affected by our activities, products and services and/or that may in turn affect our ability to achieve our objectives.
- Stakeholder engagement helps us focus and prioritize our corporate sustainability initiatives.
- We invite comments and dialogue by contacting us at sustainability@northlandpower.com.

Boundaries

- The information and data in this report take into account the direct impacts of all material components of Northland's global activities, except where otherwise noted.
- Direct impacts are those that Northland causes or contributes to through its direct activities, excluding indirect impacts of the activities of our suppliers and other business partners.
- Data for 2018 captures the performance of subsidiaries owned or operated by Northland as of December 31, 2018. Subsidiaries and operating facilities sold during 2018, such as the Cochrane and Chapais thermal facilities, are excluded.

Global Reporting Initiative Declaration

This report is informed by the Global Reporting Initiative (GRI) standards. The GRI is an international independent standards organization that helps companies, governments and other organizations understand and communicate their impacts on a range of economic, environmental and social issues such as climate change, human rights and many others.

Using the GRI reporting guidelines helps Northland maintain a high level of transparency, clarity and comparability.

For additional information, refer to:

- 2018 Annual Report, for Northland's financial performance
- 2019 Management Information Circular, for information on Northland's executive team and Board of Directors
- 2018 Annual Information Form, for information on Northland's business and key risks
- northlandpower.com, for all of the above, including general corporate information and current developments

Business Strategy Pillars

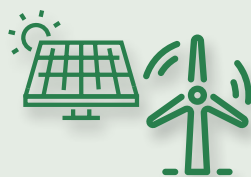


Sustainability Goals



Inspired Workforce

- Protecting our Workforce
- Managing Risk
- Supporting Training Opportunities
- Growing Top Talent
- Promoting a Positive Learning Environment



Global Leader in Clean and Green Power

- Managing our Shared Resources
- Mitigating our Impacts
- Protecting Biodiversity
- Enhancing our Economic Value
- Strengthening our Governance



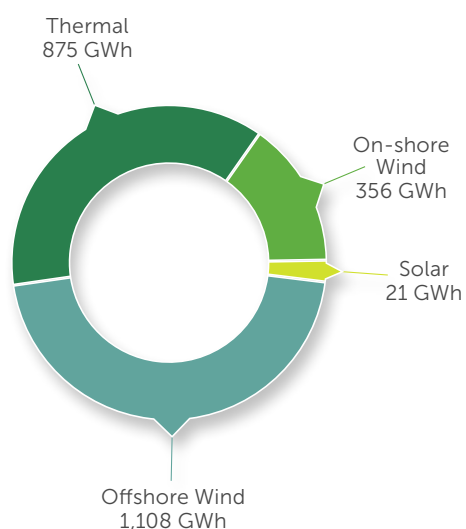
Prosperity for all Stakeholders

- Working with Local Communities
- Developing Meaningful Relationships
- Continuing our Commitment
- Engaging our Team
- Investing in our Communities



Northland's Asset Diversification

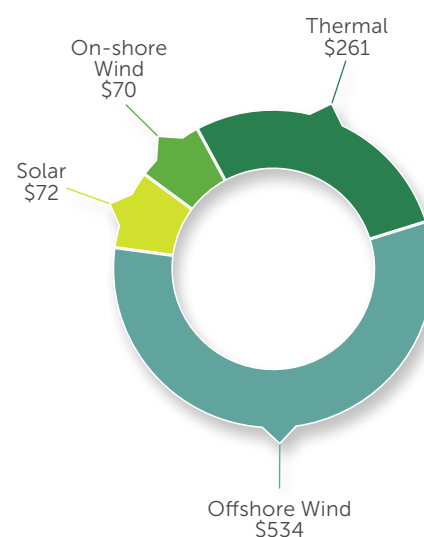
2018 Annual Production by Technology¹






2018 Annual Production by Location¹



2018 Adjusted EBITDA by Technology (\$M)



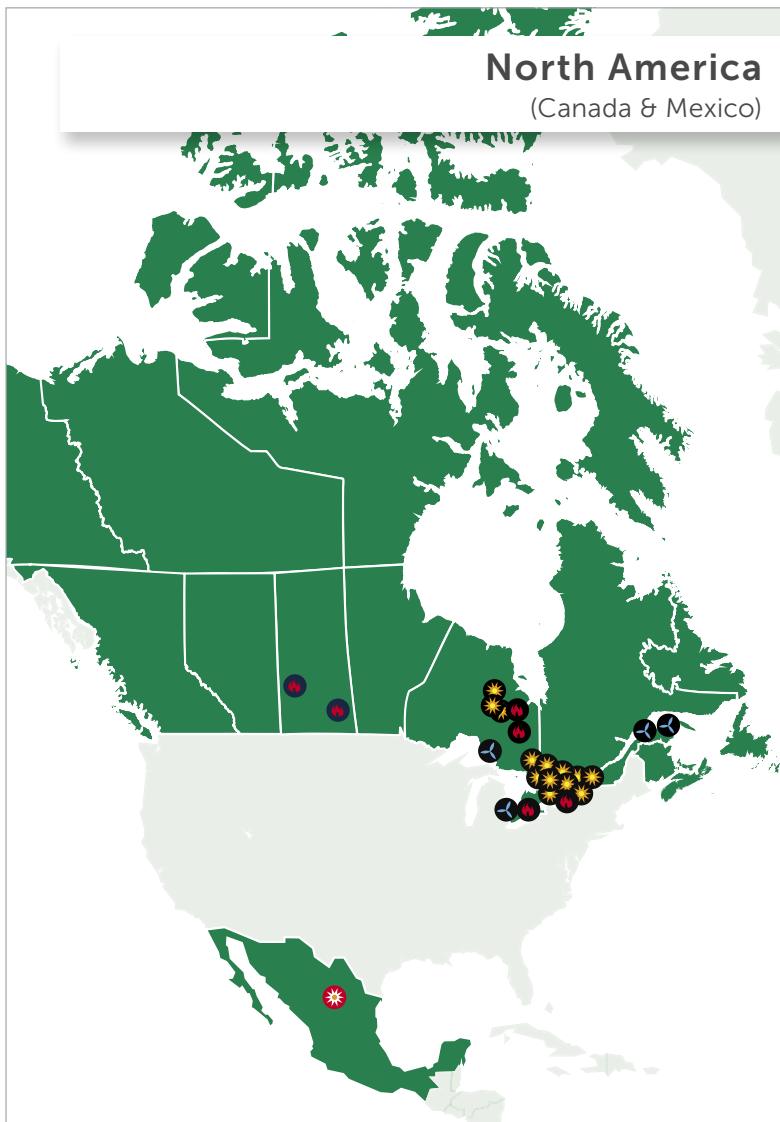
Production Capacity^{2,3}

Technology	Operating	Construction	Advanced Development
	973 MW	—	—
	1,326 MW	269 MW	1,044 MW
	130 MW	130 MW	—
Total (Gross)	2,429 MW	399 MW	1,044 MW
Total (Net) ⁴	2,014 MW	399 MW	626 MW

