

# SUSTAINABLE DEVELOPMENT REPORT

ENVIRONMENT

Innergex Renewable Energy Inc. ("Innergex" or the "Corporation") is an independent renewable power producer which develops, acquires, owns and operates hydroelectric facilities, wind farms and solar farms. As a global Corporation, Innergex conducts operations in Canada, the United States, France and Chile.



Renewable Energy. Sustainable Development. At Innergex, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Working with nature to harness the power of water, wind, and the sun in a responsible way is a fundamental principle in our development strategy. We are proud of our track record and are committed to pursuing projects that balance economic, environmental, and social considerations.

On March 25, 2019, Innergex announced that an agreement has been reached to sell its wholly owned subsidiary Magma Energy Sweden A.B. which owns an equity interest of approximately 53.9% in HS Orka hf ("HS Orka"). The activities of HS Orka included two geothermal facilities, one hydro project in development and prospective projects in Iceland which are now treated as discontinued operations. As a result, they are not included in this document.

All data in this report are for the years ended December 31, 2018 and 2017.



Fish habitat enhancement at Kwoeik Creek in British Columbia

# NUMBER OF FACILITIES

As at December 31				
	2018		2017	
	In Operation	In Development	In Operation	In Development
HYDRO	37	2	31	
WIND	25	1	22	
SOLAR	4	4	1	
TOTAL	66	7	54	

#### **INSTALLED CAPACITY**

As at December 31				
	2018		2017	
	Gross <sup>1</sup>	Net <sup>2</sup>	Gross <sup>1</sup>	Net <sup>2</sup>
HYDRO	1,181	797	732	597
WIND	1,629	1,139	1,081	532
SOLAR	78	52	27	27
TOTAL	2,888	1,988	1,840	1,156

# CONSOLIDATED ENERGY OUTPUT (GWh)<sup>3</sup>

As at December 31

	2018	2017
HYDRO	2,825	2,775
WIND	2,200	1,579
SOLAR	61	40
TOTAL	5,086	4,394

1 Gross installed capacity is the total capacity of all operating facilities of Innergex.

2 Net capacity is the proportional share of the total capacity attributable to Innergex based on its ownership interest in each facility.

3 Production as reported in the Corporation's 2017 & 2018 Management Discussion & Analysis. Some facilities are treated as joint ventures and associates and accounted for using the equity method. Their production is not included in the Corporation's consolidated production and therefore excluded from this production table. For more information on the Corporation's joint ventures and associates, please refer to the "Investments in Joint Ventures and Associates" section of the 2018 Annual Report.

# WE ARE PART OF THE SOLUTION TO CLIMATE CHANGE

Our mission is to increase our share of global renewable energy generation. Innergex's pursuit and promotion of renewable energy is integrated into our business strategy. By remaining committed to producing energy exclusively from renewable sources, Innergex has positioned itself as a leader in a sector that is actively taking steps to address the challenges of climate change.

In 2018, we powered the equivalent of 686,188 households with clean, renewable energy.<sup>4</sup>

#### **CARBON EMISSIONS**

By reducing fossil fuel combustion for electricity generation, renewable energy facilities promote cleaner air while reducing greenhouse gas ("GHG") emissions. Our hydroelectric, wind and solar facilities produce no air pollution and no significant GHG emissions.

Time-limited emissions are associated with site construction, mainly from machinery operation. Across its operations, Innergex had Scope 1 emissions (mainly attributable to fuel combustion in maintenance vehicles) of 0.00016 tonnes of  $CO_2$  equivalent per MWh in 2014. Our activities have not significantly changed materially in the meantime. After a five-year period, we will update this figure with 2019 data.

In 2018, Innergex produced

6,372,388,000 kWh of renewable electricity, reducing fossil fuel usage.

With the US marginal emissions factor, this would save 4,506,241 metric tonnes<sup>5</sup> of  $co_2$ 

an amount equivalent to the yearly emissions of **956,739** gasoline passenger vehicles<sup>5</sup>.

# TARGET

Continue to produce electricity from renewable sources that have no significant GHG emissions, that contribute to GHG emissions reduction and help meet climate change targets.

#### **CONSERVING WATER**

Maintaining the integrity of water resources is a priority in the environments in which we conduct activities. Our commitment to mitigating or avoiding impacts on water-based resources begins in the design phase of a project and lasts until its decommissioning.

Our hydroelectric facilities use water in a non-consumptive fashion. Using the natural flow of a river, water is partially diverted through a penstock to a powerhouse where it rotates the turbines to generate electricity and is then returned to its original river source free of contaminants.

Our wind and solar photovoltaic facilities do not require water to produce electricity. Though solar panels typically are cleaned one or two times a year, the quantity of water used is considered negligible. Our solar thermal facility uses a limited amount of water in a closed loop for heat transfer and also requires about 2,500 m<sup>3</sup> of water per year for regular cleaning, a quantity equal to one Olympic size swimming pool.

In 2018, we recorded 16 significant spills at operational facilities. The majority of these spills were minor in nature (< 1L) and cleaned up immediately. Any affected soils were disposed of properly in accordance with regulations.