1. Gigawatt hours (GWh).
 2. Megawatts (MW).
 3. As of December 31, 2018.
 4. Represents Northland's economic interest.

North America

(Canada & Mexico)



Europe






(Netherlands & Germany)



Asia

(Taiwan)



-  Wind: On-shore and Offshore
-  Wind: Under Construction and Advanced Development
-  Solar
-  Solar: Under Construction
-  Thermal

Inspired Workforce

At Northland, we understand the importance of inspiring and empowering our growing workforce to achieve excellence. As part of ensuring a healthy and productive environment for all employees and contractors, we work as a team to collectively take responsibility for delivering our services in a safe, responsible and efficient manner.

Protecting our Workforce

Safety is our number one priority. We are dedicated to minimizing accidents, injuries and work-related illnesses at all of our facilities, offices and construction sites. To ensure a healthy and safe workplace, we developed a five-point Health and Safety Management System which is consistently deployed across our company and includes:

- Management Leadership Commitment
- Employee Involvement
- Communication and Training
- The Management System Manual
- Performance Evaluation and Improvement

The Health and Safety Management System establishes clear targets and goals within a company-wide framework that is continuously reviewed and improved by our executive team. It is supported by our Health and Safety Policy, Strategy, Management Standards and Metrics. We also adhere to internationally recognized occupational health and safety standards. Our global health and safety office employs registered and internationally certified health and safety professionals who manage the systems in Canada and Europe. Project-specific safety personnel are engaged, the team is expanded and resources are allocated for projects during construction as needed. Each of our facilities monitor, evaluate and report on health and safety performance in accordance with our Health and Safety Management System. Each facility maintains its own emergency response plan, tailored to its individual needs, and completes evacuation drills and exercises to test the plan and strengthen emergency preparedness.

The executive team is committed to ensuring that we maintain the highest possible standards. In addition to an annual review of our Global Health and Safety Policy, a consolidated monthly health and safety update, with reports from all of our regional offices and facilities including our Global Health and Safety scorecard, is produced and reviewed by the executive team. This approach ensures that we effectively monitor our entire operations.

Managing Risk

At Northland, we work to monitor, minimize and control risks so that our workforce is safe and our operations are efficient for all routine and non-routine tasks. We have a consistent risk methodology that is used at all of our operating assets.

To manage risk globally, we also:

- Enable our Corporate and European offices to work with the Taiwan Ministry of Labour on the development of guidelines for safe construction and operations for the emerging offshore wind market
- Work with our team in Europe on the Deutsche Bucht project to develop an emergency and crisis response plan and to test the communication lines in cases of emergency and/or crisis, to better evaluate the effectiveness of the plan
- Implement a revised Hazard Identification and Risk Assessment (**HIRA**) methodology for routine tasks that are undertaken at our Canadian facilities. The HIRA helps employees identify occupational hazards, assess risks and eliminate or mitigate them

Employee Health and Safety ¹	2018	2017
Employees in Health and Safety Committees ²	36	40
Total hours worked (all sites)	1,123,273 hrs	626,100 hrs
Lost-time injuries	0	3
Days lost	0	14
Fatalities or critical injuries	0	0
Occupational illnesses	0	0
Lost-Time Injury Frequency Rate (LTIFR) ³	0	1.01
Worker training on occupational health and safety (100% of Plant Managers and Site Supervisors) ⁴	76	n/a

1. Employees at all 26 power generation facilities and head office only, and does not include contractors.

2. Health and Safety Committees represent management and workers.

3. LTIFR is the number of lost-time injuries per 200,000 hours worked.

LTIFR = (# cases x 200,000) / total hours worked.

4. Total number of plant managers and site supervisors.

Inspired Workforce

Our global risk management program follows five principles to ensure compliance with laws, regulations and industry best practices:

1. Identifying hazards
2. Understanding exposure, i.e., who might be harmed and how
3. Assessing risks and identifying control measures
4. Implementing controls
5. Reviewing the performance and efficiency of these measures, and updating the risk assessment criteria

Time Since Last Lost-Time Incident (LTI)	2018	2017
Thermal Generating Plants		
Kingston	21 yrs 10 mos	20 yrs 10 mos
Iroquois Falls	9 yrs 8 mos	8 yrs 8 mos
Thorold	8 yrs 10 mos	7 yrs 10 mos
Spy Hill	7 yrs 2 mos	6 yrs 2 mos
North Battleford	5 yrs 6 mos	4 yrs 6 mos
Kirkland Lake	2 yr 10 mos	1 yr 10 mos
On-shore Wind Farms		
4 plants—all zero LTI since commercial operations	since 2009, 2011, 2014, 2016	
Offshore Wind Farms		
2 plants—all zero LTI since commercial operations	since 2017	
Solar Farms		
13 plants—all zero LTI since commercial operations	since 2013, 2014 and 2015	

For non-routine tasks, we apply Job Hazard Analysis (**JHA**) standards to identify hazards and assess risks. The JHA sorts tasks into basic steps, analyzes each step for risks and develops methods to mitigate those risks.

In all settings at Northland where employees or contractors believe a situation could cause themselves or another person harm, including injury or ill health, they have the right to refuse the work and remove themselves from the situation. All reported cases are promptly investigated.

Occupational health services across all global locations comply with legal requirements and good industry practice and are provided by competent individuals with recognized qualifications and accreditations. First aid treatment is immediately available at each facility, office and construction site, and Northland will arrange transportation to health clinics on an as needed basis.

We encourage employees to participate on our Health and Safety Committees or to become a Health and Safety Representative at one of our operating facilities, offices or construction sites. The Committees include labour and management representatives who meet on a regular basis to deal with Northland-specific health and safety issues. The Committees enhance the co-operation within our workforce, helping to address and resolve health and safety related problems.

Supporting Training Opportunities

Managers and supervisors have the front-line responsibility to protect our workers and keep the workplace safe and are fundamental to maintaining Northland's outstanding health and safety record.

At our European offshore wind facilities, we have adopted the internationally recognized standard, the Global Wind Organization (**GWO**) framework, which aligns safety and technical training standards. Our technicians are required to complete 140 hours of GWO training before they can work at our wind facilities. Our European projects established this required training as a contractual pre-requisite for all members of the supply chain, aligning the safety training activities of all of our contractors.

Our goal is to inspire our people to achieve a sustainable, prosperous future for all stakeholders. Our company is the sum total of our employees' strengths, and it is a company-wide focus to protect their health and safety and develop their careers.

Inspired Workforce

Training standards include:

- Safety: manual handling, fire awareness, working at heights, sea survival, enhanced first aid
- Technical Skills: mechanical, electrical, hydraulics and installation hazards
- Advanced Rescue: nacelle, tower and basement rescue; hub, spinner and inside rescue
- Helicopter Training: helicopter safety, helicopter underwater escape training, use of emergency breathing system

Supervisors at all our Canadian operating facilities undertook mandatory training to improve their health and safety knowledge and skills. The training was facilitated by Canada's National Centre for Occupational Health and Safety, the country's national resource centre for the advancement of workplace health and safety.

Topics included:

- Safety principles and risk management, legislation, rights and responsibilities of managers, supervisors and workers
- Hazard recognition and control measures
- Fire prevention and emergency preparedness
- Hazards and control measures for chemical, physical and biological hazards
- Ergonomics—practices to prevent musculoskeletal disorders
- Workplace inspection and accident investigation
- Development and implementation of effective workplace programs

Northland
in ACTION

Northland Opens Offshore Wind Operations Hub in Germany

In 2018, Northland announced the opening of its offshore wind operations hub in Germany. The hub represents a consolidation of Northland's offshore wind operations, bringing more functions in-house and leveraging benefits for future projects. Initial activities are focused on achieving synergies across our Nordsee One wind farm and Deutsche Bucht project, which is currently under construction. The team looks forward to having new staff join them, ensuring provision of the best service possible at our offshore wind farms.

Corporate Governance

Northland's Board of Directors is comprised primarily of independent members with a broad and diversified skillset encompassing finance, audit, business acumen, legal and power industry experience and expertise. The Board also has three sub committees: an independent Audit Committee that oversees accounting and financial matters, as well as Compensation & Governance and Nominating Committees which include independent directors.

Publicly traded since 1997, we are listed on the Toronto Stock Exchange (TSX:NPI).

Directors as of May 22, 2019

James C. Temerty, Chair
 Russell Goodman, Lead Independent Director
 Linda L. Bertoldi
 Dr. Marie Bountrogianni
 John W. Brace
 Barry Gilmour
 Keith Halbert

Executive Officers

Mike Crawley, President and Chief Executive Officer
 Paul Bradley, Chief Financial Officer
 Troy Patton, Chief Operations Officer
 Morten Melin, Executive Vice President, Construction
 Michael Shadbolt, Vice President, Legal and Corporate Affairs

Board Committees

- Audit Committee: Oversees accounting and financial reporting; internal controls and management information; risks and risk management; the external audit process; and compliance with all applicable laws and regulations.
- Compensation Committee: Oversees the compensation of Northland's executive team and Board.
- Governance & Nominating Committee: Responsible for governance issues, such as recommending new Board candidates and committee nominees, assessing the effectiveness of the Board, its committees and members and orienting new members and advising on Board compensation matters.

Concerns about unethical or unlawful behaviour are reported directly to the Board of Directors.

Inspired Workforce

Growing Top Talent

At Northland, we place great importance on fostering the highest ethical standards and professionalism amongst our leadership and workforce. Our Code of Business Conduct and Ethics reflects our values, among them honesty and integrity, as well as our commitment to excellence. We maintain a global strategy which is communicated to and followed by all offices.

Our workforce, excluding contractors, grew in 2018 as a result of our global expansion into new markets, the addition of the European offshore wind operations hub and other expanded corporate support functions. We strive to enable an entrepreneurial culture of top talent, and as such, are committed to offering competitive wages and ensuring inclusivity in our hiring, promotions and overall business practices. We are aided by our sustainable focus, which gives us an advantage in the competition for talent at all levels of the organization. Similarly, we benefit from our positive image and reputation when seeking new business partners, exploring new jurisdictions and obtaining regulatory approvals.

Employees by the Number	2018	2017
Total employees	320	271
Full-time : Part-time ratio	313:7	268:3
Male : Female ratio	251:69	212:59
Percentage covered by collective bargaining agreements	14.17%	13.6%

Discrimination and Human Rights	2018	2017
Incidents of discrimination	0	0
Human rights reviews / impact assessments	0	0

Salaries, Safety Courses and Training	2018	2017 ¹
\$CAD thousands		
Employee wages and benefits	\$72,120	\$63,634
Investment in safety courses and training	\$763	\$300
Investment in professional and career education and training	\$576	\$290

1. Certain comparative information has been restated to adhere to current year measurement and presentation.

Promoting a Positive Learning Environment

We encourage learning and professional development for our employees and offer reimbursement for work-specific training. Skills and knowledge building are encouraged through corporate activities, such as Northland's regular Lunch and Learn sessions, which range in scope from Healthy Living to Waste Gasification. In 2018, we announced the creation of the Northland Learning Institute for employees in both Canada and Europe. We also began offering a leadership development program in order to build more highly effective teams.

An enhanced performance review process, supported by training sessions, was rolled out to all head office employees in 2018. We plan to expand this process to our European offices by the end of 2019.

Enabling Safe Back to Work Transitions

Northland's Work Reintegration Program provides our employees with the resources and tools to successfully return to work after a work-related injury or illness. Through goal-oriented transition plans, employees collaborate with their supervisor, health professionals, union representatives and the Worker's Compensation Board to return to work at a pace and in a role that best suits their recovery. For 2018, there were no instances of back to work transitions as a result of work-related injury or illness.

Sponsoring Women in Renewable Energy

In 2018, we were a 'Gigawatt-level' sponsor of Women in Renewable Energy (WiRE)'s Toronto chapter. WiRE's mission is to advance the role and recognition of women working in the energy sector. During 2018, many women in Northland's workforce attended WiRE events, and Michelle Chislett, Northland's Managing Director of Canada and U.S. Development, was featured as a keynote speaker.

Global Leader in Clean and Green Power

Northland makes environmental protection a priority throughout our development, construction and operations efforts. As a leader in clean and green power, we take great care to be responsible stewards of the planet.