# TARGET

Continue to produce energy from renewable sources contributing to reducing water consumption.

4 Based on Innergex's 2018 consolidated generation plus its share of the Joint Ventures and Associates in each country in which we operate, divided by the local average household consumption, with data from the World Energy Council (2014).

5 Base on Innergex's consolidated generation plus its share of the Joint Ventures and Associates of 6,372,388,000 kWh, and calculated through https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

#### MINIMAL ENERGY CONSUMPTION

Innergex uses renewable energy to power its facilities, with a few exceptions. Due to some facilities' remote geographic locations, it is sometimes necessary to employ propane gas to power small generators. A variety of vehicles consuming fossil fuels are also needed for operations and maintenance, but we are increasing the number of electric vehicles that are part of our fleet. Our two main offices located in Quebec and British Columbia are connected to provincial power grids which produce electricity mainly from renewable sources [99.8% and 98.4% of their electricity is generated from renewable sources respectively]<sup>6</sup>, therefore the majority of the energy consumed by the Corporation originates from renewable sources.

#### **REDUCING WASTE**

Our hydro, wind and solar facilities do not generate waste during their operation. Innergex continues to encourage the reduction, reuse and recycling of waste throughout its offices and facilities and follows all applicable regulations to ensure the environmentally sound management of waste.

During construction activities, we ensure that all parties involved in the construction commit and implement rigorous processes in order for the waste generated and hazardous materials used to follow a strict waste removal protocol ensuring that waste is collected and recycled or disposed of, in accordance with applicable regulations and as outlined in our Environment, Health and Safety Policy. In 2018, we implemented a new Spill Management Procedure in British Columbia designed to improve our response and align with provincial regulations. We are presently expanding the procedure in our other areas of operation based on provincial, state and federal requirements.

### LANDS AND BIODIVERSITY

Innergex is keenly aware of the impact energy developments have on the landscapes in which they are developed. Our priority is to mitigate, minimize or avoid those impacts to the best of our ability by employing our expertise, experience and the most current technological and scientific methods available. We strive to bring the land that was temporarily disturbed during construction back to its original state as much as possible.

As our projects are located in remote areas, consideration of wildlife plays an important role in the planning, construction and operation phases of our projects. We have a successful record of partnering with government, Non-Governmental Organizations ("NGOs"), conservation groups, academia and local organizations to design and conduct solutions to mitigate human-wildlife interaction and disturbance to important wildlife ecosystems.

#### MONITORING PROGRAMS

From conception to construction through operation, we invest in environmental monitoring programs to help us understand the terrestrial and aquatic environments around our projects. Our environmental assessment programs begin before we break ground (with environmental assessment and baseline data collection) and continue years after the first electrons are produced in our facilities. Monitoring results contribute new data and knowledge to a relatively under-researched area and can greatly add to our understanding of the environmental issues associated with renewable energy development. In 2018, we concluded the second year of a wildlife monitoring program at our Mesgi'g Ugju's'n wind facility in Quebec, Canada. Results showed that the facility has not had any specific issues with bird and bat mortalities and that the mortalities attributed to its operation are well below Canadian averages for wind farms. The project's three-year monitoring program wraps up in 2019.

#### ENVIRONMENTAL MANAGEMENT SYSTEM

Innergex maintains an environmental management system that applies to each of its operating renewable energy facilities. This system consists of a combination of standard procedures (management and prevention of environmental spills, waste management, etc.) as well as procedures that are unique to each facility. Innergex's approach is to view each facility as a stand-alone with specific environmental requirements that derive from permits and approvals pertinent to each facility. This may include, for example, procedures for water use and compliance, fish protection, or road usage at each hydro facility, and procedures for protection of birds, bats and other wildlife, as well as vegetation at our wind facilities. These procedures are overseen by an in-house environmental team, supported by independent specialist contractors and site operations staff that are trained to adhere and perform their tasks within these site-specific requirements.

#### **EMERGENCY RESPONSE PLAN**

As part of its Corporate Emergency Response Plan, Innergex has identified potential environmental, health and safety emergencies and has prepared response instructions relating to these potential emergencies. This Plan, as well as the Site-Specific Safety Plan, are available at each facility and in the offices as well as on Innergex's IT network. Our Operations, Health and Safety ("OHS") team works diligently to ensure the health and safety of all our employees through education, training, monitoring and one-on-site visits.

## ENVIRONMENT, HEALTH AND SAFETY

Our priority is to minimize the impacts of our operations on the environment and provide safe work conditions for our employees. Our Environment, Health and Safety Policy outlines our commitment to conducting operations in a manner that respects and protects the environments in which we operate and the health and safety of our employees, contractors and visitors. Our Environment, Health and Safety Policy was revised in 2018.

#### SUSTAINABLE DEVELOPMENT

We remain driven by the belief that the three pillars of sustainability – environmental protection, social development and economic development – are mutually reinforcing. Innergex has adopted a Sustainable Development Policy that articulates its commitment to integrating sustainable development considerations in all aspects of its business, including its strategic planning, decision-making, management and operations.



Renewable Energy. Sustainable Development.