Our power-producing facilities generate electricity from wind, sun, biomass or natural gas. Each type of facility has different environmental impacts:

- **On-shore and offshore wind**—Our four on-shore and two offshore wind farms generate renewable electricity from wind turbines strategically positioned across large areas of land or water. In both cases, the impact on biodiversity requires careful planning and management throughout the facility's life cycle.
- **Solar**—Our 13 solar farms, all in Ontario, generate renewable electricity from the sun, using panels laid out in rows in concentrated land areas. We consider the impact of the panel and equipment positioning on surrounding land, including how it may impact water run-off or erosion.
- **Thermal (biomass and natural gas)**—Our six thermal plants convert heat to electricity using carbon-neutral biomass or clean-burning natural gas. Thermal plants use water for cooling and natural gas combustion creates greenhouse gas (GHG) and other air emissions. Our thermal facilities help displace electricity production from coal, providing the electrical output, with fewer associated impacts on the environment and lower GHG emissions.

Northland's thermal facilities, which account for approximately one third of operating results, are our primary source of water use, energy consumption, GHG and air emissions. Accordingly, data collection and reporting focuses on this segment of our operations. The data presented in this section captures the impact of thermal operations as well as energy usage and GHG emissions from our Toronto head office and offshore wind operations teams in Europe.

Northland in ACTION

Creating Wildlife Habitat

On occasion, an important natural feature, such as a forest, wetland or grassland nesting habitat, may be disturbed during the construction of

one of our projects. Through a compensation process which replaces like-for-like habitat near the original site, new habitat can be created. In past years, our compensation projects have included:

- habitat creation for Barn Swallows
- replanting of forested areas, including butternut trees
- creation of an amphibian-friendly pond
- replanting of grassland habitat for migratory bird species, like Bobolink and Eastern Meadowlark

Northland undertakes some of these projects independently and has also partnered with conservation organizations like Ducks Unlimited Canada and the Eastern Ontario Model Forest.



Bobolinks are declining in numbers; ensuring that the species has a suitable nesting habitat is key to increasing the population.

/ Ducks Unlimited Canada

Global Leader in Clean and Green Power

Managing our Shared Resources

Water is one of the planet's most important shared resources. At Northland, we make every effort to responsibly manage the water used in our operations. Our overall water management objective is to minimize the use of water and the impact on all bodies of water in and around our operating sites. We aim to withdraw only the amount of water that we need and to return all withdrawn water back to its original source, less any losses from evaporation. We closely monitor water discharged, ensuring pH-levels, temperature and other mineral levels are in accordance with permit requirements.

In 2018, our total water withdrawal was 96,066,473m³ (2017–71,065,573m³). Water withdrawal occurs at four of our thermal facilities: Iroquois Falls, Kingston, Kirkland Lake and Thorold. Iroquois Falls and Thorold return the vast majority of the water they take. A small portion of the water withdrawn at Kirkland Lake and Kingston evaporates in the facilities' cooling towers; the specific amount varies based on internal and external conditions. In total, approximately 93% of the removed water is returned to the original source, with the removed water returned in an equivalent or better state.

Northland monitors and reports on all incidents of non-compliance with environmental laws and regulations. At our European operations, spills are our primary incident risk. We take all spills seriously—even the smallest spill is reported to the regulatory authorities. In 2018, the spills we reported to the authorities were not actively investigated by the governmental regulator. As such, they are labelled as "non-significant". In Canada, incidents in the non-significant column comprise all spill/release incidents that were reported to the provincial regulatory authorities.

Environmental Performance ¹	2018	2017
Significant spills	0	0
Significant non-compliance with environmental laws and regulations	0	0
Non-significant spills and other environmental incidents	19	17

1. Relates to incidents that are reported to the provincial/state body in the applicable jurisdiction where the facility operates but do not meet the criteria of a significant spill as determined through risk assessment.

Northland in ACTION

Collaborative Water Planning at North Battleford, Saskatchewan

At North Battleford, impacts to the adjacent North Saskatchewan River have been minimized through a creative and collaborative solution. We avoided installing water intake and discharge structures on the river and instead, water is taken from the City of North Battleford's wastewater treatment plant. We installed a diversion wet well that takes a portion of the City's effluent and uses it for process water. After use in our facility, all water is consolidated and pumped back through to the City's treatment plant prior to discharge into the natural environment.



Reverse osmosis filters for water treatment that remove water impurities by forcing water under pressure through a non-permeable membrane element that separates water impurities.

Global Leader in Clean and Green Power

Mitigating our Impacts

Northland monitors energy usage and related greenhouse (GHG) emissions from fuel used at operating facilities and electricity used at offices. Emissions factors specific to the source fuel and region are applied to calculate emissions. Total GHG emissions, as well as GHG emissions intensity, measured against our total electricity production, decreased in 2018 compared to 2017. This decrease reflects our strategic focus on operating as efficiently as possible and growing our renewable generation capacity.

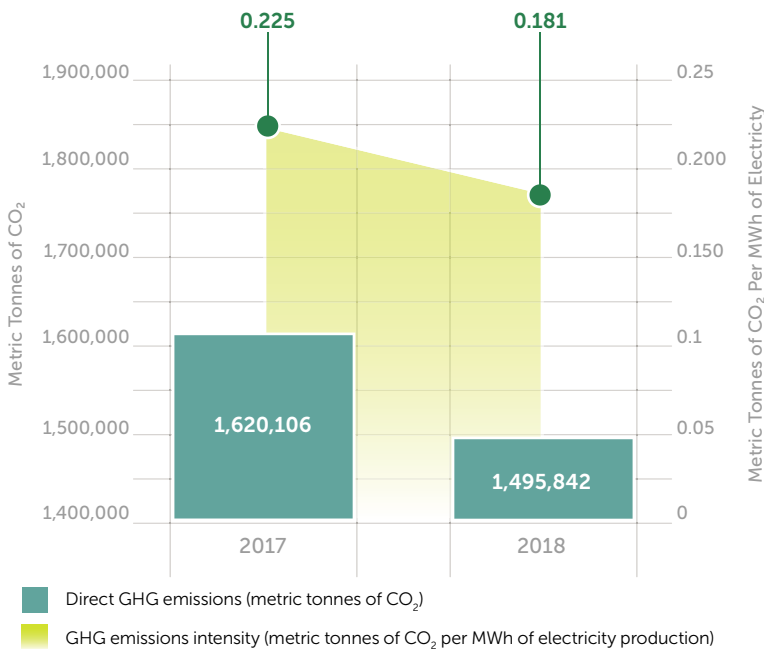
We also monitor air emissions from our thermal facilities to ensure levels of nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions are within permitted levels. We measure gross emissions and intensity in comparison to electricity production.

For all compounds measured, our total emissions and intensity decreased in 2018 compared to 2017, primarily due to the sale of a biomass facility in Chapais, Quebec.



Our 86 MW natural gas facility, Spy Hill, in Esterhazy, Saskatchewan uses turbine technology to produce electricity in an efficient, reliable and environmentally responsible manner.

GHG Emissions and GHG Intensity Factor



Environmental Performance ¹	2018	2017 ²
Energy consumption (GJ)	26,509,336	23,453,460
Direct GHG emissions (metric tonnes of CO ₂)	1,495,842	1,620,106
GHG emissions intensity (tonnes/MWh)	0.181	0.225
Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions		
VOC Emissions (metric tonnes)	194.0	203.0
NOx Emissions (metric tonnes)	1,859.0	2,367.0
SOx Emissions (metric tonnes)	8.1	23.8
Total Particulate Matter (PM) emissions (metric tonnes)	98.4	131.5

1. Includes all material energy usage from fuel and electricity. Although electricity used at the Toronto head office is included, electricity used at offices and control centres outside of Canada is excluded due to data collection limitations.

2. Certain comparative information has been restated to adhere to current year measurement and presentation.

Global Leader in Clean and Green Power

Protecting Biodiversity

As part of the site selection process for on-shore wind and solar facilities, lands to be used are assessed for environmentally sensitive species, features or uses. This includes examining nearby waterbodies, such as wetlands, inspecting for rare and endangered vegetation and conducting surveys to identify any use of the lands by wildlife, including birds, mammals, reptiles and amphibians. Any identified environmentally sensitive species, feature or use is mitigated or avoided completely as part of the facility design.



Replanting grassland habitat for migratory bird species is key to Northland's sustainability goals.



Northland
in ACTION

Monitoring Lesser Black-backed Gulls in the Netherlands

To better understand the impact of Northland's Gemini offshore wind farm on local breeding bird populations, University of Amsterdam students are studying the three-dimensional and time-space use of Lesser Black-backed Gulls breeding on the Wadden Island Schiermonnikoog. The Island nesting site is an important indicator because of its relative proximity to the Gemini wind farm. In total, 30 birds are being tracked with UvA-BiTS that measure GPS position, altitude and ground speed at 10-minute intervals, which change to 3-second intervals when birds fly near the wind farm. The study will help researchers and Northland better understand the Lesser Black-backed Gulls' migratory and breeding patterns and determine if there are ways to modify our operations in ways that can minimize negative impact on the birds.

Lesser Black-backed Gull
/ Kees Camphuysen

Prosperity for all Stakeholders

Enhancing our Economic Value

Northland's corporate strategy is to continually increase shareholder value by creating high-quality projects underpinned by revenue contracts that deliver predictable cash flows. Core components of our business strategy include planned investments in the development of sustainable infrastructure assets.

We continually reinvest in our operating assets to ensure maximum efficiency and viability. We return value to our stakeholders in the form of salaries and wages, payments for goods and services, payments to governments, dividends and appreciation in share value. As a result, Northland creates and distributes significant economic value globally and in the communities where we operate.

Our ongoing innovation and development focus on reducing the cost of renewable power generation and improving efficiency—both of which drive the competitiveness and the economic feasibility of renewable power.

As a result of our focus on innovation, Nordsee One was awarded a subsidy from the European Commission for using 6 megawatt (**MW**) wind turbines on newly developed monopile foundation technology when the facility was constructed. Nordsee One began receiving the NER300 subsidy in 2018. The subsidy totals €70 million and will be received over the first five years of energy production (2018-2022).

For the upcoming Hai Long and La Lucha projects, Northland has made commitments to support local communities and economies directly through community sponsorships and programs as well as indirectly through its development and construction expenditures.

Our 2018 cash expenditure on sustainable infrastructure for the Deutsche Bucht offshore wind facility under construction was \$385 million. Our expenditure on sustainable infrastructure for the Nordsee One and Deutsche Bucht offshore wind facilities under construction was \$804 million, representing 100% of construction spending for both.

For our two projects currently under construction, budgeted infrastructure investment is:

- La Lucha: \$190 million
- Deutsche Bucht: €1.4 billion (CAD \$2 billion)

	2018	2017 ¹
SCAD thousands		
Economic Value Generated		
Revenues ²	\$1,568,247	\$1,389,197
Economic Value Distributed		
Operating costs ³	\$347,586	\$331,790
employee wages and benefits	\$72,120	\$63,634
Payments to capital providers ⁴	\$623,658	\$483,804
Payments to governments ⁵	\$40,919	\$16,129
Community investments	\$1,016	\$700
	\$1,085,299	\$896,057
Net Economic Value Retained		
	\$482,948	\$493,140

1. Certain comparative information has been restated to adhere to current year measurement and presentation.

2. Revenues include sales and finance lease income.

3. Operating costs include cost of sales, plant operating costs and general and administrative costs.

4. Includes payments for interest and dividends to common shareholders, preferred shareholders and non-controlling interest partner, disclosed on a cash basis.

5. Limited to current year tax expense recognized on an accrual basis.

In 2018, Northland distributed economic value, which includes payments for wages and benefits, payments to governments, and payments to suppliers and capital providers of over \$1 billion, which was an increase of 21%, or \$189 million, from 2017. This was mainly due to higher payments as a result of the start of commercial operations at Nordsee One.

Prosperity for all Stakeholders

Strengthening our Governance

Strong and transparent governance supported by ongoing communication and training is important at Northland. We have a strict Code of Business Conduct and Ethics. We also have an Anti-Bribery/Anti-Corruption (**ABAC**) policy that was approved by our Board in 2016 and is supported by regular employee training and compliance procedures that are in place to prevent bribery and corruption. We strive to ensure that all of our employees, contractors and partners adhere to these policies and procedures at all times.

At all of our facilities, we identify, assess and manage risk through our Enterprise Risk Management (**ERM**) program. In 2018, 14 key risks were identified under the ERM program. For each risk, we conducted a risk assessment, set targets, developed an action plan and presented regular reports to monitor performance. The risk of a bribery or corruption incident occurring is one of the 14 key risks. Management continually reviews and enhances our ABAC Policy. The policy has been communicated to every employee and supported by regular training. Identification of specific risk areas, such as our expansion into new regions around the world, has led to targeted risk management practices. More training and rigorous due diligence of service providers are being planned for 2019.

Climate Change Impacts

Northland recognizes the importance of addressing climate change and its impacts on our business operations as well as on the planet. We continually identify opportunities and risks, including potential financial implications, related to climate change. The summary below highlights the key opportunities and risks identified along with their impacts.

Climate Change Opportunities

- **Growth of Renewable Portfolio**—We foresee new project opportunities in the short, medium and long-term as a result of the adoption of decarbonization policies across the world and the strengthening of such policies in advanced economies. This includes investment in natural gas and biomass generation as a transition fuel to reduce the carbon footprint from oil and coal fired generation in certain markets.
- **New Business Opportunities**—We anticipate identifying new business opportunities, including new classes of customers and demand for new services related to renewable energy, owing to continued interest in renewable power technologies.
- **Greater Access to Capital**—We expect to benefit from direct business partnerships as well as the trend of increasing capital allocations by large institutional investors in companies pursuing environmentally sustainable business models.
- **Reputational Advantage**—Our sustainability-centered business model gives us a big advantage in attracting top talent and high-quality business partners.

Climate Change Risks

- **Increased Variability of Results**—Climate change raises the potential for increased variability of renewable resources, as a result of possible changes in wind patterns or cloud cover, which would result in more variable electricity production and financial results.
- **Effects on Physical Assets**—We are exposed to weather and subsurface risk during the construction of our offshore wind farms. Our operations rely on assets, such as transmission grids, towers and substations owned and operated by third-parties, which may also be adversely affected by climate change and which we have little ability to control. We put in place appropriate insurance policies to manage these risks as efficiently as possible.
- **Increased Regulatory Compliance**—Our thermal facilities face increased regulatory compliance requirements, including carbon pricing programs and more stringent air and water quality standards. We are committed to ensuring compliance and reporting our impacts transparently. Much of the costs associated with compliance are passed on to the power purchaser under the terms of their power purchase agreement.

Prosperity for all Stakeholders

Working with Local Communities

Northland is committed to ensuring open and transparent communication with every community where we operate or are planning operations. Our community consultations begin early in the proposal stage, continue through construction and remain an integral part of our project operations long after completion.

Many of our renewable facilities in Canada are located within traditional Indigenous territories. We have made it our policy to develop relationships with these communities. We currently have formal partnerships with First Nations at our Ontario on-shore wind farms, Grand Bend and McLean's Mountain, and recently began partnerships at our four Cochrane solar facilities.

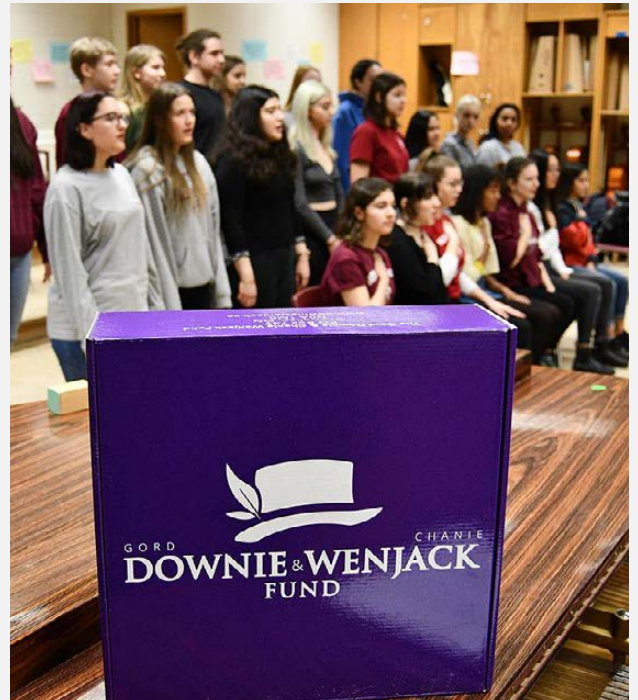
Our First Nations partners on these projects are:

- Aundeck Omni Kaning First Nation
- M'Chigeeng First Nation
- Sheguiandah First Nation
- Sheshegwaning First Nation
- Whitefish River First Nation
- Zhiibaahaasing First Nation
- Aamjiwnaang First Nation
- Walpole Island First Nation – Bkejwanong Territory
- Taykwa Tagamou Nation
- Wahgoshig First Nation

Northland in ACTION

Building a Better Canada

As good corporate citizens, we all have a responsibility to understand our shared history. Gord Downie, former Canadian rock musician and activist, recognized this and took action. In August of 2016, Gord asked all Canadians to look at the state of Indigenous-settler relations in this country and to "Do Something" to change them for the better. We are honoured to answer Gord's call and play an active role in reconciliation through the support of the Downie Wenjack Fund's Legacy Schools Program. From our support of the Educator Advisory Circle in 2017 to the start of the Legacy Schools Program in 2018, we have successfully helped to create a vital and relevant education program that is forming a national movement. The Legacy Schools Program, which connects students and educators to further reconciliation through awareness, education and action, emerged from our support.



Northland supports the Downie Wenjack Fund's Legacy Schools Program to connect Canadian students and educators to the country's Indigenous heritage.

Prosperity for all Stakeholders

Developing Meaningful Relationships

We fully acknowledge that the land on which many of our projects operate is adjacent to or includes traditional Indigenous lands. We respect our obligation to consult with the Indigenous communities on these lands. We strongly believe in operating in harmony by forming partnerships to create value for these communities and, where possible, actively provide engagement and advancement opportunities for our partners.

At all times, we strive to be good neighbours and deliver ongoing benefits through community investments, First Nations partnerships and philanthropic efforts. We support not-for-profit activities and provide sponsorships, in-kind contributions and donations to our First Nations partners. We invest in communities in a visible and meaningful way that enhances the lives of as many community members as possible while maintaining financial responsibility.

\$CAD thousands	2018	2017
Donations	\$1,016	\$700

Continuing our Commitment

When we rolled out a renewed company-wide community investment strategy in 2017, supporting our partners was once again identified as a high priority.

One of the first investments we made was supporting the Gord Downie & Chanie Wenjack Fund (**DWF**). Established in 2016, DWF's aim is to build understanding and create a path toward reconciliation between Indigenous and non-Indigenous peoples in Canada. The DWF Legacy Schools program began in 2018 and is a free national initiative that provides educational resources to engage, empower and connect students and educators to further reconciliation through awareness, education and action.

We feel our support for the program helps to honour the Indigenous communities with whom we maintain equitable partnerships throughout our Ontario operations. We look forward to seeing the program continue to grow.



The Spirit of Partnership

When Northland's former Chief Executive Officer, John Brace, retired in 2018, a pipe ceremony was held in his honour on Manitoulin Island, Ontario with the six chiefs and senior staff of the United Chiefs and Councils of Mnidoo Mnising. The ceremony formally transitioned his departure and gave thanks for his legacy, and was a great opportunity to welcome in Mike Crawley as Northland's new President and Chief Executive Officer. Following a traditional Ojibway blessing and drum song by local students, a meal, featuring local ingredients, was shared. After dinner, gifts were presented, including a wonderful painting, *The Spirit of Creation and Turtle Island* by artist James Jacko. We will continue to strengthen our partnerships with Indigenous communities and allow our integrity and values to live on under the leadership of Mike Crawley.



John Brace, Mike Crawley and Tim Richardson stand in front of James Jacko's painting in Northland's head office in Toronto, Ontario.

Prosperity for all Stakeholders

Northland's community investment strategy involves our entire workforce, from the giving of our time to contributing financially through direct donations or raising funds, including supporting events like the Ride to Conquer Cancer. For upcoming construction projects such as Hai Long in Taiwan and La Lucha in Mexico, we incorporate social and philanthropic efforts into our development plans and construction expenditures.

Engaging our Team

Wangong Oyster Association

In Fall 2018, Northland, along with Yushan Energy, our partner on the Hai Long offshore wind projects, signed a Memorandum of Understanding (**MoU**) with the Wangong Oyster Association. The MoU shows our commitment to work together to develop and promote green energy education in the Changhua Region. It is important to us to build strong relationships and support the local community in the regions where we develop and operate facilities.



Left to right: Tsung-Hua Chen – CEO of Yushan Energy, Chairman Ji Yu – Chairman of Wangong Oyster Association and Morten Melin – Executive Vice President of Construction.

Northland Power Europe: Offsite Team Event

More than 60 colleagues joined Northland's operations team in Europe this year, coming from Nordsee One, Deutsche Bucht and other facilities. In November, the entire team participated in their first offsite team event in Emden, Germany. The team got to know each other over Northland-specific trivia and a geocaching challenge, and celebrated the successful establishment of Northland Power Europe, an important milestone for Northland.



Prosperity for all Stakeholders

Investing in our Communities

The Ride to Conquer Cancer

For the past 12 years, the Ride to Conquer Cancer, benefitting Princess Margaret Cancer Centre, has taken place to great fanfare. Cyclists embark on a 2-day journey of over 200 kilometres from Toronto to Niagara Falls. In 2018, our employees participated in the Ride for the first time, with five cyclists across three teams. The teams collectively raised \$181,064 for the cause.



Left to right: Paul Kaminski - General Manager of Construction, Ana Reyes - Health and Safety Manager and Dino Gliosca - Vice President of Engineering.

Relay Education

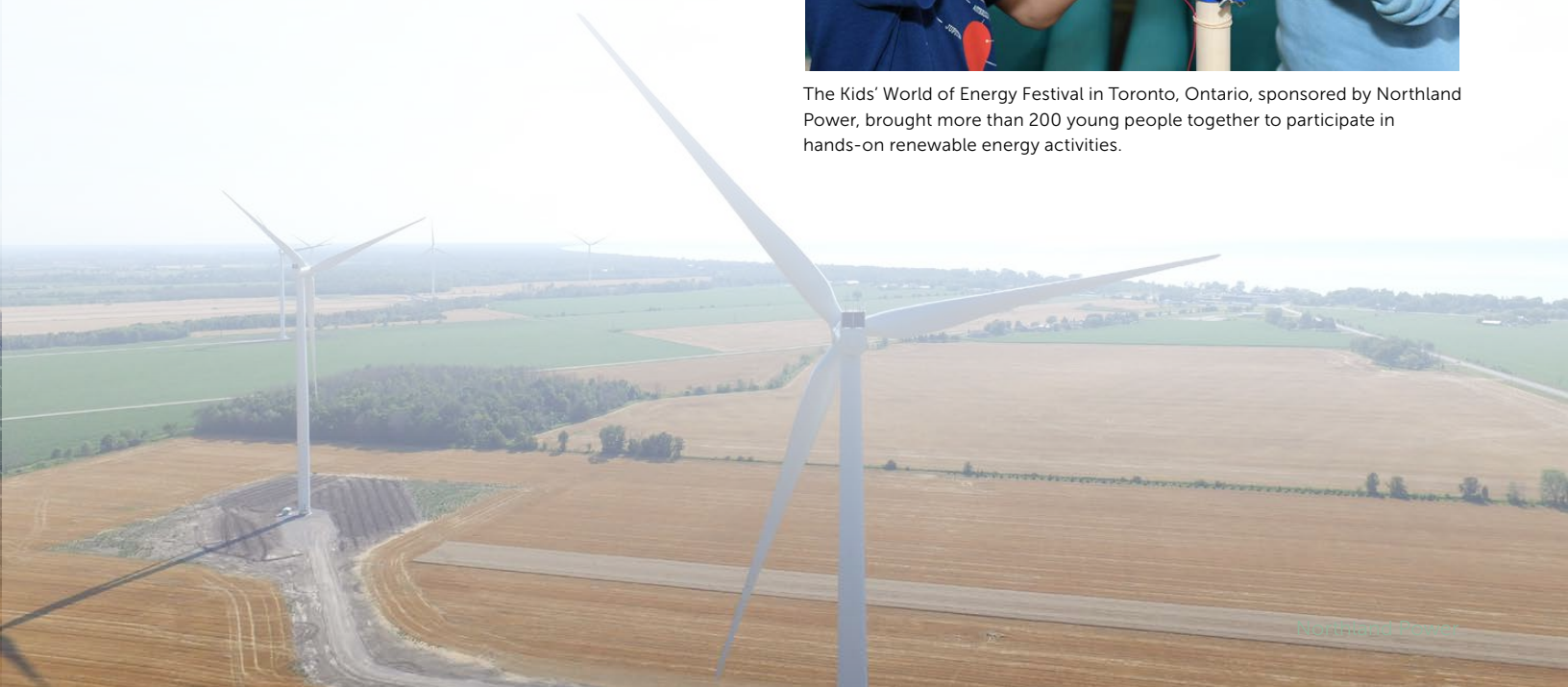
Northland Power supports Relay Education, a charity teaching Canadians about the science and benefits of renewable energy. In 2018, we contributed to the Kids' World of Energy Festival in Toronto, Ontario which engaged more than 2,100 children and adults in hands-on energy activities. We also supported energy workshops that were delivered to close to 200 Indigenous students in five Alberta and Saskatchewan communities.

"I think it's an extremely rich learning experience. It reinforces the big ideas I'm trying to teach in my classroom. The Festival is great because it teaches students and teachers creative and innovative ways to engage with energy conservation. It builds into the larger picture of what being a responsible citizen is."

– Sarah Lowes, Gr. 5/6 Teacher in Halton Region, Ontario



The Kids' World of Energy Festival in Toronto, Ontario, sponsored by Northland Power, brought more than 200 young people together to participate in hands-on renewable energy activities.



Global Reporting Initiative Index

Strategy & Analysis		Page
102-14	Statement of the most senior decision-maker	2
Organizational Profile		Page
102-1	Name of the organization	1
102-2	Primary brands, products and/or services	1
102-3	Location of organization's headquarters	10
102-4	Number of countries where the organization operates, and/or are relevant to sustainability issues	1,7
102-6	Markets served	1, 7, 10
102-7	Scale of the organization	1, 7, 10
102-8	Total number of employees by employment contract and gender	11
	Number of permanent employees by type and gender	
102-41	Percentage of total employees covered by collective bargaining agreements	11
Governance		Page
102-18	Governance structure of the organization including committees, and any committees responsible for decision-making on economic, environmental and social impacts	10
102-20	Executive-level position/positions with responsibility for economic, environmental and social topics, and whether they report directly to the highest governing body	10
101-22	The composition of the highest governance body and its committees.	10
101-23	Whether the chair is also an executive officer	10
102-32	The highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material aspects are covered	Executive Office

Identified Material Aspects & Boundaries		Page
102-46	Process for defining report content and aspect boundaries	4
102-47	Material aspects identified in the process of defining report content	4
Stakeholder Engagement		Page
102-40	List of stakeholder groups engaged by the organization	4
102-42	Basis for identification and selection of stakeholders with whom to engage	4
Report Parameters		Page
102-50	Reporting period for information provided	4
102-51	Date of most recent report	4
102-52	Reporting cycle	4
102-53	Contact point for questions	4
102-54	"In Accordance" option chosen	4
102-56	Policy and current practice re: seeking external assurance for the report	4
Ethics & Integrity		Page
102-16	Mission, values, codes of conduct	1,5 northland.com
102-17	Mechanisms for advice and concerns about ethics	10

Global Reporting Initiative Index

Finance		Page
201-1	Direct economic value generated and distributed, incl. revenues, op. costs, employee wages & benefits, donations & other community investments, retained earnings & payments to capital providers/ governments	11, 16, 19
201-2	Financial implications & other risks & opps due to climate change	17
201-4	Financial assistance received from government	16
203-1	Impact of infrastructure investments & services for public benefit	16
205-1	Total number and percentage of operations assessed for risks related to corruption; Significant risks related to corruption identified through risk assessment.	17
205-2	Communication and training about anti-corruption policies and procedures	17
205-3	Confirmed incidents of corruption & actions taken	none
206-1	Legal actions for anti-competitive behaviour, anti-trust & monopoly practices	none
Environment		Page
302-1	Energy consumption within the organization	14
303-1	Interactions with water as a shared resource	13
303-3	Water withdrawal	13
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	15
304-2	Significant impacts of activities, products, and services on biodiversity	15
305-1	Direct (Scope 1) GHG emissions	14
305-4	GHG emissions intensity	14
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	14
306-3	Significant spills	none
307-1	Non-compliance with environmental laws and regulations	none

Health & Safety		Page
403-1	Occupational health and safety management system	8
403-2	Hazard identification, risk assessment, and incident investigation	8
403-3	Occupational health services	9
403-4	Worker participation, consultation, and communication on occupational health and safety	8
403-5	Worker training on occupational health and safety	9
403-6	Promotion of worker health	9
403-9	Work-related injuries	none
403-10	Work-related ill health	none
Human Resources		Page
404-2	Programs for upgrading employee skills and transition assistance programs	11
404-3	Percentage of employees receiving regular performance and career development reviews	11
405-1	Diversity of governance bodies and employees	10, 11
406-1	Incidents of discrimination and corrective actions taken	none
412-1	Operations that have been subject to human rights reviews or impact assessments	none
Human Rights		Page
408-1	Operations and suppliers at significant risk for incidents of child labour	none
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	none
Indigenous		Page
411-1	Incidents of violations involving rights of indigenous peoples	none

One of our many solar arrays in Prince Edward County, Ontario.



Our 100 MW on-shore wind farm McLean's Mountain on Manitoulin Island, Ontario at sunset.



Our Gemini offshore wind farm supports the long-term health of the North Sea ecosystem through the development of oyster banks. See our 2017 Sustainability Report for details. / WWF ARK Onderwaterbeelden

The Payroll team taking a tour of our 260 MW North Battleford thermal facility located in Saskatchewan.



Disclaimer

This report contains certain forward-looking statements that are provided for the purpose of presenting information about management's current expectations and plans. Readers are cautioned that such statements may not be appropriate for other purposes. Forward-looking statements include statements that are predictive in nature, depend upon or refer to future events or conditions, or include words such as "expects", "anticipates", "plans", "believes", "estimates", "intends", "targets", "projects", "forecasts" or negative versions thereof and other similar expressions, or future or conditional verbs such as "may", "will", "should", "would" and "could". These statements may include, without limitation, statements regarding future adjusted EBITDA or adjusted EBITDA, cash flows and dividend payments, the construction, completion, attainment of commercial operations, cost and output of development projects, plans for raising capital, and the future operations, business, financial condition, financial results, priorities, ongoing objectives, strategies and outlook of Northland and its subsidiaries. This information is based upon certain material factors or assumptions that were applied in developing the forward-looking statements, including the design specifications of development projects, the provisions of contracts to which Northland or a subsidiary is a party, management's current plans, its perception of historical trends, current conditions and expected future developments, as well as other factors that are believed to be appropriate in the circumstances.



The 6 MW turbines at our 332 MW Nordsee One offshore wind farm creating renewable power.



Northland Power is an independent Canadian power producer with 26 operating power generation facilities located in Canada, Germany and the Netherlands, including two offshore and four on-shore wind farms, six thermal facilities, and 14 solar facilities. In addition, Northland is currently constructing 399 MW of generating capacity, representing Deutsche Bucht offshore wind project in the German North Sea and the La Lucha solar project in Mexico, in addition to its 60% equity stake in the 1,044 MW Hai Long project under development in Taiwan. We develop, finance, build, own and operate our own power generation facilities that produce electricity from clean-burning natural gas and renewable resources such as wind, solar and biomass.

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Intelligent Energy for a Greener Planet™

